



JANNE HARJULA

SHEATHS, SCABBARDS AND GRIP COVERINGS

THE USE OF LEATHER FOR PORTABLE PERSONAL
OBJECTS IN THE 14TH - 16TH CENTURY TURKU

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CONTENTS

ACKNOWLEDGEMENTS	8
1. INTRODUCTION	9
1.1 Research problem and method	9
1.1.1 Terminology	10
1.2 Leather as an archaeological research material	11
1.2.1 Life-cycle of a medieval leather artefact	11
1.2.1.1 Conservation of leather artefacts	12
2. HISTORY OF THE RESEARCH	13
2.1 Finland	13
2.1.1 Early research	13
2.1.2 After the Second World War	14
2.1.3 Recent research	14
2.2 Sweden	14
2.3 Norway	14
2.4 Denmark	15
2.5 Russia	15
2.6 The Baltic Countries	15
2.7 Poland	16
2.8 Germany	16
2.9 The British Isles	16
2.10 The Netherlands	17
2.11 Discussion on the history of the research	17
3. PREHISTORIC TRADITION	18
3.1 Iron Age knife sheaths	18
3.1.1 Wide, bronze-plated sheaths	18
3.1.2 Sheaths of East Finnish type	18
3.1.3 Sheaths from men's graves	19
3.1.4 The question about the suspension of the sheaths	19
3.2 Iron Age scabbards	19
3.2.1 Scabbards of the Middle Iron Age	19
3.2.2 Scabbards of the Late Iron Age	20
3.3 Discussion on the prehistoric tradition	21
4. RESEARCH MATERIAL AND THE METHOD OF RECORDING IT	22
4.1 The assemblage of the Åbo Akademi main building site excavation	22
4.2 Other materials from Turku	22
4.2.1 Vähä-Hämeenkatu 13b excavation	23
4.2.2 Uudenmaankatu 6 excavation	24
4.2.3 Old Great Market Place excavation	25
4.2.4 Aboa Vetust museum excavation (the Rettig plot)	25
4.2.5 The Library site excavation	26
4.2.6 Itäinen Rantakatu sewer construction	26
4.2.7 Other construction works in the town area	27
4.2.8 The yard of the outer bailey of the Turku Castle	27
4.3 Method of recording the research material	27

4.3.1 Measurement	27
4.3.2 Types of stitch holes and seams and their placing	28
4.3.3 Stitch types	28
4.3.4 Type of leather	29
4.3.5 Type of thread	29
5. SHEATHS	30
5.1 Manufacturing technique	30
5.1.1 Materials of sheaths	30
5.1.1.1 Materials of threads	31
5.1.2 Composition	31
5.1.2.1 Seams and stitches	31
Seam and stitch hole types	31
Placing of the seams	32
Stitched seams	32
Riveted seams	33
Thong seaming	34
5.1.2.2 Linings	34
5.1.2.3 Sheath fittings	34
5.1.2.4 Suspension modes	34
Side seamed sheaths	35
Back seamed sheaths	35
5.1.3 Modifications and repairs made by the user	36
5.2 Dimensions	37
5.3 Basic forms of sheaths	38
5.4 Decoration	39
5.4.1 Decoration techniques of sheaths	39
5.4.1.1 Leather tooling and the placement of decoration	39
Division of decoration into decorative panels	40
5.4.1.2 Other methods of decoration	41
5.4.2 Decoration motifs	41
5.4.2.1 Geometric decoration	41
Linear decoration	41
Chevrons	42
Lattice	42
Other geometric motifs	43
5.4.2.2 Interlace decoration	44
5.4.2.3 Plant decoration	44
Foliate decoration	44
Other types of plant decoration	46
5.4.2.4 Zoomorphic decoration	46
5.4.2.5 Markings of the maker's mark-type	46
5.4.3 Discussion on decoration	46
5.5 Examples of typing the sheaths	47
5.5.1 Sheaths with 'caps'	48
5.5.2 Sheaths with excised decoration on the edge	49
5.5.3 Sheaths with rows of suspension slots on the handle	50
5.5.4 Sheaths with paired lunate slits on the handle	51
5.5.5 Sheaths with a space for additional knife or tool	51
5.5.6 Unprofessionally manufactured sheaths	53
5.5.7 Sheaths for special knives or tools	54
5.5.8 The question about the dagger sheaths and the sheaths for <i>puukko</i> -knives	55
5.6 Discussion on sheaths	55

6.	SCABBARDS	58
6.1	Manufacturing technique	58
6.1.1	Materials of scabbards	58
6.1.1.1	Materials of threads	58
6.1.2	Dimensions and forms	58
6.1.3	Composition	59
6.1.3.1	The questions of the inner structure of scabbards and linings	59
6.1.3.2	Seams and stitches	60
	Seam and stitch hole types	60
	Placing of the seams	61
	Stitch types and stitch length	61
6.1.3.3	Suspension modes	62
6.2	Decoration	63
6.2.1	Decoration techniques and motifs	63
6.2.1.1	The question of impressed, longitudinal lines in scabbards	63
6.2.1.2	Other decoration motifs	64
6.3	Discussion on scabbards	64
7.	GRIP COVERINGS AND RAIN GUARDS	65
7.1	Grip coverings from swords and daggers	65
7.2	Rain guards from swords	66
7.3	Discussion on the grip coverings and rain guards	67
8.	THE MAKERS AND USERS OF THE ARTEFACTS	68
8.1	The documentary evidence of leather artisans in medieval Turku	68
8.2	The unlikely connection between the evidence of leather working and the artefacts found	69
8.3	Plant fibres as the evidence of the area of manufacture?	70
8.4	The reuse of scabbards	71
8.4.1	The phenomenon of cutting the scabbards	71
8.4.1.1	The scabbard fragments and grip coverings of the Åbo Akademi and Old Great Market Place excavations	71
	Imprints on the Åbo Akademi scabbards	72
8.5	The use and users of the artefacts studied	72
9.	CONCLUDING REMARKS	74
	SOURCES	87
	APPENDICES	
1.	Technical properties of the knife sheaths in table format	93
2.	Report on fibres from the medieval Åbo Akademi and Aboa Vetus sites, Turku, Finland (by Heini Kirjavainen)	98
3.	Index of entries by the group, type and decoration of the artefact	101
	Undated or recent sheaths and scabbards from archaeological contexts, excluded from the study	101
4.	Catalogue	103

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1. INTRODUCTION

In the 1990's, a new building was planned to be constructed by the Åbo Akademi¹ foundation on the medieval town area of Turku. The plot had been vacant for over 20 years but was archaeologically investigated only after the permission to construct a new building was granted.² An area covering 1,350 m², with cultural layers of 3.5 m – over 4 m thick preserved on circa 1000 m², was excavated by Turku Provincial Museum between April and December, 1998. I was lucky to be able to work as one of the researchers on this excavation, in its extent unique and epoch-making in Finnish historical archaeology.³

The youngest archaeologically excavated layers and structures were from the 18th century. The oldest layers and structures are dated to the latter half of the 14th century. Organic material, such as bone, wood, textiles and leather were extremely well preserved in thick organic deposits of the older contexts of the excavation. The largest assemblage of archaeological leather material in Finland up to the present was recovered from the excavation. After the conservation, the leather material was catalogued in the data base in Turku Provincial Museum.

The leather material is comprised of over 10,000 accession numbers consisting of both leather waste deriving from leather working, and leather artefacts.⁴ On the basis of the preliminary dating of the find contexts, the corpus of the leather assemblage can be dated from the earliest settlement of the area – the latter half of the 14th century - to the 15th century. From the latter half of the 15th century onwards, the number of leather finds decreases.⁵ This is mainly because of the thinness of the late medieval layers,⁶ the inorganic nature of the modern age layers, and also because of the disturbances of the layers of certain periods, especially of the latter half of the 16th century and younger.

The leather artefact material is comprised mostly of footwear (ca. 88 per cent), which is typical for excavations in medieval towns with suitable preservation conditions.⁷ Other artefact

types of leather are, for example, purses, bags and cases, bands, straps and belts, mittens, sling pouches, miscellaneous items, for example, patches, cut decorations, items of uncertain function and knife sheaths, sword scabbards and grip coverings from swords or knives.

From the excavation, 163 sheaths or scabbards of leather or fragments of these were recovered. Sheaths and scabbards form the second largest leather artefact group after footwear. By adding this material to the sheaths and scabbards recovered throughout the decades of archaeological surveys and excavations in Turku, a large assemblage of sheaths and scabbards is acquired.

Grip coverings and rain guards are new artefact groups in the archaeological material of Turku. They are included in this study because, like sheaths and scabbards, they are essential components of the dagger or sword and its components. The whole research material of this study is comprised of 224 artefacts. Finds cited in the text are linked to the entries by the group, type and decoration of the artefact in Appendix 3 and to the find catalogue in Appendix 4 by numbers printed in bold type.

1.1 RESEARCH PROBLEM AND METHOD

The aim of this study is to present and analyse the medieval sheaths, scabbards and grip coverings found in Turku. An essential part of this study is the catalogue of the research material. In this I have collected the basic information of the finds in a uniform manner. Thus, it could be said that the questions of this study evolve at least partly from the find assemblage. More questions have evolved when I have looked over the finds again and again.⁸ By analysing the material I wish that light could be cast on medieval leather handicraft and on its products in Finland, of which very little is known so far.

The basic method is an analysis of the primal source material, the sheaths, scabbards and grip coverings found from archaeological contexts. I have tried to approach the artefacts from their makers' viewpoint. The objects are analysed through certain visible attributes, in which the manufacturing process can be seen. The question is *how were the objects made?* Here, my purpose for the analysis could be described as *intrinsic*. The emphasis is primarily on the artefacts themselves and only secondarily on the contextual variables.⁹ Elements chosen for analysis - in their essence *technical* on the grounds of the above-mentioned viewpoint - are the following.

- ❑ manufacturing materials
 - leather types, thread materials
- ❑ manufacturing technique and its quality
 - composition
 - seam placing, seam types
 - stitch types, rivets
 - linings, fittings
 - suspension modes
 - modifications and repairs
- ❑ form and size of artefacts

I am also curious about the reasons behind the attributes found. Therefore an important point of view is *what are the decisions the maker has made and what are the possible reasons for the decisions?* Here, my approach can be described as *interpretative*. Again, technical and functional aspects are emphasized.¹⁰

After the analysis, there stand out certain groups of artefacts, which could be described as *types*. In the case of knife sheaths, these types are presented in Chapter 5.5. In the case of scabbards and grip coverings, groupings of this kind are not possible to make with the present material. Even a large part of knife sheaths can be grouped only on the basis of their very basic properties (seam and stitch types, placing of the seam, a symmetrical or asymmetrical shape and size).

It is questioned if some chronological development or changes in the artefacts can be noticed during the Middle Ages. Therefore the dating of the finds is important. Here the *find contexts* of the objects step forth. The find context is the primary tool in dating the finds. Artefact dating is used only as a secondary method.

Which elements change and which elements remain? This question applies to the course of the Middle Ages and also when the changes from

the Iron Age to the Middle Ages and from the Middle Ages to the Post-Medieval Period are discussed. The Iron Age sheaths and scabbards are discussed briefly in Chapter 3. Because the lack of the archaeological material in the case of Post-Medieval sheaths, ethnographic artefacts and studies have been used as comparative material. The changing form of sheaths in the Post-Medieval Period has been discussed in Chapter 5.3.¹¹

As personal equipment accompanying the owner, the artefacts of this study inevitably reflect the mentality and aesthetic values of their period and society. Sheaths and scabbards have been visible and public when carried along. Thus, they reflect both the values of the owner and the values of the surrounding society. These can be viewed through decoration, a powerful means of symbolic communication. However, this wide subject needs a special study of its own. In this study, I have discussed the decoration from the viewpoint of the different decoration techniques and motifs and their correlation with some other attributes of the artefacts.

Essential but also very difficult questions are: where and by whom were the sheaths, scabbards and grip coverings of this study made, and who were the users of the artefacts? Here, in addition to the archaeological material, documentary and pictorial sources and comparison to other areas with more information of this kind are of avail.

1.1.1 TERMINOLOGY

Sheath can be defined as 'a case or covering for the blade of a sword, dagger or the like',¹² (Fi. *tuppi*). Scabbard can be described as 'a sheath for the sword or the like',¹³ (Fi. *huotra*). In this sense, scabbard would be a special type of sheath, manufactured for sword. Another kind of distinction between sheath and scabbard can be done irrespective of the blade type. According to this definition, sheaths would be flexible and scabbards non-flexible, because of the wooden components beneath their leather coverings.¹⁴ In this work, the terms sheath and scabbard are used in the following way. Sheaths are generally for knives and are not lined with a hard material. Scabbards are generally for swords and may be lined with wood or other type of hard material.

This definition raises a question. Should the artefact be categorized as a sheath or a

scabbard – or in other words – for what kind of item was the sheath or scabbard manufactured for? The problem is mainly caused by the fact that the classification must, in most cases, be made without help of the knife or sword. These items seem to have been discarded separately from sheaths and scabbards.¹⁵ The classification of sheaths and scabbards manufactured for different types of knives and swords has the same problems as archaeological classification in general. Especially the distinction between knife and dagger sheaths and between knife or dagger sheaths and sword scabbards is problematic.

The primary division of the research material into knife sheaths, sword scabbards and grip coverings done before and during the writing of this study is hypothetical itself, and it is to be tested in this study. In the case of grip coverings, the problem is that they often have been misinterpreted as sheaths. However, I think that they can be discerned from sheaths by certain attributes.

Even if the deposition of sheaths and scabbards, found from the cultural layers of medieval towns, differs from that of artefacts carried in them,¹⁶ the development of the former closely follows the changes in the latter. The case always tells us something about its content, even if the content is no longer inside. By this means, the sheaths and scabbards are closely connected to knives and swords by their form and size, even if the emphasis of this study is on their cases. The hypothesis is that by means of studying the cases, information of the contents can also be gained.

1.2 LEATHER AS AN ARCHAEOLOGICAL RESEARCH MATERIAL

1.2.1 LIFE-CYCLE OF A MEDIEVAL LEATHER ARTEFACT

The life-cycle of a medieval leather artefact began with the supply of raw material, the skin of an animal.¹⁷ Next, the skin had to be converted water resistant by the tanning process. In the Nordic countries it was common that the leather artisans themselves tanned and curried skins they needed.¹⁸ The most common tanning method in the Middle Ages was vegetable-tanning. Skins and the bark (for example oak or willow bark) were put in tanning vats in layers and the vat was filled with water and the skins immersed

in tanning bath. A tanner's job was to take the raw skin and produce a rough, non-putrescible piece of leather. A currier's job was to convert this piece into a uniform, attractive material, having the necessary thickness and the degree of softness and flexibility governed by the end use. The work of the tanner and currier together took several months or even years.¹⁹

Next the tanned leather was manufactured into artefacts. Leather waste from scraping the skins and cutting the leather was produced as a by-product. This is the first phase when archaeological leather material was formed, *the phase of production*. Leather waste can be used as an indicator of leather working in the area or in the near vicinity. In addition to leather waste, indicators of the production are 1) tools which can be connected to leather working, 2) master forms of objects, 3) structures which can be connected to production. After the manufacturing process, the items were sold to customers. There may have been specialised artisans for manufacturing different types of leather artefacts in Turku in the Middle Ages even if the literary sources are very sparse (Chapter 8.1).

An artefact lived its life with the user, maybe with many successive ones. The item could be repaired before it eventually became worn out and was left of use. The artefacts found from the excavations are comprised of material which has been lost, discarded or left in situ because of a fire, for example. This is the second phase when archaeological leather material was formed, *the phase of discarding the objects*. In my opinion, these artefacts cannot be used as direct indicators of the leather working in the area even if it was presumed that the artefacts were of local manufacture. This is simply because the products of handicraft do not end up in the same place where they were manufactured (Chapter 8.2). Instead, the artefacts discarded can be used as indicators of the use and users of leather items in town.

The most important causes and effects for the preservation or decaying of leather in the soil are the tanning treatment of the leather and its environment. Untanned skin degrades rapidly in the soil. On the other hand, the vegetable-tanned leather is preserved well in a moist environment. Water, which has been fatal for the untanned skins, has in fact been the main factor in preserving the vegetable-tanned leathers. Only a few micro-organisms can function in an

anoxic environment, which has, for example, prevailed in the moist, medieval layers of the Åbo Akademi excavation. Oxygen in the layers with mineral content leads to a gradual decaying of the leather. Inferior preservation conditions of this kind prevailed in the younger layers, from the latter half of the 16th century and younger in the Åbo Akademi excavations.

Thick layers of the medieval towns form exceptionally good conditions for the preservation of the organic material. From the Iron Age, there are very few leather finds because find places corresponding the environmental conditions of the medieval layers of towns do not exist. It is also possible that the methods used in the treatment of leather have been different from those in the Middle Ages and probably not water-repellent. Methods of this type are, for example, oil-tanning, brain-tanning, smoke-tanning and alum-tawing.

Vegetable-tanning was probably not known, or at least it was not yet widely used, at the end of the Iron Age, which ends in South-West Finland ca. A.D. 1150/1200. This could be indicated by the fact that of the leather material from the Iron Age, only little fragments have been preserved in contact with the copper-alloy artefacts of the burials. The copper ions are toxic for the micro-organisms, in other words, they preserve organic materials such as textile, leather, wood or bone. Leather can also be preserved mineralized in association with other metals, for example, iron.²⁰

Also in the layers of Post-Medieval Period the preservation of leather is often inferior to the medieval layers. Since the late Middle Ages, the formation of the cultural layers decreased and the preservation conditions declined. Reasons for this phenomenon could have been the decrease in the amount of waste and the intensification of the cleansing maybe because of the changing ideas of hygiene. Thick layers were formed on the uncovered soil where animals moved

freely, and because of the drying of which, waste could be used. On the other hand, on the paved or wood covered streets and yards, the formation of cultural layers was much slower.²¹ Environmental factors must be stressed when making conclusions based on the amount of the organic material in certain contexts and between different contexts.

1.2.1.1 CONSERVATION OF LEATHER ARTEFACTS

Artefacts absorbed in water need instant treatment when removed from soil. Water needs to be replaced with some substance for the preservation of the structure of leather or otherwise the artefacts lose their original form and size. A widely used substance is nowadays the water-soluble plastic, poly-ethylene glycol or p.e.g. In the conservation of the Åbo Akademi leather finds, also the freeze-drying method has been used. With this method, leather with almost original colour and feel can be obtained.²² The basic aim of conservation is to preserve the materials. There is an ongoing Europe-wide discussion of the different conservation methods and their good and bad preservative qualities. There are also opinions for and against the freeze-drying.²³ Those against say that freeze-dried objects might become too brittle and the long term preservation is not known well (in fact, this is the problem with all new methods of conservation).

As an archaeologist, I only have an opinion concerning the secondary aim of the conservation, to make and keep objects in such condition that they can be researched. The original colour and feel of the items of the freeze-dried objects greatly helps the archaeological research process. The handling of the freeze-dried materials is more comfortable than of the p.e.g. treated materials. In addition, the visual examination of the items becomes easier because the freeze-dried items are usually lighter-coloured than p.e.g. treated.

2. HISTORY OF THE RESEARCH

In the following the research history of sheaths, scabbards and grip coverings is looked at. The emphasis is on the cultural areas of the Baltic Sea and the North Sea. Some studies outside this area (for example, Konstanz, South-Germany) are included if there is material important in regard for this study. The division in different areas is made on the basis of the present day borders of the countries even if, for example, the southern parts of Sweden were part of Denmark, and Finland was part of Sweden in the Middle Ages.

2.1 FINLAND

When medieval leather artefacts have been discussed, the emphasis has been on footwear. This is natural considering the usually good representation and sometimes even overrepresentation of footwear compared to other leather finds from urban excavations. Even if the publications discussing medieval sheaths or scabbards have been sparse, this artefact group has not been left completely unnoticed. Sheaths and scabbards have been found in Turku since the beginning of the 20th century in surveys of different kinds of construction works and archaeological excavations.

The oldest finds are usually individual finds and without a proper find context. With the systematic archaeological field work of the past two decades, the number of finds has multiplied. New materials, good information about the find contexts and new research methods allow a good starting point for new studies. Sheaths and scabbards have aroused interest especially in recent studies from the 1990's onwards.

2.1.1 EARLY RESEARCH

In an article, dealing with the structures and artefacts found during the construction works in the late 19th century and at the turn of the next century in Turku, Hjalmar Appelgren mentions that

among the leather finds from the groundwork pit from Hämeenkatu 17,²⁴ there are also knife sheaths. One of these is discussed and also illustrated in Appelgren's article.²⁵ Appelgren mentions that the sheath derives from the clay layer, from 3 to 4 metres deep. He dates the sheath to the 13th century or the first half of the 14th century on the basis of the find context with other medieval finds and also on the bird-figure decoration he had seen on the illustrated manuscripts and on the works of metal from the 13th and the 14th centuries.²⁶ In addition to this sheath, other leather finds were four other knife sheaths, purse fragments and shoe soles.²⁷ Appelgren's article is the first and the only one before the Second World War, which mentions the knife sheaths and also leather finds of medieval Turku in general, even if he only discusses them in brief.

2.1.2 AFTER THE SECOND WORLD WAR

In 1952 – 1953, a large scale sewer-construction work in Turku was carried out following the eastern riverside of the River Aurajoki from the south side of Aura Bridge to the Old Great Market Place and further to Cathedral Park. The archaeological survey of the construction work carried out was led by Niilo Valonen, the head of Turku Provincial Museum at that time.²⁸ Among the large assemblage of archaeological finds, there were also sheaths and scabbards, dated to the Middle Ages by Valonen.²⁹ Some of these are illustrated, although not discussed by Valonen in his article.³⁰

Ella Kivikoski dated one of the sheaths found from the mixed find context of Valonen's survey to the Karelian I Crusade Period (A.D. 1025 – 1300) on the basis of the sheath's acanthus scroll decoration motif. This motif is noticed in Karelian artefacts of the Crusade Period.³¹ At the time of Valonen and Kivikoski, a sheath with this kind of foliate decoration from an urban excavation was a unique item. Later, more sheaths with this kind of ornamentation

have been found in Turku and other sites in Western Europe from datable contexts of clearly later dating, from the 14th century till the Post-Medieval Period (see Chapter 5.4.2.3).

2.1.3 RECENT RESEARCH

Next studies, discussing the medieval sheaths and scabbards in Finland, are not to be found until the 1990's. Satu Mikkonen-Hirvonen studied in her M.A. thesis the leather finds from Uudenmaankatu 6 excavations carried out in 1986 – 1988.³² There were three knife sheaths in the material. One of these is later than medieval.³³ The contexts of the other two sheaths can be dated to the Middle Ages. The dating, manufacturing technique and decoration, whether the foliate *acanthus* decoration should be considered to be of eastern influence, or not, are discussed. Parallels to the sheaths are searched from the materials of Kransen, Uppsala and Helgeandsholmen, Stockholm.

In her article Marita Kykyri gives a detailed analysis about the medieval knife sheaths and sword scabbards of the castle of Kastelholm in the Åland Islands. There are 13 sheaths or scabbards in the material.³⁴ This is the first article in Finland dealing in its entirety with medieval, archaeological knife sheaths and sword scabbards. The possibilities of the study of this artefact group - medieval handicraft technique, the material culture and the aesthetic and artistic values - are presented.

In her M.A. thesis, Sanna Jokela discusses the leather finds from the Aboa Vetus museum excavation in Turku.³⁵ In this assemblage, there are nine knife sheaths and one fragment of a sword scabbard. The manufacturing technique, material, dating and decoration are discussed and parallels searched, for example, from Svendborg, Denmark. One sheath from the Aboa Vetus Museum and a few grip coverings from the Aboa Vetus Museum excavation and Åbo Akademi main building site excavation have also been discussed in brief in a recent article.³⁶

2.2 SWEDEN

Ragnar Blomqvist's article about the medieval swords, daggers, sheaths and scabbards of Lund has despite of its appearance as early as 1938 been an important and referred article in Sweden and

also in many other European countries up to these days.³⁷ In the article, Blomqvist firstly discusses the sword finds, their dating and possible places of their origin. He discusses next the different types of daggers and dagger-like knives. Most of the article is devoted to the discussion of sheaths and scabbards. A description of the finds is given, and taken into consideration are, for example, the source criticism when dating the sheaths by means of the decoration, the possibility of local scabbard manufacturing and the likelihood of wooden linings in scabbards. Some medieval sheaths of Lund from Thulegrävningen and PK-banken excavations have also been published in association with knives and swords but without a further discussion.³⁸

From Helgeandsholmen, Stockholm, about 50 sheaths with dating mostly to the 14th century have been found. An observation made by the authors was that about half of the knife sheaths were decorated, when on the other hand fragments from sword scabbards were plain.³⁹

Knife sheaths have also been found in excavations in Kransen, Uppsala. About 50 sheaths were recovered mainly from the layers of the 14th and the 15th century. In Kransen, knife sheaths were the second largest leather artefact group. Most of the sheaths were undecorated. The decorated ones were decorated either with geometrical ornamentation or with stamps.⁴⁰

Of the Swedish finds the Bockstensman must be mentioned. The find is dated to the 14th century.⁴¹ Among the leather artefacts worn or carried by the man found in the peat bog of Bocksten, Halland, there were two knives with sheaths. One of the sheaths is of a type with a cap.⁴²

2.3 NORWAY

Some medieval sheaths were presented by Sigurd Grieg in a year 1933 publication discussing the medieval finds from Oslo and Bergen. In addition to the leather sheaths, there were also four sheaths from the 15th century made of wood with mountings of tin. Parallels to these sheaths were found from Germany and consequently the sheaths were considered to be imported artefacts. Leather sheaths were decorated with stamped heraldic motifs and impressed geometric motifs. Also the leather sheaths were considered to be imported artefacts, from England. They were

dated to the 14th and 15th centuries. In addition to the knives and sheaths, swords and some scabbards were presented too.⁴³

Among the leather finds from Folkebibliotekstomten, Trondheim, there were 32 knife sheaths of different forms and sizes and also 38 sword scabbards. Most of the scabbards were small fragments. Six fragments were over 30 cm long and not a single one was complete. According to Oddlaug Marstein, some decorated fragments could be from belts instead of scabbards. Most of the scabbard fragments were undecorated. It was suggested that the reason for the fragmentary condition of the scabbards might be the cutting and reuse of the material. The practicality of the reuse of small fragments is questioned, however.⁴⁴

Gerd Bolstad presents in his article the medieval sheath and scabbard material, 27 examples, from the 1970's excavations from 'Mindets tomt' and 'Søndre felt', Oslo.⁴⁵ Most sheaths can be dated to the 13th and 14th centuries. In the younger layers, the organic material was not as well preserved. The material is categorized in different types by sheath forms. The hypothesis of the sheaths being imports from England is questioned. According to Bolstad, similarities in decoration can as well be considered as the more general development and movement of styles and fashions.

Most of the sheaths are for knives. The distinction between knife and dagger sheaths is seen problematic because of the many forms between these and also because clear typological criteria are missing. Sword scabbards can be distinguished by their width and possibly by the placing of the seam. The fragmentary condition of the sword scabbards is thought to be connected to the cutting of scabbards by the sword polisher working in the area.⁴⁶ Bolstad's article is an introduction for a more comprehensive study, which, however, has not yet come out.

2.4 DENMARK

Of the Danish leather material, Willy Groenman-van Waateringe's monograph of the leather finds of Svendborg could be the most important (Lund finds were discussed in Chapter 2.2 of Sweden). Among the leather finds there were 41 fragments from sheaths and scabbards. Sword scabbards can be dated mainly to the late 12th century and to the 13th century. Knife sheaths are mostly

from the contexts of the late 13th century and the first half of the 14th century. In knives, riveted seams occur too. Decoration, which is the most frequent in the 13th and 14th century sheaths is simple and occurs mostly on the front side alone. Techniques used were incision/engraving, stamping and impression, also embossing in one case. In addition to the description of the material, criteria of distinguishing the knife sheaths and sword scabbards are discussed. Also the leather types were defined and parallels to the artefacts searched from different sites in Europe.⁴⁷

In addition to Svendborg, some sheaths and scabbards from Århus, dated from the beginning of the 13th century to the beginning of the 14th century have also been published.⁴⁸

2.5 RUSSIA

The leather finds of Novgorod, Russia, have been studied and published by S.A. Izuymova.⁴⁹ However, the main focus has been on the study of footwear. Sheaths and scabbards have been only briefly noticed. More recent articles about the sheaths of Novgorod are by T.S. Varfolomeeva.⁵⁰ Other publications discussing the medieval leather finds of North-West Russia discuss mostly footwear.

2.6 THE BALTIC COUNTRIES

In Tallinn, Estonia, knife sheaths and sword scabbards have been found in the Sauna Street excavations in 1998 and 1999. So far, of the leather assemblage, only footwear has been published.⁵¹ In Tartu, Estonia, among the finds from the rescue excavation in the VII quarter of Old Tartu, there were also leather artefacts from the 13th and 14th centuries. In addition to the footwear and pouches, there were also knife sheaths.⁵²

The decorated sheaths and scabbards of Riga, Latvia have been discussed by Viktorija Bebre in her article. The material is from the period from the end of the 12th century – the beginning of the 18th century, thus part of the material is later than medieval. Most of the sheaths and scabbards derive from the excavations at the Albert Square in 1959 – 1964. From the excavations, 90 sheaths or scabbards were found and these can be dated to the 13th and 14th centuries.⁵³

2.7 POLAND

In Poland, medieval leather material has been published especially by Henryk Wiklak. These publications discuss mostly footwear. The publications dealing with knife sheaths are the articles discussing the sheaths (10th to 13th centuries) from Gdansk (Danzig)⁵⁴ and from Gniew (12th to 14th centuries)⁵⁵. Other Polish studies of knife sheaths (and scabbards) discuss, for example, the early medieval leather material from Wolin, among which sheaths are discussed.⁵⁶ In addition, the sheaths and scabbards of Wrocław (Breslau) have been discussed.⁵⁷

More recent studies are especially the leather finds of Kołobrzeg (Kolberg) among which sheaths and scabbards are discussed by Beata Wywrot.⁵⁸ In these publications, the emphasis has been on the dating and typology. To some extent, this material has also been connected to the problems of production and handicraft.

2.8 GERMANY

In Germany, leather finds have been published especially of Lübeck. Sheaths or scabbards have been found in excavations in Hundestrasse⁵⁹, Königsstrasse⁶⁰, Heiligen-Geist-Hospital⁶¹, Schlüsselbuden 16/Fischstraße 1-3⁶² and from various find places around the Lübeck harbour⁶³. Despite the many leather finds and publications, the Lübeck sheaths and scabbards have not yet been discussed in detail.

In Christiane Schnack's monograph of the leather finds from Schleswig, sheaths and scabbards are discussed.⁶⁴ The material is divided into knife sheaths and sword scabbards. Distinguishing the dagger sheaths is considered to be problematic and this is not done. The manufacturing technique of the knife sheaths is discussed with parallels found from various parts of Europe. 168 knife sheaths dated from the 11th to the 14th century are assigned types and divided in four groups on the basis of the form and the decoration. The leather types are also defined. Most of the 155 fragments, defined as sword scabbards are dated to the 13th and 14th centuries. The composition, manufacturing technique, method of suspension and the decoration are discussed.

Schnack has also researched the medieval leather material from Konstanz.⁶⁵ In this material, there are sheaths, scabbards and also grip

coverings and rain guards, which are important parallels for the artefacts of this study.

2.9 THE BRITISH ISLES

Of the British publications, Esther Cameron's monograph of the Anglo-Saxon sheaths and scabbards of England is essential.⁶⁶ Even if it discusses material clearly earlier than the material of this study, it does this in such technical detail and extent, which can be considered rare among the publications of archaeology of any subject. Thus, it is very essential from the point of view of this study both in offering detailed technical information of the essential aspects of sheaths and scabbards and in being an inspiration to a researcher, dealing with the similar subject.

Cameron examines the sheaths and scabbards as composite objects, separate from blades in this way redressing the balance between the research of knives and swords, "always attracted scholarly attention", and the sheaths and scabbards left almost unnoticed. In addition to the discussion of the sheaths and scabbards themselves, Cameron also discusses larger themes, the methodology and the nature of the material evidence, for example, the composition and the mechanisms and the forms of the decay and preservation of the materials, metals, wood, textiles and leather. Other themes are, for example, the discussion of the leather production and the origin of the vegetable-tanned leather and the dating and spreading of this tanning method in Europe.

Another essential monograph by Jane Cowgill, Margrethe de Neergaard & Nick Griffiths discusses the medieval knives and sheaths of London.⁶⁷ The manufacturing technique of both knives and the scabbards (mostly for knives, not for swords) is discussed. The decoration of scabbards is discussed in its own chapter, and so is the cultural history of the use of knives, shears, scissors and scabbards. A large part of the study is the catalogue with drawings and technical details of the material.

An earlier catalogue of the medieval artefact material of London, many kinds of leather finds included, is the Medieval Catalogue of the London Museum.⁶⁸ Outside London, among the leather material from King's Lynn and Winchester, there are also knife sheaths, discussed briefly.⁶⁹ A large volume discussing leather finds was published when I was finishing this

thesis. It is called 'Leather and Leatherworking in Anglo-Scandinavian and Medieval York', by Quita Mould, Ian Carlisle and Esther Cameron (2003).

2.10 THE NETHERLANDS

Two important publications of the medieval leather material of the Netherlands discussing sheaths and scabbards are by Carol van Driel-Murray.⁷⁰ In both articles, she discusses the manufacturing technique, decoration and suspension modes of sheaths and scabbards of Leiden, from where the largest assemblage of medieval swords scabbards in Europe has been found. The scabbards are dated to the early 14th century. In addition, these seem to be one of the few publications where the grip coverings and rain guards of swords and daggers from archaeological contexts are discussed (along with Konstanz and Amsterdam).

In the catalogue of the medieval finds from Amsterdam, there are leather items, including sheaths and scabbards and also two grip coverings.⁷¹ In addition to the finds from Amsterdam sheaths from Wijk bij Duurstede have been published among other leather finds by Groenman-van Waateringe.⁷²

2.11 DISCUSSION ON THE HISTORY OF THE RESEARCH

Sheaths and scabbards have mostly been discussed along with other excavation materials. There are only a few articles devoted wholly to the discussion of sheaths and scabbards. Larger studies are missing almost completely. The only exceptions are Esther Cameron's study of the Anglo-Saxon material, the *Knives and Scabbards* of London and the York publication. Usually the publications are more survey-like publications about certain assemblages than studies with specified research questions. If research questions exist, they usually discuss the dating and parallels of the artefacts, also the typology in some cases. Usually the large mass materials have not been discussed. This is probably connected to the very laborious nature of this kind of research.

Themes concerning sheaths and scabbards in wider contexts, for example, studies concerning the users of these artefacts in society are also missing. Probably in the near future, new trends of artefacts studies will also reach the research of leather materials. However, it is clear that wider themes cannot be solved if the basic research is not done first.

3. PREHISTORIC TRADITION

In order to understand medieval sheaths and scabbards it is also necessary to take a look at the prehistoric tradition. In the following, there are viewed the Iron Age sheaths and scabbards essential from this study's point of view, which are mainly those containing organic remains. The review is based on the research literature. The finds in the museum collections have not been surveyed.

3.1 IRON AGE KNIFE SHEATHS

3.1.1 WIDE, BRONZE-PLATED SHEATHS

Typical of the cultural sphere of Western Finland in the Late Viking Age and the Crusade Period were the wide and flat, bronze-plated knife sheaths. These are published from, for example, Köyliö, Köyliönsaari, Cemetery C and from the cemeteries of Eura.⁷³

A detailed analysis of a sheath of this type has been made by Jaana Riikonen on the basis of the find from Kaarina, Kirkkomäki cemetery (grave 1/1950).⁷⁴ According to Riikonen, the sheath had been made of two pieces of fur. The grain side (fur side) was upwards both on a piece under the bronze-plate and on a piece under the knife. The pieces were stitched with whip stitch. The material of the thread was linen, spun in S-twist. The leather material was possibly seal. It is known that sheaths of this type could be lined with birch bark,⁷⁵ but no signs of birch bark lining were found in this case.⁷⁶

The sheath from grave 56 in Eura, Luistari, was also made of two pieces of fur. The piece under the knife and the piece under the bronze-plate had fur-side upwards like in the Kirkkomäki sheath. Like the sheath from Kirkkomäki, neither had this sheath a birch bark lining, even if some other sheaths of this type from Luistari had.⁷⁷

The decoration of the sheaths of this type is usually formed of beaten hemispherical bulges

and groups of plaited lines.⁷⁸ According to Valonen, the plaited motif could derive from 'basketry' decoration of the sheaths made by plaiting birch bark and bast.⁷⁹ Lehtosalo-Hilander has proposed that the decoration could have been obtained from leather ornamentation.⁸⁰

Kivikoski and Cleve date the appearing of these sheaths around the year A.D. 1000.⁸¹ According to the coin datings by Pekka Sarvas, some of these sheaths could be as early as from the middle of the 10th century.⁸² The type is frequent even in the Crusade Period.⁸³ In Novgorod bronze-plated sheaths occur even in the contexts of the latter half of the 13th century.⁸⁴ The occurrence this late in the Novgorod town material could refer to the possibility that in the same way in Finland the use of these sheaths continued longer than seems on the basis of the grave finds. The lack of these late sheaths in Finland could be apparent and caused by the lack of late furnished graves, and on the other hand the lack of the town materials of the 13th century.

3.1.2 SHEATHS OF EAST FINNISH TYPE

Examples of sheaths typical of Eastern Finland in the Crusade Period come, for example, from the cemeteries of Tuukkala in Mikkeli.⁸⁵ From the ceded Karelia, there are examples from the cemeteries of Suotniemi in Käkisalmi, Kekomäki in Kaukola, Lapinlahti in Sakkola and Hovi, Kalmistomäki in Räisälä. In addition to the mount or mounts, covering the blade and the tip, these sheaths also have horizontal mounts, the number of which varies from one to seven. The metal parts are usually decorated with engraving, open-work or beating. The leather could be decorated too. The method of the decoration of the leather has been stitching different motifs with a thin copper thread.⁸⁶ Sheaths with metal mounts occur mainly in women's graves. Schwindt mentions that the sheaths from men's graves are usually of leather without the metal mounts. There are some exceptions to this, however.⁸⁷

Sheaths of East Finnish type also occur in Western Finland. From Eura, Luistari, there derive sheaths, the construction of which, according to Lehtosalo-Hilander, resembles the sheath from Tuukkala.⁸⁸ The decoration of the sheath leather by stitching with copper thread occurs in Western Finland too, for example, in a cemetery of Raisio, Ihala.⁸⁹ On the other hand, sheaths of East Finnish type occur in Novgorod, where they come from the contexts of the 13th and the 14th century.⁹⁰

3.1.3 SHEATHS FROM MEN'S GRAVES

There is very little evidence of the sheaths carried by men. From a man's grave in Köyliö, Köyliönsaari, Cemetery C, come remains of a rectangular leather sheath. The leather was covered with a layer of textile (wool). The edges of the sheath were bordered with ferrules of bronze on one long side and on the horizontal tip of the sheath. On both sides there were also bronze ferrules of a leaf and lion (or leopard) motifs.⁹¹ It can be assumed that this sheath has been of exceptionally high quality because there was a knife inside with silver ferrules with plant decoration and niello inlays. The knife and the sheath and their technical details have been further discussed by Tomanterä.⁹² Cleve dates the find with a parallel from Masku, Humikkala (here was a coin of Basileios II and Konstantin VIII, A.D. 976-1025) to the middle of the 11th century or to the beginning of the Crusade Period.⁹³

There are some examples of the sheaths of seaxes from the Viking Age, for example, from the cemeteries of Köyliö, Köyliönsaari and Eura, Yli-Nuoranne. These sheaths were of leather with bronze mounts covering the blade side and the tip and also transverse mounts around the sheath. Both Cleve and Lehtosalo-Hilander refer to the Scandinavian examples in this context.⁹⁴ From Eura, Pappilanmäki, comes a sheath of a seax, which was made of leather and wood.⁹⁵ This is from the same grave as the Pappilanmäki sword. The grave is dated to the end of the 7th century (see Chapter 3.2.1).

3.1.4 THE QUESTION ABOUT THE SUSPENSION OF THE SHEATHS

Kustaa Vilkuna has claimed that all prehistoric sheaths were carried in a horizontal position and

the change to the upright position dates to the time of the Hanseatic league.⁹⁶ Earlier, Pälsi had proposed that the change to the upright position could have happened in the 13th century. He based his view on the Karelian sheaths of the Crusade Period. According to him, the upright position came with the sheaths with Romanesque decoration, and because these sheaths came from women's graves, those who introduced this new fashion were women.⁹⁷

Lehtosalo-Hilander has analysed the positions of the knives in the graves of Luistari and made assumptions of the carrying positions of knives based to this analysis. According to her, there were two ways of joining the knives to the belts, transversely on the one hand and upright on the other. In Luistari, there were no instances where the knife was hung from the breast chains. The new way of joining the knife to the belt vertically instead of horizontally came into use in Luistari at the beginning of the 10th century. It is interesting that while men seem to have carried knives both vertically and horizontally, in women's graves the transverse position prevails.⁹⁸ In addition to the Eura material from the Viking Age, Lehtosalo-Hilander presents a sheath from Raisio, Ihala, as an example of the Crusade Period sheath of Western Finland carried in an upright position.⁹⁹

In Eastern Finland, women carried the knife hanging from their breast chains or shoulder brooches.¹⁰⁰ Lehtosalo-Hilander has suggested that the upright position would have been the most useful one for these sheaths too.¹⁰¹

3.2 IRON AGE SCABBARDS

In the Nordic countries, the scabbards were usually of wood, which could be lined with leather, fur or textile and covered with textile or leather band. The most frequent metal parts of scabbards from archaeological contexts are chapes. Also edge-mountings and mouth-bands occur.

3.2.1 SCABBARDS OF THE MIDDLE IRON AGE

Before the Merovingian Period (A.D. 550/600-800) only the metal components of swords and scabbards have been preserved, the cremation being the prevailing burial type. The earliest remains of organic scabbard components are

from the late 6th century, when the first inhumation cemeteries of the Iron Age appear in SW Finland, in Eura – Köyliö (Lake Pyhäjärvi) region.¹⁰² Helmer Salmo has presented that the scabbards from the Merovingian Period in Finland were mostly made of wood. He assumes that scabbards were also in other aspects similar to those in Scandinavia and Central Europe.

In this context, he refers to the possibility of the leather/skin or textile coverings and fell linings. Salmo bases his view on the European literary sources, on the finds from the Vendel cemetery in Uppland, Sweden, and on the finds from the cemeteries of the Köyliösaari in Köyliö.¹⁰³ In two cemeteries, excavated and named Cemetery A and Cemetery B by Nils Cleve, there are burials from the Merovingian period.¹⁰⁴ In seven burials, remains of wooden scabbards were preserved.¹⁰⁵

From Eura, there are remains of organic scabbard components from the Merovingian Period. From the cemetery of Käräjämäki, remains of scabbard were found from an inhumation burial dated to the latter half of the 6th century.¹⁰⁶ According to the excavator, Pirkko-Liisa Lehtosalo-Hilander, the scabbard seemed to have been made of two wooden plates, possibly with a leather/skin strap wrapped obliquely round the plates.¹⁰⁷

A ring-hilted sword dated to the end of the 7th century was found from an inhumation burial from Pappilanmäki in Eura.¹⁰⁸ The sword was inside its scabbard, which is considered to be the most complete prehistoric scabbard in Finland. It is made of wood and it has bronze mountings. No signs of leather/skin or textile were found in association with the scabbard. According to Salmo, the scabbard was not even originally covered with organic material. That is because organic remains should have been preserved in association with bronze mountings. Also the carved decorations noticed on the front face of the scabbard wood would have been covered.

No remains of leather/skin or textile lining were found either. However, leather was preserved in contact with the bronze ferrules of a belt from the same burial.¹⁰⁹ Salmo's assumption seems to hold true; leather should have been preserved if there was any with the scabbard. However, if the scabbard had been covered with very thin leather or untanned skin, the preservation could have been worse. Esther Cameron has proposed that the poor preservation of some

Anglo-Saxon scabbard leathers could be due to the use of oil-tanned, alum-tawed or untanned skins. According to her, vegetable-tanning was not adopted in England until the 7th century.¹¹⁰ Thin skins could be applied even to the scabbard plates decorated with carvings.

Good examples of the scabbards composed of two wooden plates decorated with carvings and covered with thin leather/skin are from Nydam, Denmark, dated to A.D. 450-500,¹¹¹ and from the Valsgårde cemetery, Sweden from the Vendel Period, the swords resembling the sword from Eura, Pappilanmäki.¹¹² Thus, also Salmo's argument for the non-existence of leather or skin cover on the Pappilanmäki scabbard because of the decoration on wood can be questioned.

3.2.2 SCABBARDS OF THE LATE IRON AGE

From the late Iron Age, there is more evidence of the composition of scabbards. From Köyliösaari, Köyliö, Cemetery C, organic scabbard fragments were found with five swords, dated to the Viking Period (A.D. 800 – 1025) and Crusade Period (A.D. 1025-1150/1200). All five scabbards were made of wood and four of them were covered with leather/skin. In four cases the scabbards were also lined with fur.¹¹³ Three swords from Cemetery C have been conserved and published by Leena Tomanterä. Two of these scabbards contained organic remains. According to Tomanterä, on the first one, fur with hair against the sword blade was noticed. On top of the fur, there was wood and leather/skin.¹¹⁴

Evidence of the use of wooden scabbard plates in the 10th century comes from the burial mounds of Långängsbacken in Kastelholm, Sund, the Åland Islands. From the mound no. 78 with a cremation burial, a chape with two wooden plates inside was found. According to Kivikoski, the chape was a burial furnishing, but as it was unburned, it was probably not included in the funeral pyre.¹¹⁵

From the burials of Humikkala in Masku, a Crusade Period inhumation cemetery, there were remains of two wooden scabbards covered with leather/skin.¹¹⁶ The scabbards were made of wood and covered with leather/skin and fitted with a chape of bronze. According to the excavator Sakari Pälsi, close to the scabbard from grave 7, strap dividers with strap fasteners and leather strap remains were found. Pälsi assumes that these belonged to the scabbard suspension

system even if there were no fastenings for suspension attached to the scabbard.¹¹⁷ A chape from the Crusade Period with wood from a scabbard comes also from Halikko, Rikala.¹¹⁸

There are examples of scabbards from the ceded Karelia too. According to Theodor Schwindt, scabbards of the Crusade Period were made of wood and leather/skin with wood inside and leather outside.¹¹⁹ Examples of these are from the inhumation cemetery of Koverila, Kekomäki in Kaukola.¹²⁰

3.3 DISCUSSION ON THE PREHISTORIC TRADITION

Prehistoric sheaths have mainly been found from women's graves. Much worse are known the sheaths carried by men. It is not probable that sheaths were not put to men's graves. Most probably these sheaths were without metal mounts. Sheaths of leather without metal have not been preserved without the preservative properties of the copper alloys. So far, the details of the plain leather sheaths remain obscure, as Lehtosalo-Hilander has stated of the sheaths from Eura, Luistari.¹²¹

There are no examples of sheaths outside the graves. The everyday sheaths carried along were probably simpler versions of those festive ones of decorated leather and metal parts put in graves. An interesting observation is that the sheaths of seaxes of leather were at least sometimes lined with wood. In this respect they relate more to the sword scabbards than knife sheaths.

In Finland, scabbards, at least from the Middle Iron Age until the end of the Prehistoric Period were manufactured of wooden plates, which could be covered with leather or skin, sometimes also with textile. The lining of scabbards with fur seems to have been in use. The high frequency

of wooden scabbards without a cover of organic material can be questioned. The absence of the cover could be caused by the poor preservation of leather and probably even poorer preservation of untanned (alum-tawed or oil-tanned) skins. As was seen from the examples from Scandinavia, the skin covering was usual even in scabbards with carved decoration on wooden plates. A detailed analysis of the composition of scabbards or, for example, of the frequency of the organic cover materials does not seem to be possible in the light of the present-day finds, few in number, until better preserved new finds will be discovered.

A problem connected to the scabbard materials and their preservation is: was vegetable-tanning a medieval import in Finland? If it was not, when was it introduced? Cameron has pointed to the almost impossible differentiating between tanned and untanned skins after the changes through burial and mineralization.¹²² The situation is probably the same with the Finnish scabbard material. However, it should not be impossible to make chemical tests on better preserved leathers/skins. These could be, for example, some larger pieces of footwear and maybe also some knife sheaths. From these, conclusions of the scabbard leathers/skins could also be made.

The possible use of alum-tawing is an interesting question. To my knowledge, in Finland, the method is not known from literary sources of the Middle Ages or early Modern Period. On the other hand, from Birka, Sweden, there come pouches from the Viking Age, which according to the chemical tests have been alum-tawed.¹²³ If these pouches were not imported (which is possible, especially if one connects the purses to coins, certainly imported) they prove that the tradition of alum-tawing in Scandinavia does not go back only to the Middle Ages but even to the Prehistoric Period.

4. RESEARCH MATERIAL AND THE METHOD OF RECORDING IT

4.1. THE ASSEMBLAGE OF THE ÅBO AKADEMI MAIN BUILDING SITE EXCAVATION

The find places of the research material are presented in Fig. 1.

The corpus of the material of this thesis comes from the Åbo Akademi main building site excavation, carried out in 1998. Because of this, the assemblage and what it represents, is emphasized in this study. I have grouped different aspects of the representation of the leather artefacts in the following way.

SPATIAL REPRESENTATION

- mostly the discarded objects represent the whole town population with emphasis on the people who lived or had activities in the area or its vicinity (Mätäjärvi quarter and Cathedral quarter, Fi. *Mätäjärven kortteli, Kirkkokortteli*).
- situated on the northern edge of the Mätäjärvi quarter next to the Cathedral quarter, the area most probably represents activities of both quarters.

CHRONOLOGICAL REPRESENTATION

- the leather assemblage represents the time-span 'latter half of the 14th century – first half of the 16th century' with emphasis on the end of the 14th century – the first half of the 15th century.
- the first half of the 14th century (and the end of the 13th century) are not represented in the material.

EXCAVATION AND ITS REPRESENTATION

- one large excavation area (1350 m²) with unmixed cultural layers in the area of ca. 1000 m²; excavation reached the sterile layers; thickness of the medieval organic layers ca. 2 meters.
- the site was excavated with the stratigraphic method and all the soil was sifted or excavated with trowels; however, the final stages of the excavation were in many ways problematic.¹²⁴
- the cultural layers turned out to be much thicker than expected. When the time reserved for the excavation

was running out, a change in the excavation method was made. The last parts (ca. one meter) of the 14th century cultural layers were excavated by machines.

- the soil was transferred to the storage area, where it was sifted next summer.
- in the mechanical excavation the find contexts were technically divided, large areas.
- the documentation of the structures was not possible to do in detail.
- good possibilities for the accurate datings
- the relative-chronological matrix and the relative dating has been made by Liisa Seppänen.¹²⁵
- many dendrochronological datings of the wooden structures.

PRESERVATION OF THE MATERIAL

- organic material was well preserved in moist and anoxic layers; when the amount of the organic material diminishes in the younger layers, it is most probably caused by the changes in the find environment.

NATURE OF THE LEATHER MATERIAL

- the leather assemblage is very large and various artefact groups are well represented in the material, most probably also sheaths, scabbards and grip coverings.

As a conclusion, it can be said, that the leather artefact material of the Åbo Akademi main building site excavation represents well the discarded artefacts of the people who lived or had other activities in the area or near vicinity in the latter half of the 14th century – 15th century.

4.2 OTHER MATERIALS FROM TURKU

Other materials from excavations, included in this study, are the finds from Vähä-Hämeenkatu 13b excavation (1975, 1982), Uudenmaankatu 6 excavation (1986-1988), Old Great Market Place excavation (Fi. *Vanha Suurtori* 1986-1987, 1989), Aboa Vetusta excavation (1992-1995) and the Library site excavation (2003). In addition to

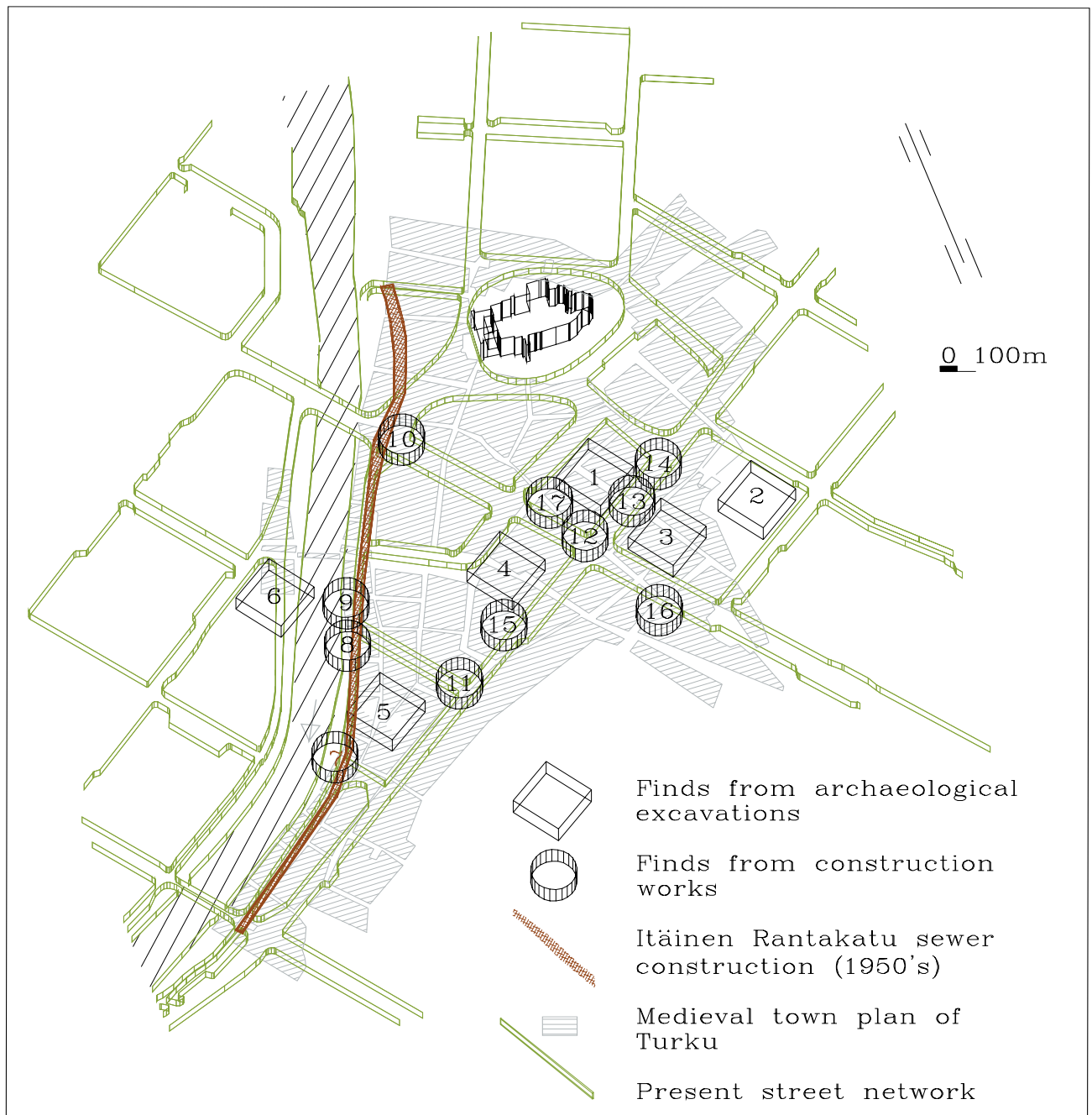


Fig. 1. The find places of the research material. Turku Castle is located outside the map, on the mouth of the River Aurajoki, three kilometres downstream.

1 - Åbo Akademi main building site excavation 2 - Vähä-Hämeenkatu 13b excavation 3 - Uudenmaankatu 6 excavation 4 - Old Great Market Place excavation 5 - Aboa Vetus museum excavation 6 - Library site excavation 7, 8, 9, 10 - Itäinen Rantakatu sewer construction 11 - Nunnakatu sewer construction 12 - Uudenmaankatu – Hämeenkatu sewer construction 13, 14 - Hämeenkatu sewer construction 15 - Hämeenkatu 17 groundwork 16 - Uudenmaankatu 5 groundwork 17 - Åbo Akademi main building groundwork.

Map by Kari Uotila and Jouko Pukkila

the archaeological excavations, also sheath and scabbard material from Itäinen Rantakatu sewer construction and other construction works in the town area are included. In addition to the material of the town area, I have included in this study also the material from the excavations at the yard of the outer bailey of the Turku Castle.¹²⁶

4.2.1 VÄHÄ-HÄMEENKATU 13B EXCAVATION

The excavations were carried out in 1975 and 1982. The stratigraphical phases and part of the find materials have been published.¹²⁷ In the following I will give a short summary of the phases discerned.

PHASE 1

- ca. A.D. 500 – the middle of the 15th century: layers of slime; draining operations of lake Mätäjärvi were taken from the 1260's onwards.
- surroundings are agrarian animal-husbandry and agriculture areas.
- from the 15th century onwards the nearby areas were being built, but not in the immediate vicinity of the excavation area.

PHASE 2

- the middle of the 15th century – 1520/30's.
- the shore of lake Mätäjärvi withdraws because of the drainage and silting up.
- a large amount of leather refers to the shoemaking and leather working activities.

SPATIAL REPRESENTATION

- mostly the discarded objects represent the whole town population with emphasis on the people who lived or had activities in the area or its vicinity (Mätäjärvi quarter).

CHRONOLOGICAL REPRESENTATION

- the leather assemblage represents the time-span 'the latter half of the 15th century – the first half of the 16th century'.
- the 14th century and the first half of the 15th century are not represented in the material.

EXCAVATION AND ITS REPRESENTATION

- four small excavation areas.
- systematic excavation method; the area was excavated with stratigraphic method and all the soil was sifted or excavated with trowels.
- no dendrochronological datings of the structures, datings are based on the studies of the find materials, especially ceramics.

PRESERVATION OF THE MATERIAL

- the organic material was well preserved in the moist and anoxic layers; when the amount of the organic material diminishes in the younger layers, it is most probably caused by the changes in the find environment.

NATURE OF THE LEATHER MATERIAL

- the leather assemblage is large, however, only one fragment of a knife sheath.
- an analysis of the shoes and leather offcuts has been made by Tapani Tuovinen.¹²⁸

4.2.2 UUDENMAANKATU 6 EXCAVATION

The excavation area is situated in the medieval quarter of Mätäjärvi, between Karjakatu and lake Mätäjärvi, on the edge of a medieval town area. The site was excavated in 1986-1988.¹²⁹ The following phases can be discerned.¹³⁰

PHASE 1

- begins at the end of the 14th century or at the beginning of the 15th century (one dendrochronological dating of A.D. 1384/1429). On the basis of the dendrochronological dating, the phase ends at the turn of the 1430's and 1440's or before the middle of the 1440's when the two wooden buildings of the next phase were constructed.

PHASE 2

- begins at the turn of the 1430's and 1440's – ca. A.D. 1445. A very short phase because of the fire which destroyed at least one of the buildings in its construction stage. At the end of the phase the area was covered with soil. The next phases are Post-Medieval.

SPATIAL REPRESENTATION

- situating on the Mätäjärvi quarter at the edge of the town area, between Karjakatu and Lake Mätäjärvi, the area most probably represents activities of the Mätäjärvi quarter.

CHRONOLOGICAL REPRESENTATION

- the leather assemblage represents the time-span ca. A.D. 1400 – the middle of the 15th century.
- the 14th century and the latter half of the 15th century (beginning of the 16th century) are not represented in the material.

EXCAVATION AND ITS REPRESENTATION

- two small excavation areas.
- excavation methods vary; one of the areas is excavated stratigraphically, the other as mechanical layers; part of the excavation did not reach sterile layers.
- one dendrochronological dating.

PRESERVATION OF THE MATERIAL

- the organic material was well preserved in the moist and anoxic layers; when the amount of the organic material diminishes in the younger layers, it is most probably caused by the changes in the find environment.

NATURE OF THE LEATHER MATERIAL

- the leather assemblage is large and the various artefact groups are represented in the material. Three knife sheaths, one of which is Post-Medieval.
- the analysis of the leather material by Satu Mikko-nen-Hirvonen in her M.A. thesis.¹³¹

4.2.3 OLD GREAT MARKET PLACE EXCAVATION

The sheaths, scabbards and grip coverings (17 artefacts) from the Old Great Market Place excavation all come from the 'Hjelt' site (situated in the yard of the present day Hjelt house). The area was excavated in 1989.¹³² Structures and the dating of the phases are the following.

PHASE 1

- the latter half of the 13th century.
- vertical piles.

PHASE 2

- the first quarter of the 14th century.
- a timber frame (probably for a rubbish-heap) and vertical piles.

PHASE 3

- second quarter of the 14th century.
- a fence made of planks and a timber structure of unknown function.

PHASE 4

- the 1350's – the beginning of the 15th century.
- remains of a wooden building, a wooden alley or yard covering, wooden layers of unknown function.

SPATIAL REPRESENTATION

- mostly the discarded objects represent the whole town population with emphasis on the people who lived or had activities in the centre of the town or its vicinity (primarily the Convent quarter, Fi. *Luostarikortteli*, and Cathedral quarter), secondarily the other quarters).

CHRONOLOGICAL REPRESENTATION

- the leather assemblage represents the time-span 'the latter half of the 13th century – the first half of the 16th century' with an emphasis of the sheath and scabbard material on the first half of the 14th century – the first half of the 15th century.
- the latter half of the 15th century is not represented in the leather material because of the disturbances in the layers of the late Middle Ages (the latter half of the 15th century the first half of the 16th century).

EXCAVATION AND ITS REPRESENTATION

- many small excavation areas; thickness of cultural layers from 3 to over 4 m; excavated to the sterile layers.
- systematic excavation method; the area was excavated with stratigraphic method and all the soil was sifted.
- good possibilities for accurate dating; the stratigraphical excavation units and dendrochronological datings of the structures; the phasing is done by Aki Pihlman.¹³³

PRESERVATION OF THE MATERIAL

- organic material was well preserved in moist and anoxic layers; when the amount of the organic material diminishes in the younger layers, it is most probably caused by changes in the find environment.

NATURE OF THE LEATHER MATERIAL

- leather material, especially sheaths and scabbards, is concentrated to the Hjelt area.
- various leather artefact groups are well represented in the find material.

4.2.4 ABOA VETUS MUSEUM EXCAVATION (THE RETTIG PLOT)

SPATIAL REPRESENTATION

- the area is situated on a medieval Convent quarter south of the Cathedral quarter on the strand of the river Aurajoki.
- Aboa Vetus excavations revealed part of the streets 'Luostarin jokikatu' and 'Luostarin välikatu' and the cellars of the houses.¹³⁴
- mostly the discarded objects represent the whole town population with emphasis on the people who lived or had activities in the centre of the town or its vicinity (primarily the Convent quarter, secondarily the Cathedral quarter).

CHRONOLOGICAL REPRESENTATION

- datable leather material is from the first half of the 14th century; some of it could be even from the end of the 13th century.
- Most of the leather material can be dated as 'medieval'; mostly this material seems to be from the 14th century on the basis of the find types.

EXCAVATION AND ITS REPRESENTATION

- many small excavation areas; part of the area was excavated as early as the beginning of the 20th century by Juhani Rinne.

- modern excavations started in 1992 and continued sporadically till 1995; the leather material of this study comes from these excavations.
- methods of the excavations range from meticulous work to the digging with machines.
- one dendrochronological dating of a structure; the find material under this structure can be dated to the first half of the 14th century; it could even be from the end of the 13th century.

PRESERVATION OF THE MATERIAL

- leather material is very fragmentary and it has been preserved only in a small excavation area of organic content. Mostly the medieval material comes from layers of mineral content where the organic material was not preserved.¹³⁵

NATURE OF THE LEATHER MATERIAL

- the leather material comes from one small excavation area of clay and organic content containing wood chips.
- despite the fragmentary nature of the material, various leather artefact groups are represented in the material.
- leather material has been analysed by Sanna Jokela in her M.A. thesis.¹³⁶

4.2.5 THE LIBRARY SITE EXCAVATION

SPATIAL REPRESENTATION

- the area is situated on a medieval Aninkainen quarter, Fi. *Aninkaisten kortteli* on the western bank of the river Aurajoki.
- mostly the discarded objects represent the whole town population with emphasis on the people who lived or had activities in the area or its vicinity (Aninkainen quarter).

CHRONOLOGICAL REPRESENTATION

- the leather assemblage represents the earliest phases of the settlement of the area (14th and 15th centuries).

EXCAVATION AND ITS REPRESENTATION

- the area was excavated in 2003
- an excavation area of 299 m² with cultural layers of 2.0 – 3.4 meters deep.
- systematic excavation method; the area was excavated with stratigraphic method and all the soil was sifted or excavated with trowels (Tuovinen & Työryhmä 2004).

- datings are based on dendrochronology, stratigraphy and the find materials, mainly on the ceramics and glass finds.

PRESERVATION OF THE MATERIAL

- the organic material was preserved in the lowest, moist and anoxic layers with clayey and partly organic soil.

NATURE OF THE LEATHER MATERIAL

- the leather assemblage is small and fragmentary, consisting mostly of shoe parts, off-cuts and a knife sheath preserved as a whole.

4.2.6 ITÄINEN RANTAKATU SEWER CONSTRUCTION

SPATIAL REPRESENTATION

- trenches followed the eastern riverside of the River Aurajoki from the south side of Aura Bridge to the Old Great Market Place and further to Cathedral Park. Thus, the trench goes through the Convent quarter and the Cathedral quarter.¹³⁷ Sheaths and scabbards are found from the Convent quarter from the lower end of Nunnakatu and the lower end of the Rettig slope. In addition, one sheath has been found from the extension of the trench on the front of Brahe's Park.
- mostly the discarded objects represent the whole town population with emphasis on the people who had lived or had activities in the centre of the town or its vicinity, the Convent quarter and the Cathedral quarter.

CHRONOLOGICAL REPRESENTATION

- datable leather material is from the 14th and 15th centuries; precise dating is impossible in most cases because of the inaccuracies of the find contexts.

EXCAVATION AND ITS REPRESENTATION

- sporadic supervision of the digging of the trenches.
- finds were collected by the workers; the principle was that they were paid for the finds.
- no excavation report of this survey exists; only maps, find catalogue and field notes of some trenches.
- a summary of the observations and examples of different find groups are published by Valonen.¹³⁸
- analysis of the find contexts and their datings based on ceramics is done by Aki Pihlman.¹³⁹

NATURE OF THE LEATHER MATERIAL

- the leather material is large and various find groups are presented; the problem is the difficult dating.

4.2.7 OTHER CONSTRUCTION WORKS IN THE TOWN AREA

The find places of the sheaths from other contexts than excavations are presented in the following in brief. Most of the sheaths and scabbards not from excavations come from the surveys of the sewer constructions.

From the sewer construction extending from the intersection of Nunnakatu and Itäinen rantakatu to Hämeenkatu in 1963 comes one sheath. The trench did not reach sterile layers. From the trench comes medieval ceramics.¹⁴⁰ From the sewer construction between the Old Great Market Place and the intersection of Uudenmaankatu and Hämeenkatu in 1982 comes one knife or dagger sheath. The trench extended in places to the sterile layers. From the trench comes medieval ceramics.¹⁴¹ From the sewer construction extending from the crossing of Hämeenkatu and Uudenmaankatu to Kerttulinkatu in 1983 come two knife sheaths. The trench extends to the sterile layers in many places. From the trench comes medieval ceramics.¹⁴²

Other types of constructions have been the groundworks for new buildings or renewing the groundings. From Hämeenkatu 17 (1901) comes five sheaths, from Uudenmaankatu 5a (1971) one sheath and from the pile work of the Åbo Akademi main building (1972-1973) one sheath.¹⁴³

4.2.8 THE YARD OF THE OUTER BAILEY OF THE TURKU CASTLE

From the excavations in the yard of the outer bailey of the Turku Castle (1978-1985) come five sheaths. The excavation area was large and in most places the excavation reached the sterile layers. The area situated on the north side of the yard and it was excavated in technical layers. Because the excavation area is situated in a slope, in one technical layer, there can be finds from several cultural layers, that is, material from different contexts with different datings.¹⁴⁴

In addition to these problems, the find contexts are problematic themselves. Three sheaths come from a filling layer formed in the middle of the 15th century containing older material. One sheath comes either from this filling layer or from the layer above it (the youngest medieval layer). One sheath comes from the oldest phase, which can be dated quite loosely from the 14th century

to the middle of the 15th century. Thus, despite the interesting and important find material, the contexts and the datings remain problematic and weaken the source value of the material.

4.3 METHOD OF RECORDING THE RE-SEARCH MATERIAL

4.3.1 MEASUREMENT

The artefacts have been measured after the conservation treatment. Because of this, some source critical factors concerning the sizes of the objects must be taken into account. The leather can be distorted during the long burial and it could also have shrunk since recovery, during and after the processes of conservation. Of these factors, only the shrinkage of the material of this study during the conservation can be estimated. During the conservation, depending of the conservation method, the items have usually more or less shrunk. However, the average shrinkage during the freeze-drying is estimated to be only about two per cent.¹⁴⁵

Because of the shrinkage, the measurements must be considered approximate in relation to the original sizes. Because there is also find material conserved with p.e.g., which probably has a different shrinkage effect than freeze drying, I have chosen to measure the artefacts without including the estimated shrinkage in measures in the catalogue (Appendix 4). Also, even if the shrinkage has more or less happened in absolute terms, it seems that usually the relative sizes of objects have been preserved intact.¹⁴⁶

Length is the measure from the tip of the sheath / scabbard to the mouth-end. Possible suspension devices extending beyond the mouth-end have not been included. The length of the grip coverings is measured in a similar way.

Length of the handle section / handle length is measured when the section stands out, for example, because of the moulding or the decoration.

Length of the blade section / blade length is measured when the section stands out, for example, because of the moulding or the decoration.

Width is the greatest measure between the edges of the sheath, scabbard or grip covering.

Thickness of leather is the average thickness of leather, used for manufacturing the item in question.

Stitch length is the average stitch length, that is, the average distance between the stitch holes.

4.3.2 TYPES OF STITCH HOLES AND SEAMS AND THEIR PLACING

Unlike sewing with cloth where the needle almost always goes from one side of the cloth to the other, in working with leather there are three types of holes that can be made, and from them five basic stitches or types of stitch holes can be formed.

The most basic level of stitching is the hole that goes through the leather. This is called a flesh/grain stitch. The hole goes in one side and comes out of the other. In the edge/flesh stitch the hole goes in the flesh side and comes out of the edge. In the edge/grain stitch the hole goes in the grain side and comes out of the edge. In the flesh/flesh stitch the hole goes in the flesh side and comes out of the same side. In the grain/grain stitch the hole goes in the grain side and comes out of the same side.

The seams can be defined according to the way the adjoining components meet each other. The following terms of types of seams are used in this work (Fig. 2).¹⁴⁷

Butted seam (Fi. *vastasauma*). A join made by butting together the edges of two sections of leather.

Closed seam (Fi. *umpisauma*). A join formed when two pieces of leather are stitched together face to face along the edge.¹⁴⁸

Lapped seam (Fi. *limisauma*). A seam where two pieces of leather are overlapped on top of each other.

The following placing of the seam has been noticed in sheaths and scabbards of the assemblage: Centre-back; Right side of back; Left side of back; Side.

4.3.3 STITCH TYPES

In some artefacts of this study, remains of thread were preserved in the stitch holes. In most cases the sewing threads had decomposed during the burial. What remains after the decay of the threads, are the leather parts with empty stitch holes and the impressions left on the leather by the threads and sometimes of the adjoining leather parts.

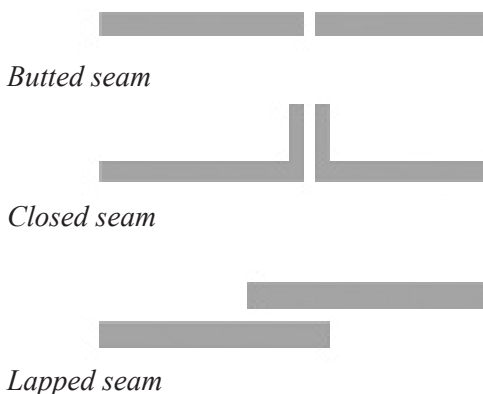


Fig. 2. The seam types of the research material.

The stitch types used can be judged from the stitch holes and from the impressions left by the threads. The interpretation of stitch holes and impression of threads is one of the basic methods while working with archaeological leather material, with footwear as well as with other artefacts of leather.¹⁴⁹ In the material of this thesis, there are three types of stitches noticed (Fig. 3).

Shoemaker's stitch/Saddler's stitch (Fi. *suutarin ommel/satulantekijän ommel*). Stitching with two threads passing each other through the same stitch holes in the leather. This stitch type can be recognized by the continuous impressions of thread from stitch to stitch and from stretched stitch holes, resembling the form of number eight.¹⁵¹ This stitch is called *stitch type 1* in the catalogue.¹⁵²

Running stitch (Fi. *suora-ommel*). Stitching with a single thread moving in and out. This stitch type can be recognized by the impressions of thread, which changes side in turns.¹⁵³ This stitch is called *stitch type 2* in the catalogue.

Whip stitch/Overcast stitch/Binding Stitch (Fi. *yliluonti-ommel*). Angled stitching with a single thread along the edge of a piece of leather. This stitch type can be recognized by the impressions of thread along the edge of leather.¹⁵⁴ This stitch is called *stitch type 3* in the catalogue.

Riveted seams are identified by the rivets or the shape of the rivet holes, the distance between the holes, the imprints of the rivets now missing and the absence of the imprints of the stitching thread. Thong seaming is identified by the large stitch holes and the usual imprints of type 2 stitches.

4.3.4 TYPE OF LEATHER

There are two basic methods of defining the animal species from leather on the basis of visual examination. The first one is based on the pattern of hair follicles on leather, different on each animal species. The other method is based on the examination of the relation of the thicknesses of different layers of skin.¹⁵⁵

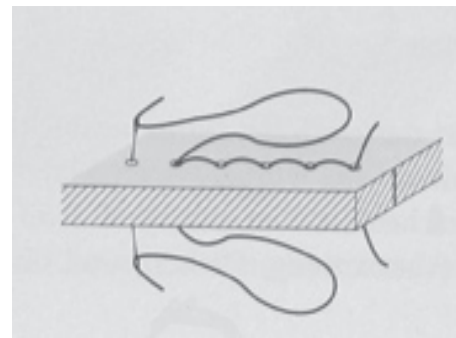
I have used the first method in this study.¹⁵⁶ For the definition to be possible, the surface of leather must be preserved. Usually the hair follicles are preserved on leather even if the hair is removed before the tanning process. However, the grain pattern may be destroyed because of the wearing or compressing of the surface of leather.

If hair is left on leather, definition of animal species can be made on the basis of the hair. On one case (sheath **138**) the definition of leather as sheep was done on the basis of hair, when the definition between sheep and goat leather was not unambiguous on the basis of the grain pattern.¹⁵⁷

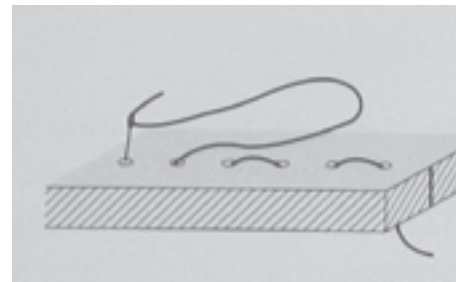
4.3.5 TYPE OF THREAD

On many sheaths from the Åbo Akademi excavation, there were remains of sewing threads preserved. From 37 sheaths, a thread sample could be taken. These samples were analysed by Heini Kirjavainen. In addition to the threads from the sheaths, in one possible scabbard fragment, there were also thread remains, which were analysed. In addition, the material of the possible lining from the Aboa Vetus museum scabbard and a comparative lining from a shoe sole from the Åbo Akademi excavation were analysed too.

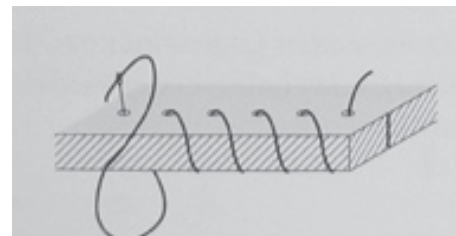
The purpose of the analyses was to identify the fibre materials used in threads. Also the spin direction of the thread was noticed in the cases it was possible. The analysis report is in the Appendix 2 of this study. The results are presented in Chapter 5.1.1.1. Further interpretations of the results are discussed in Chapter 8.3.



*Shoemaker's
stitch*



*Running
stitch*



Whip stitch

Fig. 3. The stitch types of the research material.¹⁵⁰

5. SHEATHS

5.1 MANUFACTURING TECHNIQUE

In the following chapters, the manufacturing technique of sheaths is presented and discussed. The different technical details of the sheaths are also presented in Appendix 1 in a table format.

5.1.1 MATERIALS OF SHEATHS

Sheaths could have been made of leather, metal, wood, bone or horn. The use of birch bark for the sheaths in the Iron Age or in the Middle Ages is questionable because of the lack of the archaeological finds.¹⁵⁸ Only sheaths of leather have been found from archaeological contexts in Turku.

The identification of the leather type has been possible in 152 out of 173 cases (88 per cent) of the research material (Fig. 4).¹⁵⁹ The prevailing leather type is calf.¹⁶⁰ It occurs in 141 cases (93 per cent). One sheath (70) is made of cattle leather or of mature calf on the basis of its 3 mm thickness. Four sheaths (3 per cent) are

made of sheep leather and three sheaths (2 per cent) of goat leather. Three sheaths (2 per cent) are defined either as sheep or goat. The using of sheep or goat leather seems clearly to be secondary in the material. No chronological change can be discerned on the basis of the present material. The use of calf leather prevails right from the first half of the 14th century onwards until the end of the Middle Ages.¹⁶¹

For what purposes was sheep or goat leather used? Is it possible to discern special purposes? It must be remembered that in the Middle Ages, and later, sheep or goat leathers were often treated with methods which are not water-repellent. These are, for example, the chamois leather of sheep or goat used traditionally for gloves. Both animal species were also used for making parchment and especially goat leather was used for bookbinding.¹⁶² Sheep skins oil or mineral-tanned and curried, but not vegetable-tanned, were traditionally used for pelts.¹⁶³ All these materials degrade rapidly in the soil and are usually not represented at all in archaeological materials of medieval towns.

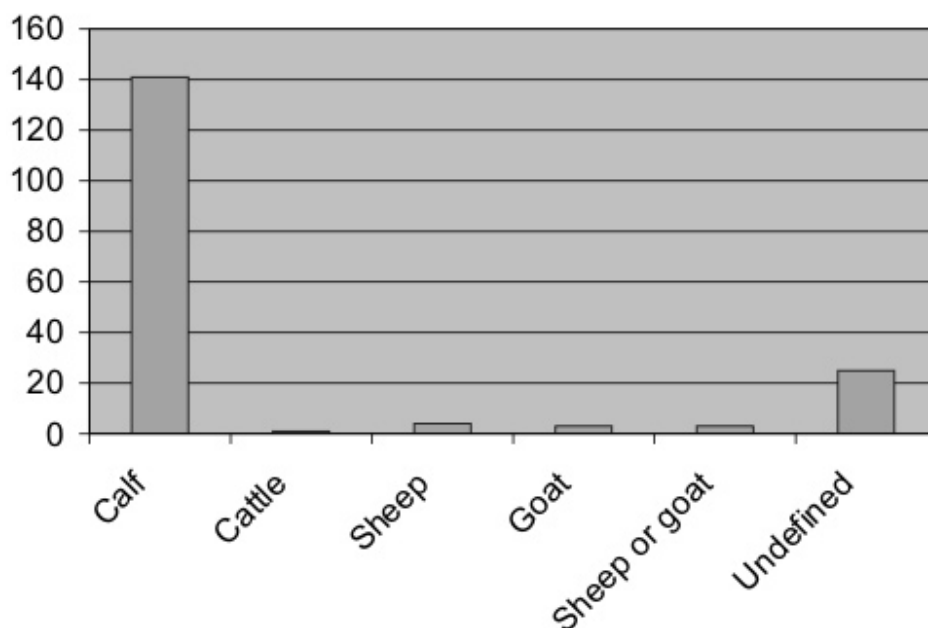
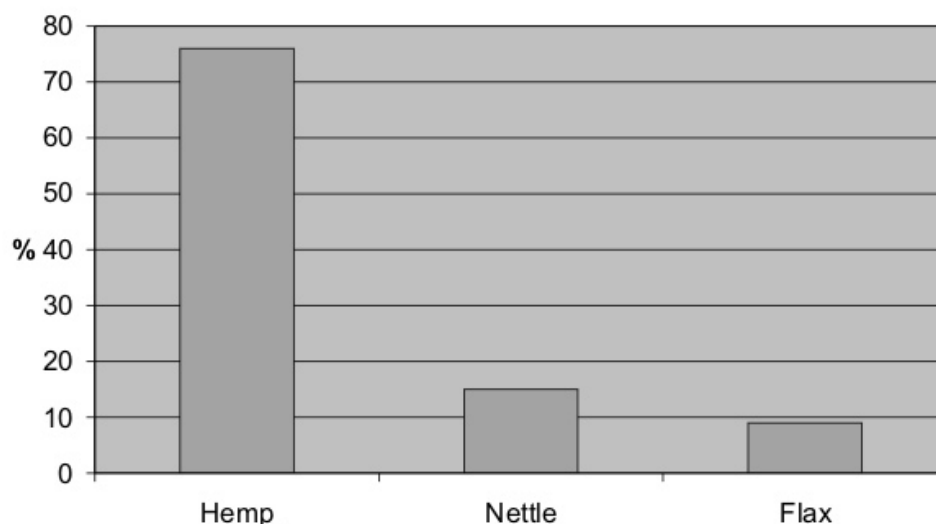


Fig. 4. The animal species of the sheaths (n=173).

Fig. 5. The percentage distribution of the different fibres of threads used in sewing the sheaths (n=34).



There seems to be an indication that also vegetable-tanned sheep or goat leathers had special uses. On the basis of the find material of this study there seems to be a slight correlation between these leathers and the unprofessionally manufactured sheaths and the sheaths for special knives or tools. On the basis of the Åbo Akademi material, sheep and goat leathers were also used for purses and bags, and in some degree, for the uppers of children's shoes. Because of the wet find contexts, it can be concluded that all the sheaths preserved are made of vegetable-tanned leathers. On some sheaths, there is still some hair preserved in places. The reason for the preservation of hair on tanned leathers is most probably the incomplete scraping of the hair from skin, that is, the hair has not been preserved on purpose.

The thickness of the leather of the sheaths varies from one millimetre to 3 millimetres, the average thickness being from 1.5 mm to 2.5 mm. The grain side always faces outwards, except in sheaths defined as additional sheaths.

5.1.1.1 MATERIALS OF THREADS

A thread sample was taken from 37 sheaths from the Åbo Akademi main building site excavation. In three cases the identification was not possible. The results are presented in Fig. 5.

Noteworthy is the predominance of hemp and secondly the nettle. Noteworthy is also the small percentage of flax. *The usual presumption of the use of flax in sewing threads does not hold true on the basis of the analysis of this research material.*

In four cases there were preserved pieces of thread, which were s-twisted single threads. According to Kirjavainen (Appendix 2) they are probably the preserved fragments of Z-ply threads because separate strands are not strong enough in seaming leather objects. In one case there was a single z-twisted piece of thread, probably from S-ply yarn. Two thread fragments, one S-ply and one Z-ply, have both intertwining threads preserved together.

5.1.2 COMPOSITION

The sheaths of this study have been made from one piece of leather, folded and stitched, riveted or seamed with a thong either on the back or on the side. The only exception to the one-piece construction is the sheath 44. It has been made of the main part and an additional piece on the upper end of the sheath. The additional piece has been attached to the main piece with butted seam and whip stitch. This seems to be an original construction. Some sheaths also have inner linings or additional sheaths. These are discussed in Chapters 5.1.2.2 (linings) and 5.5.5 (additional sheaths).

5.1.2.1 SEAMS AND STITCHES

SEAM AND STITCH HOLE TYPES

The seam type has been identified in 128 out of 130 sheaths (98 per cent) of the Åbo Akademi material (sheath caps are not included). In 122 out of 128 cases the seam is a closed seam with flesh/grain stitches (see Chapter 4.3.2 of the

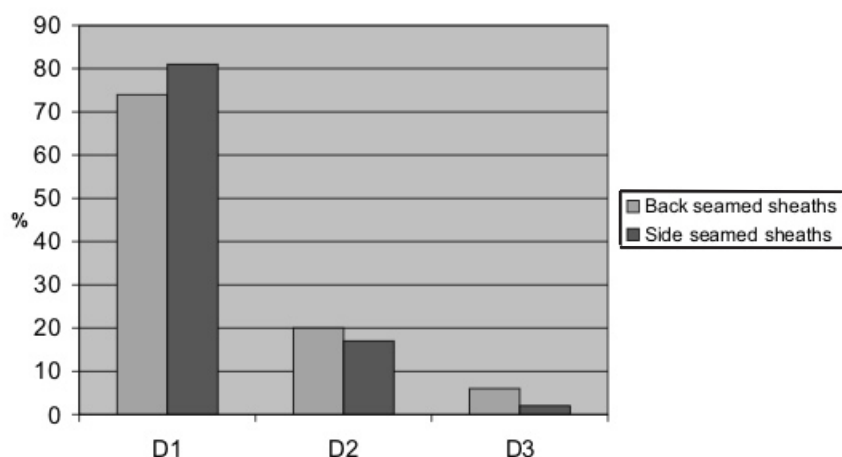


Fig. 6. The percentage distribution of the back seamed (n=68) and side seamed (n=48) sheaths of the Åbo Akademi excavations among different periods. D1 – latter half of the 14th century – first half of the 15th century; D2 – latter half of the 15th century – beginning of the 16th century; D3 – latter half of the 16th century.

definition of the seam and stitch hole types). Six sheaths have butted seams. The stitch hole types in butted seams vary. Sheaths **18** and **112** have edge/grain stitches with a shoemaker's stitch. Sheaths **84**, **26** and **96** have flesh/grain stitches with an atypical whip stitch. Sheath **106** has edge/flesh stitches because it has an exceptional inwards facing butted seam. Instead of closed or butted seam sheath **21** has a lapped seam.

The shape of the stitch holes can be used to interpret the blade type of the awl used. The stitch holes of the Turku material seem to be round or oval. For example, diamond shaped holes have not been noticed. However, the original form of the holes is in many cases difficult to interpret because the holes have been stretched by the threads especially because of the shoemaker's stitch used (see Chapter 4.3.3).

The seam type has been defined in 34 out of 35 sheaths from the other areas of Turku. The closed seam prevails (32 out of 34 sheaths). Sheaths **51** and **53** have butted seams. Sheath **51** has a 'normal' butted seam with edge/grain stitches while sheath **53** has an exceptional inwards facing butted seam with edge/grain stitches. However, the sheath function of these two artefacts is uncertain.

PLACING OF THE SEAMS

The placing of the seam is defined in 120 examples out of the 130 sheaths (sheath caps are not included) from the Åbo Akademi excavation. The seam is on the back in 70 cases (58 per cent) and on the side in 50 cases (42 per cent). In 39 cases of the back seamed sheaths the seam could be defined on centre-back and in 21 cases on the side of back.

There seems to be a slight emphasis of the side seamed sheaths to the early phases on the Åbo Akademi material (Fig. 6). Of the datable back seamed sheaths, 74 per cent can be dated to the period 'the latter half of the 14th century – the first half of the 15th century', while the ratio is 81 per cent with the side seamed sheaths. For the period 'the latter half of the 15th century – the first half of the 16th century' the ratio with the back seamed sheaths is 20 per cent and for the side seamed it is 17 per cent. For the period 'the latter half of the 16th century' the ratio is 6 per cent for the back seamed sheaths and 2 per cent for the side seamed sheaths.

Of the sheaths from the other areas definition has been possible on 34 sheaths out of 35 sheaths. Back seam occurs in 15 cases (44 per cent) and side seam in 19 cases (56 per cent). Thus, side seams are much more frequent than in the Åbo Akademi material. Of the back seamed sheaths, 13 (87 per cent) have a centre-back seam and 2 (13 per cent) a side of back seam.

I would like to see *the side seamed sheaths as the carriers of the tradition of the Early Middle Ages and beyond and slowly giving way to the back seamed sheaths during the Late Middle Ages*. The datable sheaths outside the Åbo Akademi excavation are rare, but, for example, the sheaths from the Aboa Vetus excavation, most probably from the 14th century, *all have side seams*.

STITCHED SEAMS

128 sheaths of the Åbo Akademi material have stitched seams and one sheath has a riveted seam. In addition to the rivets, this sheath has a thong seaming on the handle section. One sheath has

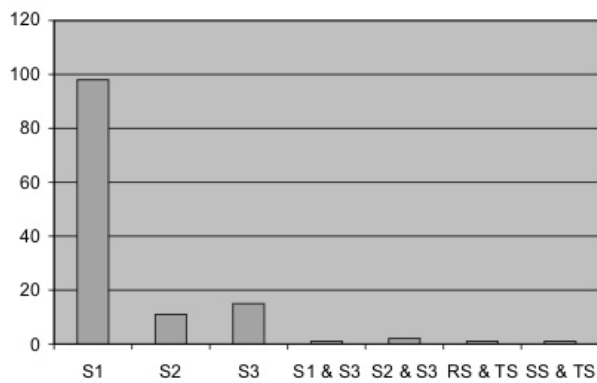


Fig. 7. The stitch types of the Åbo Akademi sheaths (n=129).

S1 – Shoemaker's stitch; S2 – Running stitch; S3 – Whip stitch; RS & TS – Riveted seam with thong seaming on the handle; SS & TS – Stitched seam with thong seaming on the handle.

a probable thong seaming on the handle section in addition to the stitching on the blade. In one case the definition has not been possible because of the lack of the seam. Stitched seams occur on both side seamed and back seamed sheaths.

It has been possible to define the stitch type in 127 out of 128 sheaths from the Åbo Akademi excavation (Fig. 7).

The prevailing stitch type is the type called the 'Shoemaker's stitch' or 'Saddler's stitch'. It occurs in 98 cases (77 per cent) out of 128 sheaths. The shoemaker's stitch is considered to be the strongest seam type. It is the most common type even in the modern day hand stitched leather objects.¹⁶⁴ *The high frequency of the shoemaker's stitch in the sheaths refers to the high-quality seaming and thus to the probable professionalism in the manufacturing of these sheaths.*

Based on the hypothesis that the stitch type and variation in stitch length reflects the functional quality of the sheaths, I have distinguished a group of unprofessionally manufactured sheaths (see Chapter 5.5.6).

Other stitch types found are 'Running stitch' and 'Whip-, Overcast- or Binding stitch'. Running stitch occurs in 11 cases and whip stitch in 15 cases. In two sheaths running stitch and whip stitch occur on the same sheath. Shoemaker's stitch and whip stitch occur together on one repaired sheath (see Chapter 5.1.3).

Of the other sheaths of Turku, 23 have a stitched seam and 9 sheaths a riveted seam. One sheath has been seamed with a leather thong. No definition has been possible in two cases.

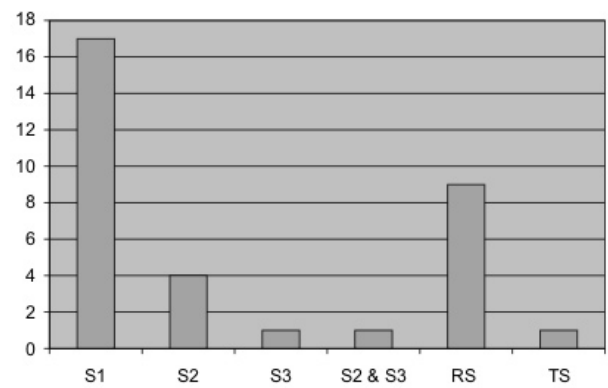


Fig. 8. The stitch types of the sheaths from other areas of Turku (n=33).

S1 – Shoemaker's stitch; S2 – Running stitch; S3 – Whip stitch; RS – Riveted seam; TS – Thong seaming.

It has been possible to define the stitch type in 24 cases (Fig. 8).

A shoemaker's stitch occurs in 17 cases, a running stitch in four cases and a whip stitch in one case. In one case, the running stitch and whip stitch occur together in one sheath. Nine sheaths have been riveted and one sheath has been seamed with a thong. Thus, also in this material, the use of a shoemaker's stitch prevails. It can be noticed that riveted seams are much more frequent than in the Åbo Akademi material.

RIVETED SEAMS

Riveted seams occur in ten sheaths of the research material (9, 10, 11, 12, 13, 14, 32, 124, 125, 221). All of these have side seams. Rivets are left in 9, 10, 125 and 221. Other sheaths with riveted seams are identified by the shape of the rivet holes, the distance between the holes (often quite long), the imprints of the rivets now missing and the missing of the imprints of the stitching thread. Sheaths 9, 10 and 221 are riveted on the handle section with round headed rivets of a diameter of 5 mm. The material of the rivets is most probably some sort of copper alloy. No metallurgical analyses have been made so far. In addition, there is a rivet of a shape of a flower with petals in the blade section of sheath 9. The material is most probably the same as on the handle rivets. Sheaths 9 and 221 also have traces of a longitudinal metal ferrule, originally covering the seam edge. Sheath 125 has only a base of one rivet left.

In the research material, rivets seem to be common in certain sheath types, ‘sheaths with excised decoration on the edge’ and ‘sheaths with rows of paired suspension slots on the handle’ (see Chapters 5.5.2 and 5.5.3). These are mostly dated to the 14th century. I would like to see the seaming with rivets as an early chronological phenomenon. Sheaths with rivets seem to be missing from the Åbo Akademi material.

The only exception is sheath **32**, which has rivet holes on the blade section and a thong seaming on the handle. The dating of this sheath could be later than the other riveted sheaths of the research material. By its context it can be dated to the period ‘the latter half of the 15th century – the beginning of the 16th century’. The other sheaths with rivets seem to have an emphasis on the 14th century. Thus, comparing the Åbo Akademi material to the material dated earlier, I see *the rivet seaming as an early phenomenon no longer common in Turku from the 15th century onwards*.

THONG SEAMING

Sheath **32** has eight, quite large oval holes on the seam side of the handle. These are most probably for the leather thong or textile braid not preserved. In addition to the seaming the sheath and being a decorative element, the thong or braid has probably continued as a suspension device of the sheath. Other decorative motifs on this sheath are the two rows of paired, lunate slits on the handle.

Sheath **98** has similar, but more carelessly punched decoration. The seaming of the handle has been torn, but originally it probably had a similar thong seaming as in sheath **32**. Sheath **81** has a side seam, large stitch holes and impressions of the ‘running stitch’, most probably from a leather thong, suitable for the robust appearance of the sheath. Also **74**, probably an unprofessionally manufactured sheath, has large holes suitable for seaming with a leather thong. Thus, there are two types of thong seaming. It has been used for *decorative seams* but, on the other hand, also for *coarse seaming*.

5.1.2.2 LININGS

In a sheath from the sewer construction between the Old Great Market Place and Uudenmaankatu (**52**), there was found a 1 mm thick lining of calf

leather inside the outer leather. The lining is seamed with a closed seam, centre-back with flesh/grain stitches and using the same stitch holes as the outer scabbard leather. The grain side of the lining faces outwards which is not typical of knife sheath linings and additional sheaths.¹⁶⁵ Maybe, in this case, the purpose of the inner leather part has been more to give additional support for the scabbard, ‘double thickness’, than to be an actual ‘lining’.

5.1.2.3 SHEATH FITTINGS

There are very few indications of the fittings of metal or other materials in the sheaths of the research material. There can be two reasons for that. Either the sheaths were mainly only of leather or the fittings had been removed before the object has been discarded. I think these both are true. If there had been metal fittings, there should be more imprints of these in the material as there is in some cases. On the other hand, it is natural that the metal parts were detached from sheaths before discarding them. The metal parts were valuable and could well be reused.

In sheath **125**, there is an imprint of a mouth band on the mouth-end of the sheath. This stands out as a darker area on the place of the ferrule. In sheath **9**, there are remnants of a metal ferrule on the blade section of a seam edge. The edge-reinforcers of metal were typical of sheaths of this type (see Chapter 5.3.2). Sheath **106** has remnants of the tip-reinforcer, probably of copper alloy, in the tip-part of the sheath. The part has been bent around the spine of the sheath.

In sheath **20**, there are also remnants of metal on the tip of the sheath. One complete tip-ferrule of iron (**219**) with remains of leather inside has also been preserved. It is of triangular shape and has covered the tip of the sheath on both sides. In the tip of sheath **24**, there is a strengthening piece of leather. It covers the tip and has been stitched on the back using the same stitches as the sheath.

In sheaths **51** and **53** there are slots through the leather at the ends of the sheaths. These could be interpreted as the slots for attachment of the chape or some kind of other reinforcer or decoration.

5.1.2.4 SUSPENSION MODES

In 93 sheaths, there is some kind of indication



Fig. 9. Knives tucked through the purse. Illustrations from the *Book of Chess* by Kunrat von Ammenhausen from the end of the 14th century.¹⁶⁶

of the suspension method (or the lack of it). Of these sheaths, 19 (20 per cent) seem to be without the indication of the method of the suspension. It is possible that in some of these sheaths, the suspension system has been attached in a way which has left no visible marks on the sheaths. It is known, however, that sheaths could have been carried by tucking them behind the belt or through a purse, which is known from the iconographic sources of the Middle Ages (Fig. 9).

SIDE SEAMED SHEATHS

I will firstly describe the suspension of the side seamed sheaths. There are 51 side seamed sheaths with an indication of the suspension method (Fig. 10).

There are 14 side seamed sheaths (27 per cent) which seem to lack the suspension system. The most common method in side seamed sheaths has been to make slots through the leather on the upper end of the sheath (17 cases, 33 per cent). Through these slots, a thong could have been threaded.

The most usual type is two slots on top of each other on the top end of the sheath (15 cases). In one case, there is only one slot on the upper end of the sheath. The slots are always on the seam side of the sheaths. In two cases, there is a broadening, 'a suspension flap', for the slots in the upper end of the sheath. With this method, *the knife hung slightly diagonally from the belt*.

The second common method (15 cases, 29 per cent) has been the making of transverse, paired slots on the upper end of the sheath.

Usually there is one paired slot on both sides of the sheath. With this kind of suspension, *the knife hung vertically from the belt*. In one case, there is only one paired slot on the spine of the sheath on the upper end, thus, in this case the knife hung slightly diagonally.

A special type of sheath is the one with rows of paired suspension slots (see Chapter 5.5.3). In the Turku material, typical are the sheaths with two rows of paired slots (6 sheaths). The number of slots/row in these varies from three to six. Leather thongs threaded through these slots could be used for suspension, but they could also be purely decorative.

In two cases (four per cent), there has been a thong threaded vertically along the handle seam of the sheath. Most probably this decorative seaming has also functioned as a suspension system. The thong could continue and was probably attached to the belt.

In two cases (four per cent), straps or loops have been cut on the mouth-end of the sheath. This type of attachment seems to have been exceptional in the Turku material. In sheath **81**, there are 100 mm long straps extending from the mouth-end. On the top end of these straps, there are cut suspension slots. In sheath **117**, there are two suspension loops cut on the mouth- end of the sheath.

BACK SEAMED SHEATHS

Of the back seamed sheaths, there are indications of the suspension method in 41 sheaths (Fig. 11).

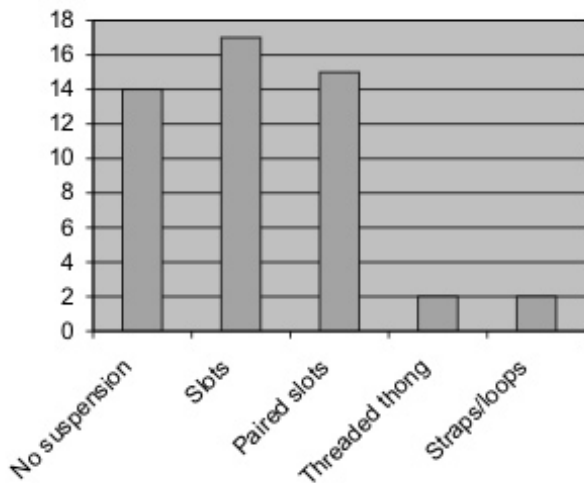


Fig. 10. The suspension of the side seamed sheaths (n=51).

Five sheaths (12 per cent) seem to lack the suspension system. The most common suspension method has been to make paired slots on the upper end of the sheath (24 cases). Usually the number of these is two, one on both side of the seam (13 cases). There can also be four, two on top of each other, on both sides of the seam (5 cases). On one sheath, there are two paired slots on the back and two on the front. *The sheaths with two or four slots have hung vertically from the belt.* In three cases there is only one slot remaining because the other side of the seam is not preserved.

There is only one sheath (82) with definitely only one paired slot on the upper end of the sheath. This sheath has hung diagonally from the belt. In one sheath, there are two slots on one side of the seam and two on the other. The position of this sheath could also have been diagonal. On one sheath with paired slots, there is a piece of a leather thong running through the slot preserved (44).

There are 13 sheaths with suspension slots on their back side. Most common are sheaths with four slots, two on top of each other on both sides of the seam (7 cases). There can also be only two slots, one on both side of the seam (4 cases). One sheath has three suspension slots on the same side of the seam on top of each other. Sheaths with slots of even number have been hung vertically, the ones with uneven number of slots probably diagonally.

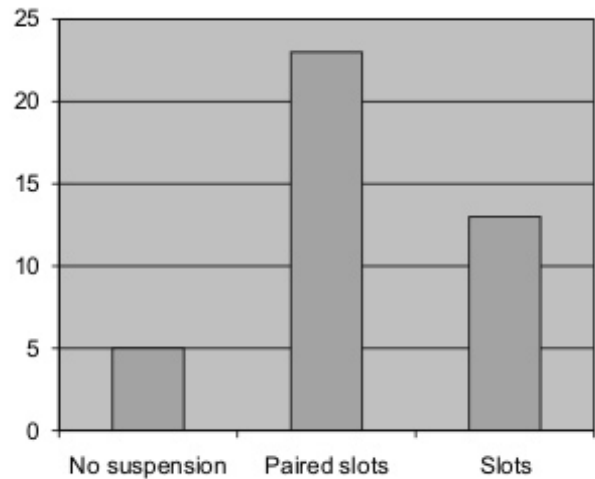


Fig. 11. The suspension of the back seamed sheaths (n=41).

5.1.3 MODIFICATIONS AND REPAIRS MADE BY THE USER

A type of modification, probably executed by the user, noticed in the knife sheaths of this study, is the *slitting of the sheath at the top*. This could have happened accidentally because of the careless withdrawal of the knife, or deliberately. Deliberate slitting could have been made because of the better fit for the handle or for the reuse of the sheath for another knife. In all three cases of this material the slitting seems to have been deliberate. In all three cases, the cut runs down one side from the top of the handle.

In sheath 29, the cut runs almost to the division of the handle and blade sections. In sheath 38 the cut extends even some distance to the blade section. In sheath 146, the cut is only on the upper part of the handle section. In sheath 19 part of the side of the handle section is slit open, but there are stitch holes and imprints of the whip stitch on the edge of the leather, probably to repair the unintentional slit.¹⁶⁷

Another type of modification has been the *making of suspension slots*. In sheath 97 a replacing, pared suspension slot, has been made on below the broken one. The slots on the middle of the back side of the sheath 18 seem to have been made on top of the decoration. It is possible that even more of the suspension slots of the sheaths were made by the owner after the purchase. In London sheaths this can be seen

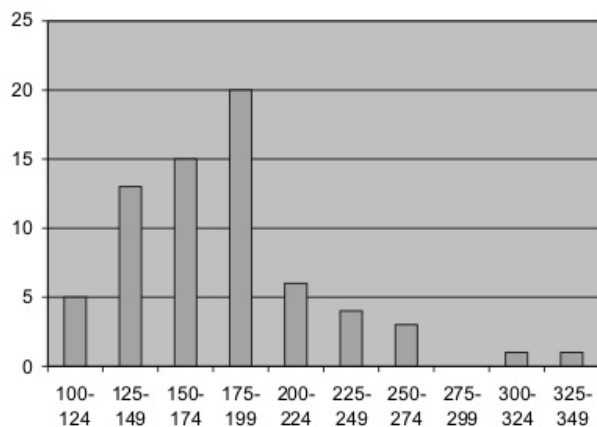


Fig. 12. Sheath lengths (mm) (n=67).

from the crude insertion of the slots and the fact that the thongs passed across the decoration.¹⁶⁸

Some sheaths have been *repaired by stitching*. Usually the type of repair stitching used is the whip stitch. In four cases the original stitching of the seam has been replaced by the repair stitch. In sheaths **58** and **45**, the repair stitch covers the whole length of the other seam edge. In sheath **48** the repair stitches are only on the upper edge of the handle section. In sheath **165**, there are secondary stitches on the tip part of the sheath. In three cases the tear or slit is elsewhere than the seam. In sheath **96** the slit or tear on the side of the lower part of the sheath has been repaired by stitching. In sheath **81**, there is a diagonal tear on the middle of the sheath, which has been repaired by stitching. In sheath **100**, the slit or torn edge has been stitched.

5.2 DIMENSIONS

Of the research material, 67 out of 168 sheaths (40 per cent, sheath caps not included) have been preserved in full length (Fig. 12).

Sheath lengths vary from 105 mm to 335 mm.¹⁶⁹ Sheaths of ca. 125 mm – 200 mm seem to be most common with a peak in the lengths ca. 175 mm – 200 mm. The two longest sheaths, **79** and **82** (305 mm and 335 mm) are outsiders in this material.

The lengths of the handle section (possible to measure in 22 cases) vary from 70 mm to 115 mm. (Fig. 13). It must be remembered that the handle lengths of the sheaths do not necessarily correspond to the handle lengths of the knives. Probably the knife handle more or less protruded

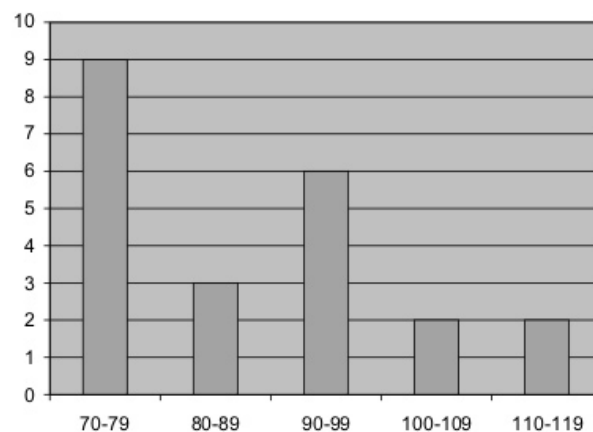


Fig. 13. Lengths (mm) of the handle section of the sheaths (n=22).

from the mouth-end of the sheath, maybe more in the sheaths with shorter handle section and less in the sheaths with a longer handle section.

In the Åbo Akademi site material, there is one sheath, dated to the late 14th century or the early 15th century, with a blade and the whittle-tang remaining inside the sheath (**120**). In this case the tang protrudes about 10 mm from the mouth-end of the sheath. Thus, also the knife handle has been visible outside the sheath. How much, depends on how far inside the handle the tang penetrated. This could, of course, be a personal choice of the manufacturer, but there could also be some regularity. On London knives, for example, during the 12th and 13th centuries the tangs usually penetrate only a short distance into the handle while in later knives, the tangs extend the whole length of the handle.¹⁷⁰

In Åbo Akademi knives, there are both knives with tang through the handle and knives where the tang penetrates only some distance into the handle, the former being more common.¹⁷¹ Thus, in the case of sheath **120**, the handle could have protruded maybe no more than some 10 mm from the mouth-end of the sheath. This also seems to be the case in sheath **125**, which was found from the Aboa Vetus excavation with knife **220** inside. In this case the knife handle extends only ca. 5 mm. from the mouth-end of the sheath.

The length of the blade section (measured in 18 cases) varies from 65 mm to 150 mm (Fig. 14). There is a peak in blade lengths between ca. 100-110 mm. The 155 mm blade length of sheath **24** is an outsider.

It has been possible to measure both the handle length and blade length in 18 cases. The relation of these measures is presented in Fig. 15.

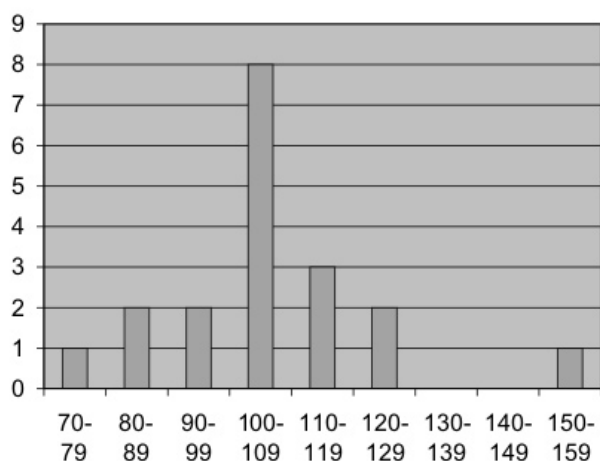


Fig. 14. Lengths (mm) of the blade section of the sheaths (n=18).

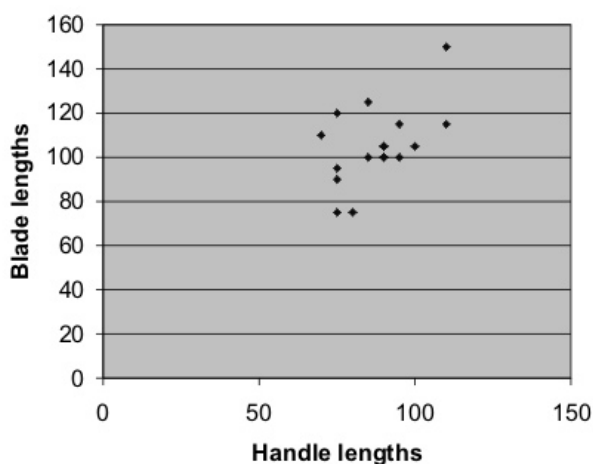


Fig. 15. The relation of the handle lengths and blade lengths (mm) of the sheaths (n=19).

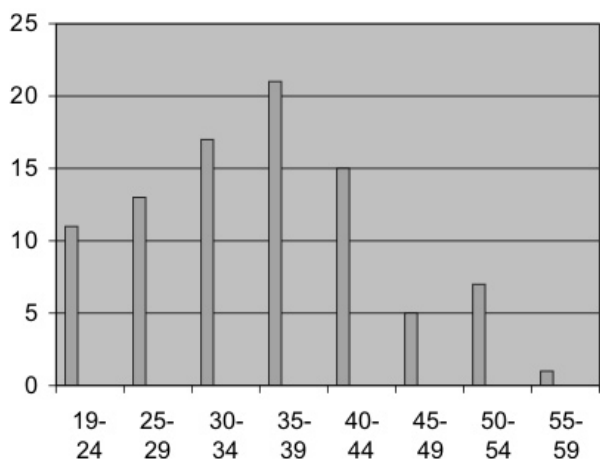


Fig. 16. The width (mm) of the sheaths (n=90).

It can be noticed that in only one case, the lengths of the handle and blade sections are the same. In all other cases the blade sections exceed the lengths of the handle sections. Again, it must

be noticed that the lengths of the handle sections do not necessarily correspond to the lengths of the knife handles, the knife handles could have been ca. 5 mm – 10 mm longer on the basis of the examples discussed before. Even if this measure is added to the handle lengths, on the basis of the sheaths, most knives would still have a blade longer than the handle. This is not in contradiction with the general picture of medieval knives. However, the *puukko*-knives of later historical times differ from these knives. They usually have the blade length the same or often even shorter than the handle.¹⁷²

The width of the sheath is measured in 90 cases (Fig. 16). It varies from 19 mm to 55 mm, reflecting, of course, the width of the knife blade.

5.3 BASIC FORMS OF SHEATHS

Usually, when the forms of knife sheaths are discussed, there is a primary division in two forms, *symmetrical* and *asymmetrical* sheaths. In asymmetrical sheaths, the form of the blade section of the sheath follows the form of an asymmetrical, one-edged blade, in other words, one of the sheath edges tapers asymmetricaly and follows the blade form. In symmetrical sheaths, both edges of the blade section tapers symmetricaly towards the tip of sheath. In a sheath of this type fits either a symmetrical, one- or two-edged blade but also an asymmetrical, one-edged blade, which fits in the sheath, the blade in either direction.

Thus, the symmetrical sheath does not necessarily mean that the knife was symmetrical. For example, in Finland, the knife sheaths from ethnographical contexts, from the 18th till the end of the 19th century were all symmetrical, even if the knives carried in them were the usual asymmetrical, one-edged *puukko*-knives of Finland.¹⁷³

The origin of the symmetrical sheaths in Finland has been discussed, for example, by Päläsi. According to him, the symmetrical knife sheath in Finland originated in the Middle Ages when peasants copied the dagger sheaths of the higher classes of society and put into them their asymmetrical, one-edged knives.¹⁷⁴ Also, according to Vilkkuna, the symmetrical sheaths were brought as an idea with the medieval German hanse-trade with the name *puukko* (Middle-Low-German *Pôk*).¹⁷⁵

The symmetrical and asymmetrical sheaths also occur in the medieval sheath material of Turku. *Of the sheaths, possible to classify (109 cases), 92 (84.5 percent) are more or less asymmetrical and 17 (15.5 per cent) sheaths symmetrical.* No chronological conclusions can be made with the present material. The asymmetrical form in the sheaths of this material has been produced simply by making one edge of a cutting pattern a little bit shorter than the other edge, i.e. no bending or moulding was used. In these asymmetrical sheaths, it is usually the blade edge, which slightly tapers in the tip following the knife blade edge, i.e. also the asymmetrical blade sections are 'straight'. Forms, where the whole tip would be strongly curved, are not represented.

5.4 DECORATION

In the sheaths of this research material, decoration of some kind occurs in 88 cases of the 168 cases (52 per cent). Of the unbroken sheaths, decoration occurs in 39 of the 67 sheaths (58 per cent). Thus, it could be said that over half of the sheaths are decorated by some means. I will firstly describe the different leather decoration techniques, then the other decoration types and after that the different decoration motifs used in the sheaths.

5.4.1 DECORATION TECHNIQUES OF SHEATHS

5.4.1.1 LEATHER TOOLING AND THE PLACEMENT OF DECORATION

Most of the sheaths of the research material with decoration were decorated with tooling the leather with various techniques (83 cases). The frequencies of different leather tooling techniques are shown in Figs. 17 and 18.

Techniques can be divided in two basic categories.

- 1) techniques, in which the decoration reaches only the surface of the leather
- 2) techniques in which the decoration goes through the leather

Techniques of category one can be divided in two sub-groups.

- 1a) techniques in which the grain surface is broken
- 1b) techniques in which the surface of leather is pressed and the grain surface remains intact

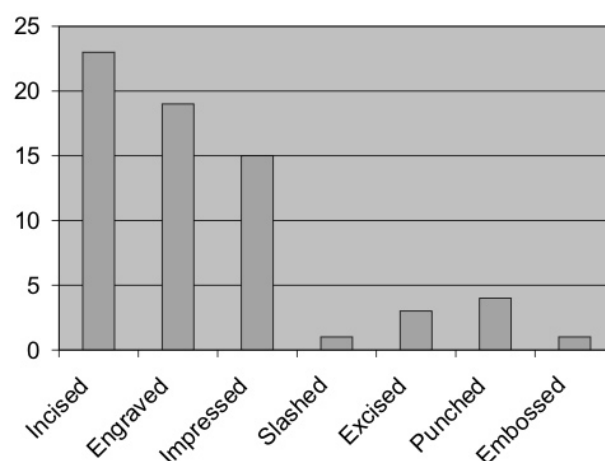


Fig. 17. Leather tooling techniques of sheaths, one technique used (n=66).

Of the techniques of type 1a, in *incised* decoration (Fi. *viiltokoristelu*)¹⁷⁶ the surface of leather is cut with a sharp, cutting tool (with a knife, for example). In *engraved* decoration (Fi. *kaiveruskoristelu*), sometimes also called *gouging* (Fi. *uurtokoristelu*), the surface of leather is tooled in a way that an amount of leather is removed. The cut is usually wider than in an incised decoration. A knife or special gouge-like tools can be used.¹⁷⁷

In techniques of type 1b, there are also many variations. In *impressed* decoration (Fi. *painettu koristelu*), sometimes also called *creasing* or *veining*, the surface of leather is moistened and worked with hard, smooth tools to make impressions in the leather. Because of the compression of the leather a dark line or area will appear in these places. This effect can be enhanced by tracing lines with a heated tool. *Embossing* (Fi. *pakotuskoristelu*) is similar to impressing in that wet leather is worked with a hard, smooth object, but in this case an entire area of leather is worked instead of lining. It can be raised or depressed and moulds may be used to press it into a certain shape. The leather can be embossed either from the grain side or the flesh side.¹⁷⁸ In *stamping* (Fi. *leimakoristelu*) leather can be stamped in different ways; with a cold or a heated stamp, a flat stamp, a relief stamp or a sharp stamp.¹⁷⁹

Of the techniques of type 2, *slashing* (Fi. *läpiviilletty koristelu*) is the same technique as incision with a difference that in slashing the incisions are cut through the leather. The term slashing is used, when no leather is removed in

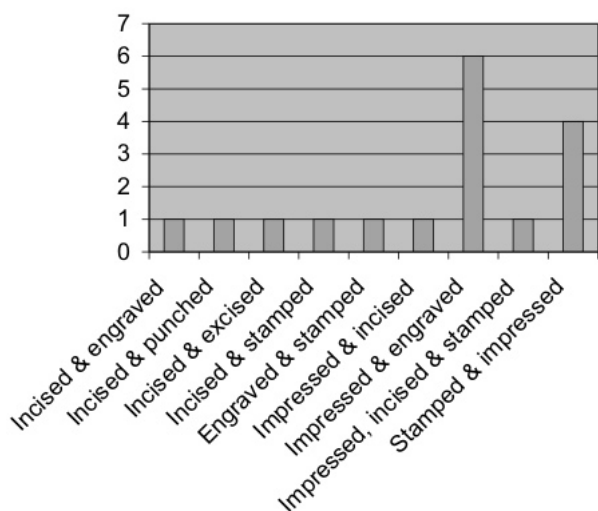


Fig. 18. Leather tooling techniques of sheaths, combinations of techniques used (n=17).

cutting. If leather is removed by cutting to make, for example, decorative edges or openwork patterns, the technique is called *excision*.¹⁸⁰ In *punching* (Fi. *meistaus*), unlike in stamping the tool and decoration goes through the leather. The punch tools can be used either to make slash-like motifs or openwork decoration.

Incision is the most common decoration technique in the sheaths of this study. It is mostly used as the sole decoration method but can be supplemented with engraved, punched, excised or stamped decoration. Another common method is *engraving*. It is also in most cases a sole method but can be supplemented with stamping. The third basic method is *impression*. Impression mostly occurs as a sole technique but is more than the two previous techniques supplemented by other techniques. Of these supplementing techniques, engraving is the most frequent, but also incision and stamping occur. The reason for the frequency of the impression/engraving combination is the use of these techniques together in the same motifs. First the motif has been outlined with impression and after that emphasized with engraving. The same method could have been used with impression together with incision.

Other techniques are much more uncommon than the three basic decoration techniques. Of the other techniques, deliberate *slashing* only occurs in one case.¹⁸¹ In many other sheaths with incised decoration, there are cuts which go through the leather. This, however, seems to be caused by two reasons. One is the lamination of the leather

(in these, only the leather surface, in which the incisions are, is preserved). The other reason can be that the incisions were unintentionally made too deep.

Punching occurs in sheaths with a characteristic decoration. These are the sheaths with the rows of punched, paired, lunate slits on the handle (see Chapter 5.5.4). Whether the slits are purely decorative or also functional is not clear. Punched, lunate slits can be combined with braided decoration on the handle section of the sheath (see Chapter 5.4.1.2).

Stamping occurs also as a main decoration method but is in all cases supplemented by impressed outlining. *Embossing* occurs only in one sheath of the research material.¹⁸²

On the basis of the current material, no conclusions of the possible chronological changes in the popularity of different techniques can be made. However, it is possible that incised decoration maintains its popularity still from the latter half of the 15th century onwards better than the other two basic techniques, engraving and impression. The emphasis of these latter techniques is more in the earlier periods. This hypothesis needs more material for its support.¹⁸³

DIVISION OF DECORATION INTO DECORATIVE PANELS

It seems to be that there prevails a certain practice in dividing the surfaces of sheaths into decorative fields/panels. On the front, the basic division is into two decorative panels, roughly conforming to the knife handle and the blade.¹⁸⁴ This division is usually followed, even if the same decoration occurred both in the handle and blade sections. In these cases the division is usually marked with a transverse line or paired line (e.g. 80, 85) or only by breaking the ornament (40, 94). It can occur that there are different motifs in the blade and handle sections (e.g. 18). The convention of the division of the front seems to be strong. It prevails in sheaths of high-quality decoration as well in sheaths with decoration of lower quality, even in those, probably executed by the owner (e.g. 100).¹⁸⁵

The panel/panels and the decoration on the blade section are always vertical while the panel/panels and the decoration on the handle are either horizontal (e.g. 35, 31, 29), vertical (e.g. 30, 32, 33) or both horizontal and vertical (24). In side seamed sheaths, the spine of the sheaths could have been used as one panel for decoration (e.g.

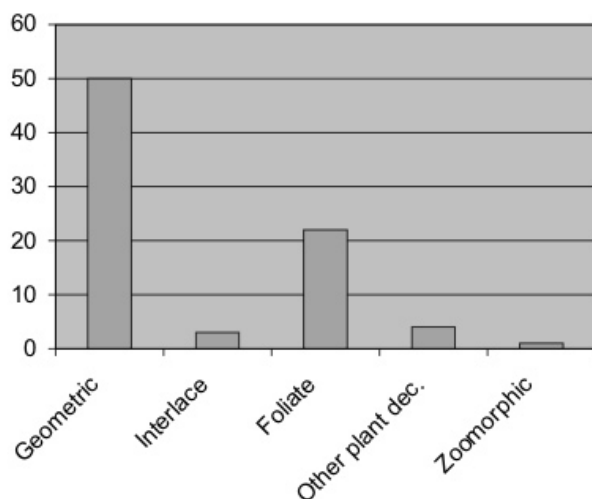


Fig. 19. Basic categories of the decoration motifs of the sheaths (n=80).

122, 94). In sheaths with a place for an additional knife, there can be a moulding on the front of the sheath, marking the place of the additional knife. This moulding is sometimes treated as one decoration panel (19, 20).

Usually, the decoration on the back has got not so much attention as the front. A typical motif on the back is lining used as a space filler (e.g. 104) even in sheaths, in which the front has, for example, carefully executed foliate (80) or different kinds of interlace (24). There are exceptions too. On the back of sheaths 18 and 15, there is repeated one of the motifs on the front, which is technically as well executed as on the front. The back could also be left completely without decoration, even if the front had complex motifs (e.g. 19, 20).

5.4.1.2 OTHER METHODS OF DECORATION

There are also other methods of decorating the sheaths than leather tooling. Using *decorative rivets* is one of these methods. Sheath 9 is riveted with tin or copper alloy rivets. The rivets of the handle are round headed. Only one rivet of the blade section survives, but there have been three others as can be seen from the empty rivet holes. The surviving rivet is of a shape of a five or six-petalled flower. There are also remnants of a metal ferrule on the edge of the blade section. In addition to the practical function, *edge-ferrules* also probably had decorative function as also other sheath fittings, *mouth bands* and *tip-reinforcers* (see Chapter 5.1.2.3).

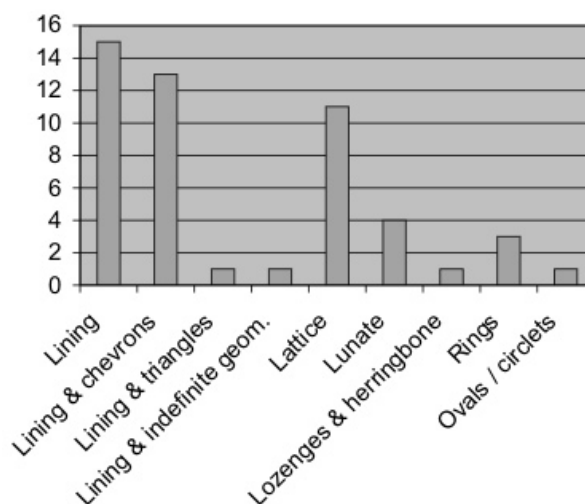


Fig. 20. Geometric decoration motifs (n=50).

Braiding (Fi. *nauhakoristelu*) occurs in two cases in the handle section seaming of a certain sheath type, sheaths with paired, lunate slits on the handle. Sheath 32 has holes for the vertical braid or thong. This has run through the holes and over the seam edge like the whip stitch based on the imprints of the braid/thong. In sheath 98 there seems to have been a similar attachment on the handle, but it has been torn open. Horizontal braiding occurs too. Also this is connected to a certain sheath type, sheaths with paired suspension slots. Decorative *stitching* occurs in only one case.¹⁸⁶

5.4.2 DECORATION MOTIFS

Different decoration motifs occurring in the sheaths of this study are presented in the Fig. 19 and discussed in the following chapters.

5.4.2.1 GEOMETRIC DECORATION

Different *geometric* motifs are the most common motifs in the sheaths of this study. They occur as the only motifs in 50 sheaths (Fig. 20). Geometric decoration also occurs as supplementing the other motif types.

LINEAR DECORATION

A basic category of the geometric motifs are the different types of *linear* motifs (Fi. *viivoitus*). The main technique of making these motifs has been *incision*. This could be connected to



Fig. 21. Linear decoration on sheath 94 (front).

the presumption that this type of decoration could be executed with a knife by the user of the sheath. The placing of the decoration seems to be quite random. Usually the front side is emphasized. Sometimes the division into two decorative panels, the handle section and the blade section is followed. A good example of the linear decoration is sheath 94 (Fig. 21).

It has both the front and the back divided into two sections corresponding to the handle and the blade. The front handle has been covered with four unsteady longitudinal incisions. On the front blade, there is only one longitudinal incision. On the back side, there are similar incisions. Also the spine of this sheath is decorated. Motifs are formed from the combinations of diagonal and horizontal lines. It is in the side seamed sheaths that the spine could be handled as one of the decoration fields too. The back side has got more attention in the decoration of the side seamed sheaths than in the back seamed sheaths, in which the seam is a restrictive factor considering the decoration panels.

CHEVRONS

Linear decoration can be supplemented with other geometric motifs. The most common of the supplementing motifs is the chevron (Fi. *polviorisi*). More than in simple linear decoration, where incision as the technique prevails, in chevron decorated sheaths, also engraving has been used along with incision. I would like to connect engraving as a more time consuming technique than incision to the more demanding and time consuming decoration motifs than simple linear decoration.

In sheath 30 (Fig. 22), there is a division between the handle and the blade on the front. The handle has furthermore been divided in two longitudinal fields. By combining chevrons, a simple but stylish result has been achieved. The back of this sheath has got less attention. It is decorated by diagonal linear ornament with no



Fig. 22. Linear decoration on sheath 30 (front).

division into decoration fields.

The front of sheath 33 is decorated with a zigzag pattern running across the whole front from the mouth-end to the tip. In sheath 40 the motif is the same but the execution different (Fig. 23). By breaking the ornament at its joints, composing it of chevrons, a more plait-like result has been achieved. The mouth-end and the tip have been left plain.

Similar broken chevron pattern occurs in the back of sheath 15. Lines and chevrons have also been used as more individual motifs or combinations of individual motifs. Because of the fragmentary state of these sheaths, e.g. 166 and 153, it is impossible to make any further conclusion of these more abstract combinations.

There are other supplementing or emphasizing motifs to the linear decoration. In 104, there is a line of punched rings between two lines of the diagonal, linear ornament. In sheath 101 there are triangular dots outlining the decoration on the blade section. In this sheath, instead of the typical straight lines, there are curved and wavy lines.

LATTICE

Lattice (Fi. *ristikko*) is the second most common geometric motif in the sheaths of this study after the linear decoration and chevrons. Prevailing technique in making lattice has been impression along with some incised lattices. The denseness of the lattice varies from the loose lattice of sheath 61, where the net-like effect is lost because of the too loose structure, to the very dense and net-like lattice of sheath 16. In all cases but one the lattice is formed of linear decoration going in two diagonal directions. In sheath 70 linear decoration is right-angled and thus the result is a *check pattern* instead of typical diagonal lattice.

There are sheaths with lattice extending almost from the mouth-end to the tip (37, 132, latter in Fig. 24), but also sheaths where the lattice occurs only in the blade section and the handle

Fig. 23. Zigzag decoration composed of chevrons on sheath 40 (front).



is decorated with other motifs (35, 70) or is plain (170). The lattice occurs in the handle section in some cases, for example, in above-mentioned 61. In 102 the fields between the intersections of the lattice on the handle front are filled with engraved ring-and-dots.

The quality of the lattice decoration varies. Sheaths 61 and 70 could surely be categorized as low-quality work on the basis of the sloppy execution of the decoration. The lattice of 35 begins as medium quality work extending from the junction of the handle/blade towards the tip. Then, just before the tip, the decorator has left the other diagonal lines undone. By this means this decoration could be categorized as been made by the user of the sheath him/herself.

Most of the lattice decorations could be estimated as good or medium amateur/low professional quality. Evaluations of this kind are, of course, highly subjective and are not comparable to other research materials.

OTHER GEOMETRIC MOTIFS

Compared to linear decoration, chevrons and lattice, other geometric motifs are much rarer in the sheaths of this material. Sheath 144 has in addition to the lattice in one field and the meandering line in another field, *lozenges* (Fi. *vinoneliö*) composed of two opposing zigzag lines (Fig. 25).

Fig. 24. Lattice decoration on sheath 37 (front).



Sheath 140 has continuing lozenges, composed of double-lines. Lozenges are much more common in the decoration of the scabbards of this study (see Chapter 6.2.1.2). Sheath 140 also has a faintly discerning *herringbone* pattern (Fi. *kalanruotokuvio*) on its side.

Better examples of the use of the herringbone are on the front of the 119 (Fig. 26) and on the back of the 24. The former has almost its whole front covered with a large and, except for a few minor slips in the incisions, a precisely executed pattern. In the latter the backside is decorated with diagonal incisions on both sides of the centre-seam, forming a herringbone. The seam forming the ‘spine’ and the tip-reinforcer the ‘head’, the impression is intentionally or unintentionally, very fishlike.

In addition to the angular motifs, *circular* motifs occur. In sheath 31 the front handle and the blade have been decorated with large, stamped *rings* (Fig. 27). The decoration is of low quality on the basis of the unevenness of the placement of the stamps (the second stamp from the tip is out of its intended place) and the impressed outlining running over the two stamps on the tip.

In sheath 123 the rings only occur on the front blade and are much smaller. *Lunate* (Fi. *puolikuu*) punches have been used in a certain sheath type, in sheaths with paired, lunate slits (see Chapter 5.5.3). The most complex geometric decoration is in sheath 91 (Fig. 28).



Fig. 25. Lattice, lozenges and a meandering line on sheath 144 (front).



Fig. 26. Herringbone decoration on sheath 119 (front).



Fig. 27. Stamped rings on sheath 31 (front).



Fig. 28. Geometrical decoration on sheath 91.

The decoration is formed of *ellipses*, which are split vertically and horizontally by a double line. The rest of the space is filled with curves, formed of double lines and filled with pricked dots. The arch-like curves connect the ellipses and fill the rest of the space.

In sheath 36 there are four impressed circles with double circumferences on the blade front amidst the disordered, curved lines.

5.4.2.2 INTERLACE DECORATION

There are only three examples of *interlaced* decoration (Fi. *nauhaornamentiikka*) in the sheaths of this study. In sheath 158 (Fig. 29), there is a transverse field of angular plaiting, formed of three bands; a zigzag-band follows another and is on top of it. The third band runs in turns under and over these two bands.¹⁸⁷ The pattern extends from the front to the back of the sheath. There has been more than one field of decoration of this kind but only part of another field is preserved.

In sheath 15 (Fig. 37) the plaits on the front and one side of the back are formed of two intertwined bands connected in the ends like in ‘number 8’. On the blade section of sheath 24 there is an angular plait like in 158, but composed of only two bands intertwining each other. On top of this decoration field there runs an interlace in a similar horizontal field, but composed of only single lines instead of band-like double lines. In addition to these motifs, there is also a dense lattice on the mouth-end of the sheath and angular, S-formed motifs on one side of the handle section. The herringbone of the back side was discussed in Chapter 5.4.2.1.

Sheaths 158 and 15 can be dated to the period ‘the latter half of the 14th century – the first half of the 15th century’ by their find context. Sheath 24 can only be given a ‘medieval’ dating.

5.4.2.3 PLANT DECORATION

FOLIATE DECORATION

The curving stem with foliage was introduced in the Nordic art in the early 11th century with the Romanesque style. This motif in its basic form, a stem with lobed tendrils, is one of the most frequent and spread of the European motif categories.¹⁸⁸ Foliate ornamentation (Fi. *lehtiköynnös*)



Fig. 29. Three-band plaiting on sheath 158 (front).

is the second most common motif group after geometric decoration in the sheaths of this study. One can see the motif in sheath 128 (Fig. 30).

The impressed stem waves evenly and the foliage is three- and four-lobed. The first lobes of the tendrils are curved into a spiral.

Exactly the same idea has been executed in sheath 112, but the execution is inferior to the former. The stem is in its basics of good work, except for the few unintended, angular incisions, probably caused by the unsuitability of the incision technique for making even curves. Greater difference is, however, in the execution of the tendrils, which lacks the details and the even execution in the case of sheath 112. The empty spaces left on the decoration field have been filled with lines.

Foliage of the lobed-leaf type can be seen in the front blade of sheath 18 and on both sides of the seam on the back. The stem curves evenly and the tendrils are three- and four-lobed. The empty spaces left between the branch of the tendril and the main stem have been filled with round, rosette motifs. The edges of the foliage have been bordered with short, transverse lines. In sheaths 20 and in 34 one can see the steady curve of the stem and the lobed tendrils. In 126, the number of the lobes in the tendrils of the handle has increased to six and seven.

In sheath 19 there is a steadily curving stem with three-lobed tendrils. In this ornament the tendrils below and above the stem point in opposite directions. In 29 the main stem and the branches are of equal thickness. Lobed tendrils are missing here, but the branches have upwards



Fig. 30. Foliate ornamentation on sheath 128 (front).¹⁸⁹

pointing ends opposing each other and connected under the main stem. The result is much more plait-like than in the former cases.

There is a group of sheaths, in which the foliage has certain properties: 1) the decoration is incised, 2) the curves of the stem are steep and wave-like, 3) the tendrils have been executed with rows of curved lines. The group includes sheaths 80, 172 and 86 from the Åbo Akademi main building site excavation and a small fragment 133 from Uudenmaankatu 5 with similar form of motifs and almost identical 'handprint' of incisions.

In this group I include sheaths 85 and 167 from the Akademi excavation of similar execution of tendrils but with different running of the main stem, detailed linear decoration to fill the empty spaces and edging the stem with dots. The decoration is detailed and technically of high-quality. Extremely simplified foliage occurs in sheath 138 in which the tendrils have been incised with paired lines. *The datable sheaths of this group of abstract foliate ornamentation with uniform basic properties (execution of tendrils by incised lines, wave-like running of the stem) have an emphasis in the latter half of the 15th century – first half of the 16th century.*

Instead of plant tendrils, there is foliage of *trefoils* (Fi. *kolmilehti* or *apila*) on the front handle of sheath 18 (Fig. 31).

On the spine of sheath 122, there runs an angular stem with small trefoils branching from it. The latter from the Old Great Market Place can be dated by the find context to the second quarter of the 14th century and the former from the Åbo Akademi excavation to the latter half of the 14th century – the first half of the 15th century.

Perhaps the most detailed and realistic foliate ornament occurs in sheath 21. Here a foliage with tendrils, shoots sprouting from them, is entwined around the straight and thin stem on the middle. Without parallels this sheath can only be given a loose dating by its find context from the 14th century to the early 16th century.



Fig. 31. Foliage on sheath 18 (front).

OTHER TYPES OF PLANT DECORATION

Other type of plant decoration than foliage occurs as *stamped flower motifs*. In sheath 17 there are two types of flower stamps. On the front there are longitudinal rows of stamps extending from the upper end to the tip, the mouth-end is undecorated. Two rows on the right have quatrefoils (Fi. *nelilehti*). Two rows on the middle have a dotted surface made by stamping with the quatrefoil stamps, on the middle, there are two cinquefoil (Fi. *viisilehti*) stamps. The row on the left has again the quatrefoils. On the back, there is a row of cinquefoils on the left. The sheath belongs to the period 'latter half of the 14th century – first half of the 15th century'.

Sheath 163 has a front surface covered with cinquefoils stamped repeatedly to create an overall surface effect. The sheath belongs to the period 'latter half of the 14th century – first half of the 15th century'. Sheath 119 has larger rosette-like flower stamps. The sheath is unfortunately without a datable context. Similar stamps occur in 169, which can be dated to the first half of the 15th century.

5.4.2.4 ZOOMORPHIC DECORATION

There is only one sheath in the research material with zoomorphic decoration (22, Fig. 32). On the front of the sheath there are three embossed animal figures. These seem to be some kind of fable animals, occurring in fresco paintings of churches and book illustrations in the Middle Ages. Appelgren, who firstly discussed this sheath considered the animals as some kind of birds referring to the figures on a silver plate in Hildebrand's *Sveriges Medeltid*.¹⁹⁰

Zoomorphic decoration of this kind is common in the sheaths found in the North-Sea cultural sphere (Norway, England). For example, in London sheaths, this kind of decoration occurs from the mid 13th century to the 14th century.¹⁹²

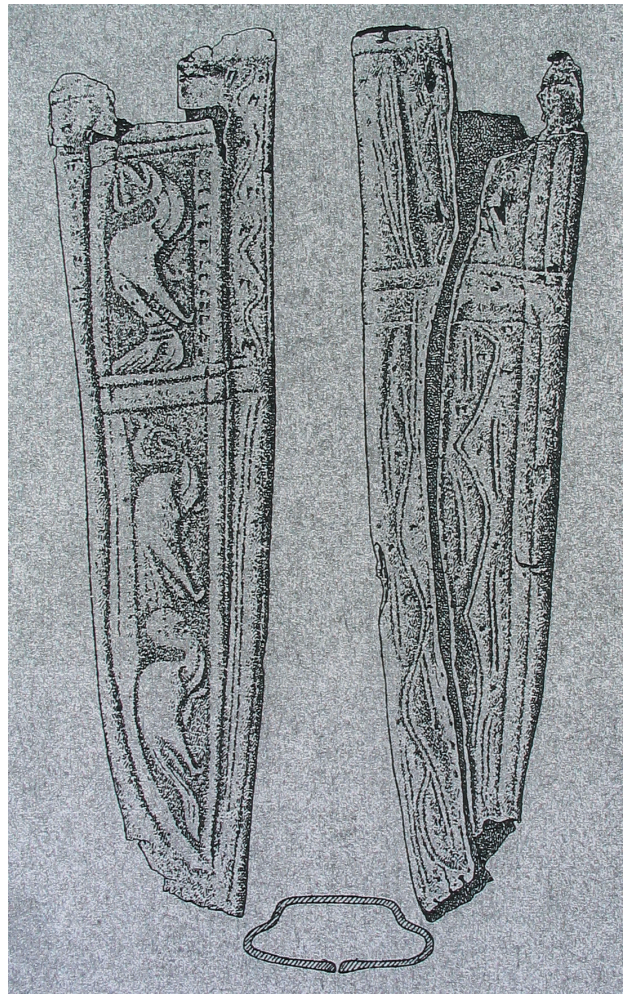


Fig. 32. Zoomorphic decoration on sheath 22.¹⁹¹

Zoomorphic decoration seems to lack in the German material of sheaths. Appelgren's dating of the sheath to the 14th century could hold true. From the same find context comes sheath 9, which I have dated to the 14th century (see Chapter 5.5.2).

5.4.2.5 MARKINGS OF THE MAKER'S MARK-TYPE

On three sheaths, there are markings, which could be interpreted as the maker's marks or more probably as inscriptions made by the owner for some reason. In sheath 32, there are crossing incisions on the front blade. In sheath 35 these occur in the handle front. On the handle front of 70, there is an impressed mark of X-form with a middle line (Fig. 33).

5.4.3 DISCUSSION ON DECORATION

Who made the decoration on sheaths? There are some sheaths, in which there is a technically high-quality decoration. On the other hand, it

Fig. 33. *Inscriptions on sheaths 32, 35 and 70 (from left to right).*



seems that a much larger part of sheaths have *not* so high-quality decoration. Part of these sheaths could have been decorated, for example, by the sheath owner him/herself. Another option is that they were in fact decorated by the manufacturer. But why make a low-quality decoration? Of course, it could be assumed that this was because the lack of skill. On the other hand, in many cases there is a clear distinction between the high-quality seaming and stitching and not so high-quality execution of decoration.

It is impossible to estimate the significance of the little differences in the quality of decoration in the mental world of the citizens of medieval Turku. If it is assumed that the differences in quality had esthetic significance, the differences in the varying quality could instead of the lack of skill be seen as *products of different quality for different consumer groups*. On the other hand, if it is assumed that esthetic values did *not* have great significance, the differences in the quality of decoration could indicate that the manufacturer could make artefacts of varying quality in decoration, but which still could be as durable and functional compared to each other.

It is noteworthy that even if the surfaces of the sheaths formed a good ground for graffiti-like decoration/markings from the free imagination of the user, these do not occur frequently in the sheaths of this material (exceptions could be sheaths **114**, **28** and **105** and the sheaths with the maker's marks in the last chapter). The motifs used have been highly conventional even in the cases where the decorator probably was the user of the sheath.¹⁹³

Indeed, instead of inventiveness, in some of the sheaths, there is manifested a phenomenon, which could be called *imitation*. This can be seen, for example, in the foliage decorated sheaths, which seem to have been popular through the whole of the Middle Ages. The varying quality

can be seen in technical quality but also in the *understanding and execution of motifs*. It seems to be that in some sheaths the mere existence of the decoration motif has been sufficient, irrespective of the execution of the motif (see e.g. the differences in the execution of the punched motifs of sheath **32** vs. **115** and in the foliate of sheath **128** vs. **112** or **60**).

The decorator has maybe tried to do his/her best but, at least from modern day esthetic perspective, has not succeeded.¹⁹⁴ It could be that the result was sufficient for the maker. He/she had a sheath, which had the same type of decoration one had seen somewhere.

What were the models for the decoration then? They were probably picked from the living environment, secular and ecclesiastical architecture, book illustrations and, of course, from the artefacts of the other people in the same or a higher social class / status, maybe not so willingly from people of a lower status.

5.5 EXAMPLES OF TYPING THE SHEATHS

In the preceding chapters the sheaths have been typed by their attributes of technical variables (seam and stitch types, placing of the seam), by the basic form (symmetrical/asymmetrical) and by the decoration (different techniques and motifs). In the following chapters, more detailed types of sheaths are presented.

I have used different variables in forming these types. 'Sheaths with excised decoration', 'with rows of suspension slots' and 'with lunate slits' have been distinguished by a certain feature in their appearance, specific in each type. These specific features are thought to have chronological significance and therefore dated parallels from abroad are of importance.

Sheaths 'with caps' and sheaths 'with a



Fig. 34. Sheath cap 3 with lattice and chevron decoration and two paired suspension slots.

space for additional knife or tool' have in addition to the specific appearance a certain specific functional attribute. 'Unprofessionally manufactured sheaths' have been distinguished by their functional quality, which has been evaluated. 'Sheaths for special knives or tools' have been distinguished by their form, which differs from the sheaths for general purpose knives. On the basis of the extraordinary form, it can be concluded that the knife or tool the sheath contained had a specific function.¹⁹⁵

In the chapter discussing dagger sheaths and *puukko* sheaths, it is asked if it possible to distinguish sheaths for these knife types at all.

I suggest that the artefact types I have formed would have been recognized as 'types' also by the people who made and used the artefacts in medieval Turku. An exception could be my quality evaluation, which is more an instrumental tool of a researcher. The validity of this classification in medieval society can not be evaluated.¹⁹⁶

5.5.1 SHEATHS WITH 'CAPS'

In the research material, there are nine artefacts, which I have categorized as caps belonging to knife sheaths (1 - 8, 222). Eight of these derive from the Åbo Akademi main building site excavation and one from the Old Great Market Place excavation. The function of the sheath cap is to prevent the loss of the knife especially when the person is on the move. The cap is placed on the top of the knife handle and it is held in its position by straps, attached between the sheath and the cap.

All the caps in the research material are made of one piece of leather. All have a closed seam with flesh/grain stitches on top of the cap. The seam continues on the side or back of the cap. The manufacturing technique of caps could have been the same, which Bo Bergman describes in his book of making knife sheaths. The sheath and the cap are made of one piece of leather. The sheath is stitched and then the cap is cut off from the sheath. Thus, the cap has the same stitch type and placing of the seam as the sheath.¹⁹⁷ Of course, it is possible to make a cap separately from another piece of leather. Also in this case the cap probably had the same seam placement and type as the rest of the sheath. Unfortunately, there are no sheaths found with caps and thus sheaths found from the excavation cannot be connected to a certain cap.

The stitch type is s shoemaker's stitch in all cases. The length of the caps varies from 25 mm to 50 mm and the width from 35 to 50 mm. The caps are uniform in their manufacturing technique. Some variation is found on the suspension slots. The most frequent type has a paired slot on both sides of the cap with a side seam (or on both sides of the seam on the back, on the cap with a back seam). On one cap, there are two paired suspension slots on top of each other on both sides (3, Fig. 34). On one cap, there is one paired suspension slot on one side and two parallel paired slots on the other side (8).

Three caps are decorated. The techniques used are stamping and engraving. The motifs are lattice (3, 6), chevrons (3) and rings (4). The motifs probably follow the decoration of the rest of the sheath because of the same manufacturing process although this cannot be proved with the material. In addition to the scratches, covering the surface of cap 1, there are incisions resembling runes on both sides. The markings seem to be only 'rune-like' incisions and cannot be interpreted.¹⁹⁸

The caps from the Åbo Akademi site can be dated to the period of 'the latter half of the 14th century – the first half of the 15th century' by their find contexts. The cap from the Old Great Market Place is dated to the second quarter of the 14th century by its find context. No further chronological conclusions can be made with the present material.

The medieval parallels to the sheaths with caps are few. One of the Bockstenman's two sheaths has a cap.¹⁹⁹ The Bocksten find (Halland,

Fig. 35. Sheath 9 with excised decoration on the edge.



SW Sweden) is dated to the 14th century by radiocarbon datings.²⁰⁰ There are also five artefacts from Lübeck (Schleswig-Holstein, Northern Germany), which could be caps of the knife sheaths on the basis of the figures, even if their function is not identified as such by the authors. They are dated to the second quarter of the 15th century and to the period 1220-1250.²⁰¹ Among the finds from London, there are two sheaths, which originally probably had a cap. These are dated to the 1st half of the 14th century and to the late 14th century.²⁰²

In later historical times in Finland, sheaths with caps have been characteristic especially in Southern Ostrobothnia, Satakunta and parts of Häme.²⁰³ In Sweden, sheaths with caps have been centred in Middle Sweden in late historical times.²⁰⁴

5.5.2 SHEATHS WITH EXCISED DECORATION ON THE EDGE

From Hämeenkatu 17, there comes a knife sheath (9, Fig. 35) of goat or sheep leather with excised decoration on the blade section of the seam side (see Chapter 2.1.1 about the research history of this site).

The sheath has a closed side seam, which is riveted with tin or bronze rivets. On the handle section, there have originally been five rivets; one is missing now. The rivets of the handle are round headed and probably of tin or bronze. Only one rivet of the blade section survives, but there have been three others, one in each decorative cut as can be seen from the empty rivet holes. The surviving rivet is of a shape of a five or six-petalled flower. There are remnants of the metal ferrule on the edge of the blade section. On the handle, there are two vertical lines of paired suspension slots, five slots in each row.

The dating of the sheath is problematic because its find context is not clear. However, this sheath type has close parallels. According

to Schnack, this is 'Form 3' of his categorization of the Schleswig sheaths. Typical of this type is just the decoratively excised edge or edges. This type appears in Schleswig (Northern Germany) around the year 1200 and also occurs in the layers of the 14th century.²⁰⁵ Of the Schleswig sheaths of this type, one is an exact parallel to the Hämeenkatu sheath what comes to the form of the cut decoration and to the number of the paired suspension slots on the handle.²⁰⁶

From Svendborg (Southern Fyn, Denmark) comes a sheath of this type. This sheath is seamed with stitching. On the handle section, there are two rows of suspension slots on the handle and trapezoidal cuts on the blade section. This sheath is dated to the 14th century.²⁰⁷

A sheath from Lübeck has trapezoidal excisions and fringes on the tip. It is seamed with rivets but has no suspension slots. The sheath cannot be dated by its find context.²⁰⁸ Another sheath from Lübeck has metal ferrules, decorative punching and rectangular cuttings. It can be dated to the 13th or the 14th century.²⁰⁹ The third sheath of this type from Lübeck has metal ferrule, long tassels on the edges and is seamed with ferrule and rivets. It can be dated to the 13th or the 14th century.²¹⁰

A sheath with rectangular excisions comes from Århus (Eastern Jutland, Denmark). It is seamed with stitching and has one suspension slot on the upper edge. It is dated to the beginning of the 13th century – the beginning of the 14th century.²¹¹ A sheath from Örebro (Närke, Central Sweden) has cut fringes on the edge and two rows of paired slots on the handle section. It is dated to the 14th century.²¹²

Another sheath from Örebro but without dating mentioned seems to have an excised decoration on the edge.²¹³ The third sheath is dated to the 14th century. It has two rows of paired slots on the handle, five slots in each row. The handle section is seamed with five rivets of iron. The method of the seaming of the

blade section is uncertain. The edge of the blade section has rectangular and tassel-like cuttings. An interesting aspect of this sheath is that it has a rune inscription of 'maria patær' incised on the sheath.²¹⁴

From Tartu (Southern Estonia) derives two sheaths of this type. The first one has two rows of paired suspension slots on the handle. Leather thongs running through the slots seem to have been preserved. The handle section is seamed with rivets. The cuttings are rectangular. Another sheath has also a rivet seaming on the handle section. The blade section has cut tassels. These sheaths are dated to the 13th or 14th centuries.²¹⁵ Sheaths with cut decoration occur in the medieval material of Riga, Latvia, too.²¹⁶

For some reason, these sheaths seem to have been really frequent in Kołobrzeg (NW Poland) in the latter half of the 13th century and in the 14th century.²¹⁷ This can partly be because of the active excavation and publication work carried out but could refer to the possible manufacturing centre of these sheaths either in Kołobrzeg or somewhere quite near.²¹⁸ From Wrocław (SW Poland) come sheaths with rectangular cuttings on the edge, dated to the 13th century.²¹⁹

The Hämeenkatu sheath has two parallels in Turku (**10, 221**). The first one was found in the excavations at the Turku Castle. The handle section is riveted with six round-headed rivets. The handle section has two vertical rows of paired slots with six slots on a row. Unfortunately, the blade seam is torn and the form of cut decoration cannot be concluded surely, but I would suggest a trapezoidal form. The sheath comes from a filling layer formed in the middle of the 15th century probably containing older material.

The second parallel is a recent find from the Library site excavation (2003). The sheath is of goat leather and has a closed side seam. Also in this case the handle section is riveted with six rivets. The sheath has a metal ferrule on the blade side of the blade section. On the handle, there is a vertical line of paired slots with five slots in a row. The sheath has been decorated with two decoratively excised fringes on the blade section of the seam side. The sheath can be dated to the 14th century, probably to the latter half by its find context.

For the Hämeenkatu sheath, I would suggest a dating to the 14th century (or even the end of the 13th century) on the basis of the parallels abroad. It seems to be that this sheath type has

been really popular and widely circulated in the Baltic Sea area.

5.5.3 SHEATHS WITH ROWS OF SUSPENSION SLOTS ON THE HANDLE

We have seen that the usual trait in the sheaths with excised decoration is the rows of suspension slots, which are usually paired, on the handle section. *I would like to connect the sheaths with rows of slots, but without the excised decoration on the edge together.* A sheath from Turku Castle (**11**) has six rivet holes on the handle. The blade section has no stitch or rivet holes. There is a row of paired slots on the handle; each row has four slots. The sheath comes from a filling layer, formed in the middle of the 15th century, and probably containing older material from the castle. Another sheath from the same context is quite similar, but smaller (**12**). It has five stitch or rivet holes on the handle, they are missing from the blade. The sheath has a row of paired slots in the handle, three slots on a row.

From the Aboa Vetus excavation derive two sheaths with rows of paired slots. Of the sheath **13** there remain two fragments with remains of rows of suspension slots. It is dated by its context to the first half of the 14th century. Sheath **14** is a fragment from the handle section. It has two rows of paired suspension slots, at least five slots on a row. It can be dated roughly to the Middle Ages.

This sheath type with rows of paired suspension slots, but without cut decoration has parallels abroad. From Svendborg derives three sheaths. One has four paired slots on the handle. Another has two rows of paired slots, four slots in each. The seaming is done by stitching. These sheaths are dated to the period 1270 – 1300.²²⁰ The third sheath has two rows of paired slots, five slots on each. The blade section is missing. The sheath is dated to the period 1320 – 1350.²²¹

From Lübeck derives a sheath with riveted seaming and four paired suspension slots. It has a dating to the beginning of the 15th century – 1563.²²² A sheath from Amsterdam (the Netherlands) has three rows of paired slots, five slots on a row. The handle section most probably had a seaming with a leather thong. The blade section is seamed with a ferrule. The sheath is dated to the last quarter of the 13th century.²²³

From Wijk bij Duurstede (Utrecht, the Netherlands), there comes a sheath probably of goat

Fig. 36. Sheath **125**
with lunate slits on the
handle.



leather, with two rows of paired slots, five slots on a row. Seaming is done with iron rivets and the tip of the sheath is strengthened with a leather addition. It is dated to the period the 14th century – 15th century.²²⁴ As the sheaths with cut decoration, sheaths with rows of suspension slots occur frequently in the materials from Kołobrzeg.²²⁵

According to Schnack, sheaths with paired slots in vertical rows come from the layers of the 13th and 14th centuries in Schleswig.²²⁶ I would suggest a dating to the 14th century (or late 13th century or early 15th century) also to Turku sheaths of this type. It is possible that the rows of paired suspension slots have been preserved as a phenomenon slightly longer than the cut decoration on the edge, even if the roots of both aspects seem to be in the same sheath type. The sheaths with the aspects ‘cut edge and / or rows of suspension slots’ seem to include sheaths of various forms and sizes; thus they do not seem to have been connected to any one type of knife. The decorative aspects rather reflect a certain common and widespread style, applied to various kinds of sheaths.

5.5.4 SHEATHS WITH PAIRED LUNATE SLITS ON THE HANDLE

There are four sheaths in the Turku material, which all have one common feature. They have a row or rows of punched, lunate slits on the handle section. Three sheaths come from the Åbo Akademi excavation (**32**, **115**, **98**) and one from the Aboa Vetus museum excavation (**125**). The motifs have been made with a punch of lunate form.

In sheath **125** (Fig. 36) there is a single, vertical row of five, paired lunates both on the front and on the back of the handle. It seems that these were purely decorative and not used for suspension, otherwise there would be imprints of thongs or at least the slits were not flat, but were formed by the thongs pulled through them. Sanna Jokela has discussed this sheath. Because the sheath cannot be dated by its find contexts,

she has dated it according to the parallel from Svendborg to the first half of the 14th century.²²⁷ Svendborg is not the only place where there are parallels for this sheath type.

*Again, Kołobrzeg is the town, in which there is a concentration of these sheaths in the latter half of the 14th century.*²²⁸ Here the lunate slits occur either as single rows or as two parallel rows. The seaming method has been either stitching or riveting, also metal ferrules on the blade section occur.

The sheaths with two rows of lunate slits have parallels in the Åbo Akademi material. One sheath of Kołobrzeg even has, in addition to the slits, similar holes for the decorative thong seaming of the handle as sheaths **32** and probably **98**.²²⁹ The crudely executed slits of sheath **115** have already been discussed in Chapter 5.4.3. Sheath **98** can be dated to the latter half of the 14th century or to the very beginning of the 15th century. Sheath **115** comes from the context with material from the 14th century to the 16th century. The dating of sheath **32** to the latter half of the 15th century – the beginning of the 16th century seems to be quite late compared to dating of the rest of the material. The sheath could either be in a secondary context or a late example of a certain sheath making tradition.

The sheaths with paired, lunate slits occur in Svendborg and Kołobrzeg with the sheath types discussed in the previous chapters (the ones with excised decoration and / or rows of suspension slots). In Turku, they could be given a broad ‘14th century – 15th century’ dating. The Aboa Vetus sheath (**125**) could well fit in these frames as an early example and the sheath from the Åbo Akademi excavation as later ones.

5.5.5 SHEATHS WITH A SPACE FOR ADDITIONAL KNIFE OR TOOL

According to Kustaa Vilkuna, the sheaths with place for additional knife or knives arrived to Finland from the Lower Germany cultural area in the Middle Ages along with the symmetrical

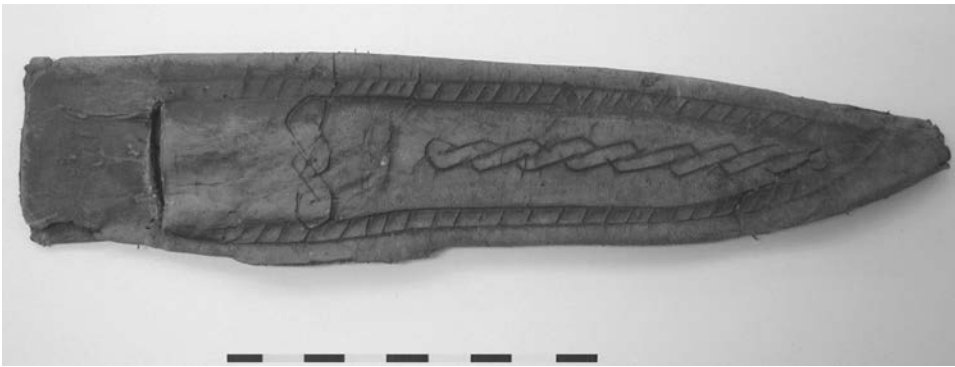


Fig. 37. Sheath **15** with plaited ornamentation and a place for additional sheath (front).

sheath (see Chapter 5.3). In Finland, the sheath with two knives is mentioned in the literary sources in 1578.²³⁰ In the dialects of Ostrobothnia, the term *junki* means a smaller knife, which was kept in the same sheaths as the main knife, *puukko*.²³¹

In later historical times, the sheath with a place for additional objects have, besides Ostrobothnia, been used in the cultural areas of West-Finland, Middle-Finland, in the Kajaani area, Häme and Uusimaa. These sheaths could have even three places, for a small knife and tools, for example, a pair of compasses and a pen.²³² The purpose of a smaller knife could be, for example, the use in dining instead of a fork, or before the fork was even introduced.²³³

Sheaths with a place for additional knives or other objects have been found from archaeological contexts, for example, in Lund and London. Sheaths with one or two additional sheaths were used in Europe in hunting knives and daggers.²³⁴ In dagger sheaths, there could be space for awl or needle.²³⁵ Sometimes the mouldings on the sheaths are only decorative.²³⁶

In the research material of this study, there are ten sheaths with indication of the possible place for additional knife or other object. In the front handle of sheaths **15** (Fig. 37) and **22**, there is a transverse slot on the upper end of the front handle.

In sheath **24**, there seems to be two parallel, transverse slots for small knives or tools. Sheaths **17**, **18** and **19** have slots on the front handle, but these sheaths also have a moulding, the purpose of which is to correspond to the place of the additional knife. In sheath **19** the form of this moulding is a smaller version of the main sheath, which acts as a decoration panel. In sheath **16**, there is only the tip part of the moulding for the additional knife preserved.

In two sheaths, there are inner sheaths or structures for the knives or tools remaining. In

sheath **21**, there were two additional sheaths inside. Additional sheath 1 could be interpreted as the lining for the case-like main sheath (in this case the main sheath would not have a knife of its own, but only two knives inside the inner sheaths). Additional sheath 1 is of the same length as the main sheath (180 mm). It is stitched with a whip stitch; the flesh side of the leather faces outwards, which is typical of additional sheaths and linings. It was placed lowest, the additional sheath 2 on top of it, between additional sheath 1 and the front of the main sheath. Additional sheath 2, between the main sheath and the lining is shorter than these (160 mm). Also in this sheath, the flesh side of leather faces outwards. The material could be defined as calf.

Inside sheath **20**, instead of the actual sheath, there was a 155 x 18 mm leather piece, whip-stitched on the inner edges of the main sheath. One edge has been stitched to the main sheath's front, another edge to the main sheath's back. The leather piece divides the main sheath into two sections; a divider piece extends from the lower end to the upper end of the main sheath; a space for the additional knife is visible by the outlined decoration on the main sheath.

There are two additional sheaths without the main sheath in the research material, both from the Åbo Akademi excavation. Sheath **26** has not been preserved complete; only a lower part survives. Unlike in normal sheaths, the flesh side of the leather faces outwards. In seaming, whip stitch is used, which is not typical for sheaths of this material.²³⁷ The grain pattern is unidentified, but the leather could be on the basis of the softness of the leather sheep or goat.

Sheath **27** has been preserved in full length and is of goat leather. The dating by the find context is from the 14th century to the beginning of the 16th. Also in this sheath the flesh side faces outwards and in the stitching, a whip stitch has been used. There are stitch holes on the mouth-

end probably for attaching the additional sheath to the inside of the main sheath by stitching it by its mouth-end. Sheaths **15** and **17** have stitch holes around the slot. Whether these were for the attachment of sheaths, linings, or for some kind of flap to cover the additional knife is uncertain.

Sheaths **15**, **16**, **17**, **18**, **19**, **20**, **21**, **26** and **27** come from the Åbo Akademi excavation. Except **21**, they can all be dated to the period 'latter half of the 14th century – first half of the 15th century'. Sheaths **21** and **27** are from the context (M509), which contains material from the 14th century till the 16th century. Sheath **24** comes from the same quarter, but can only be give a dating 'medieval'. This is the case with sheath **23** too, which derives from the Hämeenkatu sewer construction, next to the Åbo Akademi quarter. Thus, there seems to be concentration of sheaths of this type in and around the modern Åbo Akademi quarter in the late 14th – early 15th century. An outsider among the sheath type is the sheath **22** from Hämeenkatu 17. It could be dated to the 14th century (see Chapter 5.4.2.4).

All the sheaths of this type in the research material represent the high quality in the manufacturing. The decoration of these sheaths is rich and the motifs varied. Besides the practical function, *a symbolic function of prestige, which has been typical for these sheaths in the Post-Medieval Period, could be assigned to these medieval sheaths.*

5.5.6 UNPROFESSIONALLY MANUFACTURED SHEATHS

I have categorized part of the sheath material as unprofessionally manufactured (**64** - **78**). Most derive from the Åbo Akademi excavation and Aboa Vetus excavation. One sheath (**64**) derives from the Itäinen Rantakatu sewer construction from the lower end of Nunnakatu. Most of the sheaths can be dated to the period 'latter half of the 14th century – first half of the 15th century' (**65**, **67**, **68**, **71**, **72**, **73**). Sheaths **74** and **78** can be dated to the first half of the 14th century. Sheath **69** is from the layer of the first half of the 16th century. The other sheaths can only be dated as 'medieval'.

The sheaths of this group differ from the higher-quality sheaths (professionally manufactured) by the *weak stitch types* (running stitch and whip stitch) and by an *uneven stitching*, in other words, their functional quality is low. Other aspects besides the functional quality are

the *lack of decoration*. If there is decoration, it is of *low quality*, executed by the owner. An unprofessional sheath has *simple cutting patterns* and the sheath is *manufactured without moulding*.

The material is calf in six cases. In five cases the grain surface of the leather is worn-out and the identification by the grain pattern has not been possible. It is possible that the high percentage of the worn-out sheaths reflect the use and type of sheaths and their knives. These could be, for example, the long period of use in working conditions and/or the use of low quality leather or even reused materials.

The thickness of the leather used varies between 1 mm and 1.5 mm in all but one case. Sheath **70** is manufactured from exceptionally thick 3 mm leather. Probably because of the thick leather, the sheath has lost its shape.

In stitch types, a running stitch and whip stitch prevail. *The shoemaker's stitch does not occur*. The running stitch and whip stitch occur in some cases on the same sheaths (**67**, **68**). The seaming starts with a running stitch and changes suddenly to a whip stitch (or vice versa).

I have used here the hypothesis that the *evenness in the stitching can be used as the indicator of the functional quality of the seam*.²³⁸ This is because the uneven stitching impairs the durability of the seam and by this means the functional quality of the sheath. The range of variation in the stitch lengths in individual, 'unprofessional' sheaths is between 2 mm and 9 mm and the average variation of stitch lengths in these sheaths is 4 mm.

As a comparison, the range of variation in the other sheaths is between 0 and 3 mm, while the average variation is 1 mm in these sheaths. The differences between the two groups are clear. In the unprofessional sheaths, the range of variation in stitch lengths is much higher than in other, 'professional' sheaths. The percentage distribution of the range of variation both in unprofessional sheaths and professional sheaths is presented in Fig. 38.²³⁹

It can be seen that the ranges of variation of 2 and 3 mm are overlapping in both groups. Ranges 0 and 1 mm do not occur in unprofessional group, while on the other hand the ranges 4 mm or longer do not exist on the professional group.

The decoration occurs in two cases. Sheath **68** has incised lining on the spine of the blade

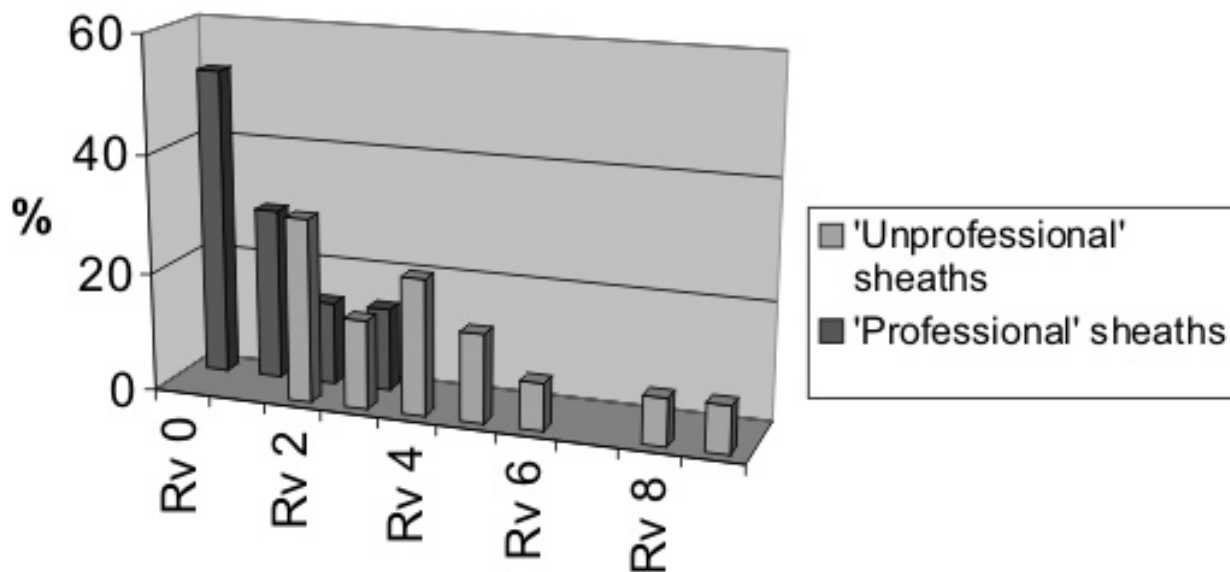


Fig. 38. The range of variation (Rv) in stitch lengths (mm) of the 'unprofessional' sheaths and 'professional' sheaths (n=137).

section. Sheath **70** has impressed lattice on the blade and a maker's mark (or more probably owner's mark) on the handle.

Of course, some sheaths can be of high quality and still manufactured by a skilled but unprofessional person. These sheaths are impossible to discern from professionally made sheaths. It is possible to discern only the sheaths of really low quality as truly amateurish. Despite the criteria described above, the distinction between professional and unprofessional remains intuitive and it is probably biased, not reflecting the real differences between the sheaths usually made by an average man and a professional sheath maker. Rather the division reflects the distinction between the sheaths of the lowest amateurish quality and the blend of sheaths of average professional/good amateurish quality and high amateurish/good professional quality.

5.5.7 SHEATHS FOR SPECIAL KNIVES OR TOOLS

In the research material, there are sheaths, which on the basis of their form have not been made for 'normal', straight back knives. These all derive from the Åbo Akademi excavation. Sheath **46** is symmetrically curved in its whole length. It could have been manufactured for a sickle or for a tool with a sickle-formed blade. The leather type cannot be defined by the grain pattern be-

cause of the wear, but it could be sheep or goat on the basis of its softness. Sheath **47** is curved more on the back than on the blade side. Only the tip part survives, but from the form it can be concluded that the sheath has been for the wide, curve-backed blade. The sheath is manufactured of sheep leather. Sheath **48** is slightly curved on the back. The blade section has been for a very narrow blade. Again, the grain surface is worn-out and the type of leather can not be defined.

Sheath **49** (Fig. 39) has a downwards curving blade section especially on the tip. This sheath could have been made for a shoemaker's knife.²⁴⁰ Sheath **50** has a curved handle section and a straight blade section. The form resembles a saw-like tool.

The same kind of worn-out grain surfaces that were noticed on the unprofessional sheaths can be noticed also in the sheaths for special knives or tools. The use of sheep or goat leather is a common feature too.

The stitch lengths in these sheaths are long, from 3 to 8 mm, which is more than the normal knife sheaths of this material. The variation of stitch lengths in individual sheaths is small, however. It extends from an even stitch length to only 2 mm. These sheaths could be described as carefully manufactured sheaths, maybe covers for important tools, not wished to get moisture and rust.

Fig. 39. Sheath 49, possibly for a shoemaker's knife.



All these sheaths come from contexts dated to the latter half of the 14th century – first half of the 15th century. This phase, especially the beginning of the 15th century, witnessed an intense building activity in the area.²⁴¹ I would like to connect these sheaths for tools to the activities in the area, either when the quarter was inhabited (building, wood-working) or to the craft activity of the settled inhabitants (leather-working, wood-working).

5.5.8 THE QUESTION ABOUT THE DAGGER SHEATHS AND THE SHEATHS FOR *PUUKKO*-KNIVES

Is it possible to distinguish sheaths for daggers from the material? The difficulty is partly caused by the lacking criteria for daggers. Knives and daggers had partly the same function. Neither did knife and dagger blades have specific differences in size. Between knives and daggers were also many intermediate forms.²⁴²

Despite these classification problems, one can sometimes see sheaths described as dagger sheaths in archaeological publications. Usually it is not clear, what the criteria for the definition are. There are exceptions to this. Blomqvist distinguishes dagger sheaths from sword scabbards on the basis of the thickness of leather. The sword scabbards of Lund were made of thin leather because of the wooden supportive plates inside. Dagger sheaths did not have wooden plates; thus they were made of thicker leather. Van Driel-Murray distinguishes sheaths for 'smaller blades' than in swords, with symmetrically tapering sides as dagger sheaths.²⁴³

With these criteria one can try to distinguish a group of sheaths from the research material. This group can contain sheaths for symmetrical blades with one edge but also with two edges, the so called dagger-knives (Ger. *dolchmesser*).²⁴⁴

Sheath 18 (Fig. 31) has already been discussed in Chapter 5.5.5 for its place for addi-

tional knife. This feature has occurred in knife sheaths as well as in dagger sheaths. The sheath could have on the basis of its symmetrical form, and especially the symmetrical blade-shaped moulding on the sheath front, contained a dagger (or dagger-knife if this term is approved).²⁴⁵ Close parallels to the form are the sheaths from Lund described as dagger sheaths. It is not mentioned in Blomqvist's publication, for what types of daggers these sheaths were constructed for.²⁴⁶ The sheath from Turku could have contained a ca. 20 cm long, symmetrical and probably one-edged blade with a wide base. Blades of this kind were typical for the ballock daggers. Daggers of this type have not been found in Turku town area, but there is one find from the Turku Castle.²⁴⁷

Are there sheaths for *puukko*-knives in the assemblage? If the criteria for a *puukko*-knife are the asymmetrical, straight-backed blade and the equal dimensions of handle and blade (usually both of a width of the palm (ca. 10 cm), there are. Sheaths 28 – 45 fulfil these criteria.

5.6 DISCUSSION ON SHEATHS

Sheaths were manufactured mostly of vegetable-tanned calf leather, in a lesser extent of other leather types of which vegetable-tanned goat, sheep and cattle leathers were identified. The use of calf leather prevails right from the first half of the 14th century onwards until the end of the Middle Ages. Of the thread materials hemp prevails, nettle and flax being other, less frequent materials.

Sheaths were mostly one-piece constructions, sheaths with additional pieces being exceptions. Only one sheath with lining has been noticed. Of the seam types closed seams prevail and butted seams are much less frequent. Back seamed sheaths are more frequent in the Åbo Akademi main building site material, side seamed sheaths being more frequent in the early

phases (the 14th century – the early 15th century). With the information of the other materials added, I interpreted the side seamed sheaths as the carriers of the tradition of the Early Middle Ages and beyond and slowly giving way to the back seamed sheaths during the Middle Ages.

The prevailing stitch type in the sheath material is a type called the *shoemaker's stitch*. This stitch type is considered to be the strongest seam type. The high frequency of the shoemaker's stitch in the sheath material refers to the high-quality seaming and thus to the probable professionalism in the manufacturing of these sheaths. Other stitch types found are *running stitch* and *whipstitch*. Riveted seams occur only on side seamed sheaths. By comparing the Åbo Akademi material to the other materials dated earlier, I interpreted the rivet seaming as an early phenomenon no longer common in Turku from the 15th century onwards. Thong seamed sheaths are not frequent. They have been used both for decorative seams and for coarse seaming.

Metal fittings are rare in the sheaths of the research material. If there had been metal fittings, there should be more imprints of these in the material. On the other hand, it is natural that the metal parts were detached from sheaths before discarding them. The metal parts were valuable and could well be reused.

About one fifth of the sheaths seem to lack the indication of the method of the suspension. It is possible that in some of these sheaths, the suspension system has been attached in a way which has left no visible marks on the sheaths. It is known, however, that sheaths could have been carried by only by tucking them behind the belt or through a purse. On the basis of the sheaths with suspension slots it could be found that sheaths were carried either in vertical or diagonal position probably hanging from the belt.

A type of modification, probably executed by the user, noticed in the knife sheaths of this study, is the slitting of the scabbard at the top. Other types of modification noticed were the making of suspension slots and repairing by stitching.

On the basis of the basic form a division into two groups was made. Of the sheaths most are more or less *asymmetrical* and a lesser part *symmetrical*. In a symmetrical sheath fits either a symmetrical, one- or two-edged blade but also an asymmetrical, one-edged blade, which fits with the blade in either direction.

A noteworthy feature in the sheath material is the great variation in forms and sizes. I distinguished different types of sheaths on the basis of their qualities. Types were distinguished either on the basis of the form, a certain feature in their appearance specific in each type, a functional property or functional quality.

From the many forms can be concluded that the variety in knife types has been great. The sheaths tell us of their content even without the knife preserved. In addition to the *puukko*-knives there have been several other forms. Some of the sheaths from the Åbo Akademi excavation I defined as belonging to special knives or tools, perhaps used in the activities in the quarter during the intense building phase in the early 15th century. Some of the sheaths can even act as the evidence of the crafts practiced in the area (e.g. sheaths for shoemaker's knives).

The development towards the domination of one general purpose-knife, *puukko*, seems not to have happened yet. Contrary to the ideas of medieval Finland having a special 'national' character, at least in this material of the town of Turku, it is not visible. International trends seem to prevail. Another case is, of course, the material culture of the rural areas, of which almost nothing is known when it comes to leather artefacts.

The sheath has the following practical functions 1) to protect the blade of the knife from physical or chemical damages (from moisture and nicks), 2) to protect the person from the blade, 3) function as the case for the knife, carried with. The basic requirements for the sheath are the following: 1) it has to keep its form, 2) it has to be of right size to hold the knife firm but not too firm, to be easy to draw, 3) the suspension has to be firmly attached, but the sheaths must still move freely.

With only sheaths preserved the last two requirements cannot be evaluated. Still, it could be said that the sheaths of this material have done well their duty. Only circa ten per cent of the sheaths were distinguished as functionally low quality. The rest of the sheaths are good or very good functional quality. In these good quality sheaths a small group of maybe ca. 5 per cent of the whole sheath material could be described as top-class artefacts. The difference can be seen in decoration, not in functional quality, which is usually as good in decoratively 'mediocre' and even low-quality sheaths as in top-class artefacts.

About half of the sheath material has been decorated either with tooling the leather or with other decoration methods. The most frequent leather tooling techniques have been incision, engraving and impression. Less frequent techniques were punching, stamping and embossing. Of the motifs, geometric and foliate motifs are most frequent. Other motif categories are types of plant decoration, interlace decoration and zoomorphic decoration.

The discrepancy between the low quality decoration and high functional quality in same sheaths was discussed in Chapter 5.4.3. Perhaps

the functionality was more important than decoration, which only has a symbolic function. The modern esthetic views of the researcher can confuse the guesses of what a medieval Turku citizen was thinking when decorating the sheaths. In any case, from the point of leather working quality, it seems like the decoration was in most cases done by the different person than the sheath i.e. the user of the sheath. The 'handprint' of the user can be seen, for example, in the sheaths, made by the owner himself, and also in crude reparations and modifications noticed in some artefacts.

6. SCABBARDS

There are 36 artefacts in the material which I have categorized as scabbards. All of them derive from various places in the medieval town area of Turku. Scabbards with a certain medieval dating have not been found in the Turku Castle. In the following the scabbards are analysed, starting from the materials, dimensions and forms of scabbards and then moving on to the composition and its details. After the discussion of the decoration, scabbards are placed to their find contexts and their dating is discussed. The suggestions for the criteria of defining the artefacts as scabbards on the basis of their properties are also presented.

6.1 MANUFACTURING TECHNIQUE

It is customary to sheath sword blades in a rigid housing in order to protect them, and those wearing them, from harm. Like in the preceding Iron Age, in the Middle Ages the scabbards were made of metal, leather or covered wood. The suspension belt of leather was an integral part of the scabbard. The most important metal furnishings were the chape on the tip of the scabbard and the mouth-band on the top of the scabbard. Additional mountings could occur too.²⁴⁸

6.1.1 MATERIALS OF SCABBARDS

In the scabbards of covered wood the cover material could be of leather, skin, textile or combination of these materials.²⁴⁹ On the basis of the analysed leather types of medieval scabbards found from archaeological contexts, it is known that calf or cattle leather (bovidae) was mostly used for scabbards. Sometimes goat or sheep leather (caprinae) was used but this seems to have been exceptional.²⁵⁰

It has been possible to define the leather type of the scabbards of the research material in 33 out of 36 cases by the grain pattern of the leather surface. *The leather used is invariably calf.* The

leather is most probably vegetable-tanned in all cases. It can be assumed that otherwise the scabbards would not have been preserved in the moist cultural layers. It is possible that scabbards were also made of untanned or alum-tawed skins. However, untanned skins or skins tanned by alum-tawing decompose readily in a moist environment, so they are not represented in the research material of this study.²⁵¹ On the basis of the Turku material and the parallels from other areas, it can be suggested that *an item made of other leather type than calf or cattle has a high probability of not being a scabbard, at least of the standard quality.*

In the research material, the thickness of the scabbard leathers varies between 1 mm and 1.5 mm. The lamination of leather is not very frequent in this scabbard material.²⁵² The reasons for the thinness of scabbard leathers are discussed in Chapter 6.1.3.1.

6.1.1.1 MATERIALS OF THREADS

There was only one uncertain scabbard fragment, from which a thread sample could be taken (171). According to the analysis the thread fibres are of nettle (Appendix 2). Why have the threads not been preserved in scabbards while in the sheaths they have been extremely well? The problem is discussed in Chapter 8.3.

6.1.2 DIMENSIONS AND FORMS

All the scabbards of the research material are fragmentary in one way or another. 77 per cent are cut, torn, or cut & torn fragments, missing both the mouth-end and the tip. The reasons for the frequent cutting of the scabbard leathers are discussed in Chapter 8.4.

Could it be possible to use length in distinguishing the scabbards from sheaths? If there were any knowledge of the lengths of the knife blades or sword blades, which could in some way be connected to the sheath and scabbard

material (for example, literary sources discussing the lengths of blades or, for example, knives or swords from the same excavation as the sheaths and scabbards), then sheaths longer than the maximum length of knife blades could be categorised as sword scabbards. In the Middle Ages, there were statutes concerning the lengths of knife blades and sword blades. Groenman-van Waateringe has mentioned the charters for the guilds of Flensburg of the year 1514 in her analysis of the Svendborg sheaths and scabbards.²⁵³ Schnack has based her distinction on the longest knife blades, 30 cm, found in Schleswig. She classifies the sheaths over 35 cm long as sword scabbards.²⁵⁴

None of the scabbards in the research material of Turku has been preserved in full length. There are only five scabbard fragments, the length of which is 30 cm or more. Only one scabbard fragment exceeds 35 cm with its 42 cm length. Thus, the distinction between knife sheaths and sword scabbards must be in most cases based on other attributes than length.²⁵⁵ As Groenman-van Waateringe has written, "Distinction between knife and sword scabbards seems in some cases rather arbitrary, when based on fragments."²⁵⁶

On the other hand, it has been possible to measure the maximum width in 11 cases. The maximum width is ca. 45 mm in one case, ca. 50 mm on eight cases and ca. 60 mm in two cases. The obvious consistency in scabbard widths can be understood as some kind of standardization in scabbard manufacturing, which has most probably a direct connection to the sword dimensions. Van Driel-Murray discriminates in her study of the material of Leiden (Southern Netherlands) between scabbards for swords with a broad blade of more than 5.5 cm wide, intermediate ones of ca. 5 cm, and narrow blades of ca. 4 cm.²⁵⁷ According to this division most scabbards of Turku would be for blades of 'intermediate' width and a smaller proportion for narrow or broad blades.

On three scabbards the tip-end is preserved. On the first example the tip is blunt (**178**). The tip has been stitched with a transverse row of flesh/grain stitches across the tip-end. On the other two fragments the tip-end is rounded. These scabbards are seamed with the centre-back seam which continued in one scabbard 30 mm on the front face (**184**), and on the other scabbard, 90 mm on the front face (**208**).

There are six scabbards on which the mouth-end remains. On four scabbards the mouth-end

is horizontal (**183, 186, 200, 211**). On two scabbards the mouth-end is pointed (**204, 205**).²⁵⁸ In addition to the appearance, the pointed mouth-end had a functional meaning. It gave additional support and cover and helped in guiding the blade into the scabbard.²⁵⁹

6.1.3 COMPOSITION

The scabbard leathers of Turku have been made from a piece of leather, folded together with the long sides towards the back and there sewn with a thread. Riveted seams have not been found. The form of the leather piece is either straight-edged or tapering to the tip. The grain side of the leather is invariantly outwards.

In the medieval material of Schleswig, the scabbard leather is often composed of an upper component (mouth-end part) and a lower component (tip part). Scabbards composed of two components were found from the layers of the 13th century and the 14th century.²⁶⁰ In the Turku material, there seems to be one example of this kind of composite construction too (**187**). The fragment is a lower component, the tip-end of which is cut. The shape of cutting could relate to the detaching of the chape from the tip of the scabbard. There has been a closed seam facing inwards on the top end of the component. The part was originally stitched to the upper component with the shoemaker's stitch. The scabbard can be dated by its find context to the latter half of the 14th century or to the beginning of the 15th century.

6.1.3.1 THE QUESTIONS OF THE INNER STRUCTURE OF SCABBARDS AND LININGS

Ragnar Blomqvist has mentioned that the medieval scabbard leathers of Lund were made of leather so thin that the leather scabbard alone would have been of no support for the blade. According to Blomqvist, the leather fragments found are probably remnants of the leather covers for wooden scabbards. Inside some of the sheaths, wooden parts were found and Blomqvist assumes that all the sheaths had originally inner parts of wood.²⁶¹ The assumption of wooden scabbard plates is accepted among many researchers even if the wooden parts are very seldom found in excavations.²⁶²

While discussing the problem of the inner structure and materials of scabbards, the two

functions of the scabbard must be kept in mind. Firstly, the hard materials are to protect the sword from nicks. Secondly the hard materials protect the inside of scabbard from cuts by the blade. In the 14th and 15th centuries, sword blades were made of hardened steel. Thus, it would not have been necessary to use wooden scabbard plates for the protection of the blades. However, the inside of a scabbard still had to be protected from cuts. There are no cuts on the insides of the scabbards of the research material; obviously some material was used for protection.

According to Marquita Volken, there would not probably have been space for the blade in the scabbard leathers with the dimensions, for example, of the Turku material, if the wooden plates were used. According to her, scabbards with wooden plates are usually quite a bit wider than the blade whereas the scabbard leathers of 13th to 15th centuries are in most cases less than 5 mm wider than the average blade. This seems to be the case in the Turku material.

According to Volken, it would have been very difficult, if not impossible to make long wooden plates of only 2 mm thick or less, the usual thickness of the scabbard plates, to fit the scabbard and which also would have protected the inner sides of the scabbard well. On the other hand, the alternative that the leathers would be only covers for the metal scabbards would not make sense because a metal scabbard would not need cover. The metal, being more prestigious material than leather would be more desirable surface material.²⁶³

A natural choice of the material to both fit the inside of the scabbard leather and to be hard enough for protection of the cover would be untanned skin. According to Volken, it is literally impossible to cut and quite hard. Also the missing of the inner structures of the scabbards can be explained by the material. Untanned skin does not survive wet burial. Untanned skin would have to be covered with something more water and grease resistant material, so the tanned leather would be a natural choice.²⁶⁴

Another interesting question is the possibility of linings in scabbards. There are scabbards with stitches around the mouth-end in the research material (183, 186, 200, 211, 204). Different theories have been presented by researchers of the purpose of stitch holes of this kind. According to Schnack, the stitches around the mouth-end would be for the attachment of the edging.²⁶⁵

According to Cameron, the stitches could be decorative but more probably for the attachment of a lining.²⁶⁶ It is known that scabbards were often lined with skin or fur. Textile, fleece or bast fibres were sometimes used.²⁶⁷ Whatever the purpose of the stitches around the mouth-end is, there is concrete evidence for the possible linings in the research material too.

In one scabbard from the Aboa Vetus excavation, there were noticed fibres pressed firmly against the flesh side of the scabbard (209). The fibres run horizontally and vertically with the vertical fibres (which are also longer) under the horizontal ones. The horizontal fibres extend to the edge of the scabbard between the stitch holes. The fibres have originally been stitched 'over' by the threads, used in seaming the scabbard. According to the analysis (Appendix 2), the material is hemp.

Weave would be a wrong term to describe this kind of lining. It is more like layers of fibres running in two directions but not interlacing with each other like in weave they would. The fibres are pressed against the leather very firmly. Probably some kind of adhesive was used in attachment of the fibres.²⁶⁸ However, if it is assumed that this scabbard originally had wooden scabbard plates or an inside of untanned skin, the fibres would have been between the wooden plates or skin and the leather cover. Why would this be? One answer could be that the good quality of hemp in keeping the moisture out was used in protecting the inner parts. Both wood and especially untanned skin are sensitive to moisture.

6.1.3.2 SEAMS AND STITCHES

SEAM AND STITCH HOLE TYPES

The seam type has been identified in 24 out of 25 scabbards of the Åbo Akademi material. In one case the seam is torn and the definition has not been possible. In 23 out of 24 cases the seam is a *closed seam facing outwards with flesh/grain stitches*. The only exception to the closed seam is an uncertain scabbard fragment, which has a butted seam with edge/grain stitches (177). On all the seven scabbards from the Old Great Market (202-208) and on the scabbard from the Aboa Vetus excavation (209) the seam type is closed. Two scabbards from the Itäinen rantakatu survey (210, 211) and the scabbard from Hämeenkatu 17 (131) have closed seams too.

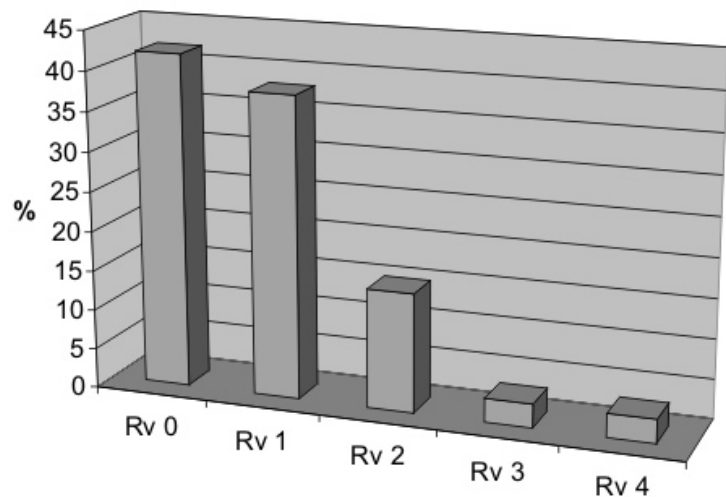


Fig. 40. The percentage distribution of the range of variation (Rv) in the stitch lengths (mm) of the scabbards (n=35).

The obvious reason for the predominance of the closed seams is the thinness of leather used in manufacturing the scabbard leathers. It is difficult or practically impossible to make a durable butted seam with edge/grain stitches for scabbards with the thickness of leather varying between only 1 mm and 1.5 mm.²⁶⁹

PLACING OF THE SEAMS

It has been possible to define the placing of the seam in 18 examples out of the 25 scabbards (72 per cent) from the Åbo Akademi excavation. In these cases, *seam is invariably on the back*. In 14 cases, it has been possible to define the placing of the seam even more accurately to centre-back. Of the scabbards from the Old Great Market Place, definition has been possible on six scabbards out of seven. All have a centre-back seam. Both the scabbards from the Itäinen rantakatu sewer construction survey and the scabbards from the Aboa Vetus excavation and Hämeenkatu 17 have centre-back seaming.

Side seams have not been noticed. Thus, the placing of the seam (side seam) can be used as a negative indication of an artefact being a scabbard. In other words, *an item with a side seam is most probably not a scabbard*. The placing of the seam on the back of the scabbard has been noticed on medieval scabbards of Riga, Oslo, Leiden, Svendborg, Kastelholm, Århus and Schleswig.²⁷⁰ Seaming on the back of the scabbard seems to have a long tradition. According to Esther Cameron, scabbard leathers of ninth- to eleventh century England have a centre or off-centre seam on the back face, never on the edge.²⁷¹

STITCH TYPES AND STITCH LENGTH

It has been possible to define the stitch type in 24 out of 25 scabbards (96 per cent) from the Åbo Akademi excavation. *The stitch type used is invariantly the shoemaker's stitch*. This stitch type can be noticed in six out of the seven scabbards from the Old Great Market Place excavation, on the scabbard from the Aboa Vetus excavation and on the two scabbards from the Itäinen Rantakatu survey.²⁷²

Because of its frequency both in historical times, and nowadays in knife sheaths, too, the shoemaker's stitch alone cannot be used as an indicator of an artefact being a scabbard. However, because the stitch type prevails in scabbards, other stitch types can be used as a negative indication of an artefact being a scabbard, or at least, of the standard quality. In other words, *an item with a stitch type other than the shoemaker's stitch is with a high probability not a scabbard of the standard quality*. It can be assumed that the shoemaker's stitch was used in scabbard and sheath making by professionals, but also by *capable amateurs*. Thus, the shoemaker's stitch alone does not tell us if the scabbard was of professional or domestic origin. On the other hand, other stitch types relate to the possibility that the item might not be professionally made.

In addition to the stitch type, the range of variation in stitch lengths in individual scabbards can be used as an indicator of functional quality. This method has already been used for sheaths in Chapter 5.5.6. Even if the stitch lengths between different scabbards vary between two and 10 mm, the variation in stitch lengths in individual scabbards is much smaller (Fig. 40). The measur-

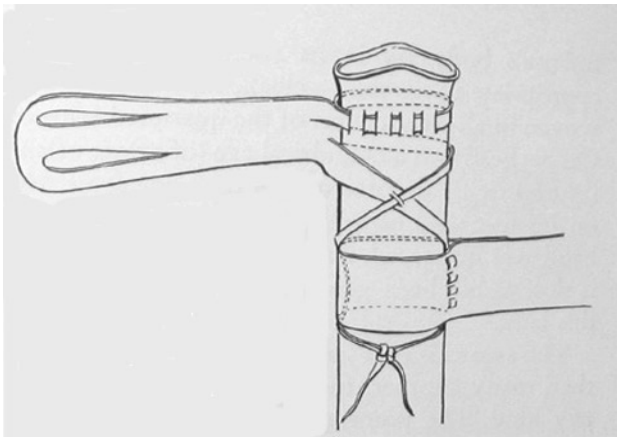


Fig. 41. The principle of fixing the belt to the scabbard.²⁷⁵

ing has been possible in 35 cases. In 41 per cent the stitch length is equal on the whole scabbard length, in 38 per cent the variation is one mm. In 15 per cent of the cases the variation is two mm. Only in two cases (six per cent) the variation in stitch lengths exceeds two mm. Such evenness in stitch lengths implies the use of some kind of ruler in marking the places for stitch holes. More important, the even stitch lengths relate to the *high quality seaming and by this means to the probable professionalism in scabbard manufacturing*.

6.1.3.3 SUSPENSION MODES

Ewart Oakeshott has distinguished two basic methods of suspension on medieval scabbards based on the archaeological finds, pictorial evidence and monuments and preserved swords with scabbards (mostly from churches). The first suspension mode is sometimes called ‘Type Naumburg’ by historians and archaeologists. The term derives from sculptured donator figures in Naumburg cathedral equipped with swords and scabbards. In this suspension mode, the scabbard belt is composed of two parts. A short, broad flap of leather was fixed below the mouth of the scabbard going across the front of the body from left to right.

The second, a broad belt was attached lower on the scabbard. This belt passed round the wearer’s body from right to left. The free end of the belt was divided into two tails while the flap was provided with two slits. When the belt was girt round the hips, the two tails were drawn through the slits in the flap in front and tied in a knot. The knotted belt was used in Scandina-



Fig. 42. Slitting on the mouth-end of scabbard 186.

via and German countries but was not popular in France, England or in the south of Europe, where an ordinary buckle replaced the slitted flap.²⁷³ There were various ways by which the belt was fixed on to the scabbard, but all of them were modifications of the same principle (Fig. 41). Sometimes there were diagonal straps between the main bands which held the ends of the belt to the scabbard. They prevented these from sliding apart.²⁷⁴

This mode of suspension was replaced gradually by another method from the first half of the 14th century onwards. The scabbard was now furnished with mountings placed at intervals along the length of the scabbard. The mountings had metal rings attached, where the leather straps of the belt were fixed. There have been transitional forms between the earlier and the later mode too.²⁷⁶

As van Driel-Murray has written, the suspension modes either leave traces on the scabbard leather or do not, depending on the way the belt was fixed to the scabbard leather.²⁷⁷ On some scabbards of this study, there are traces, which relate to the possible suspension mode. On two scabbards, there remains a dense slitting near the mouth-end of the scabbard and a slit below these (186, Fig. 42 and 191). This relates to the ‘Type Naumburg’ mode of suspension, where the shorter flap was sometimes attached to the scabbard leather through this kind of dense slitting and where the diagonal strap keeping the belt parts together passed through the slit below.²⁷⁸ On three other scabbard fragments, there are slits, more difficult to interpret but in any case probably connected to the scabbard suspension (192, 200, 211).



Fig. 43. Impressed lines on the front edges of the scabbard 178.

6.2 DECORATION

6.2.1 DECORATION TECHNIQUES AND MOTIFS

The prevailing technique used in decorating the scabbards of this research material has been the tooling of leather by impression. This method has been used to draw lines, which are sometimes connected to form different kinds of geometrical motifs. The most frequent type is, however, the simple, longitudinal lines, which are discussed in the following chapter.

6.2.1.1 THE QUESTION OF IMPRESSED, LONGITUDINAL LINES IN SCABBARDS

In publications discussing medieval scabbards, longitudinal lines, impressed on the surface of the scabbard leather, have sometimes been noticed. They have been considered as a distinguishing element between knife sheaths and sword scabbards. Thus, the knife sheaths would not have these lines but they would be particular and common in sword scabbards.²⁷⁹ Longitudinal, impressed lines have also been noticed in the scabbards of Turku. In the following, their function and the hypothesis that they could be used as indicators for sword scabbards are discussed.

Lines of impression have been noticed in 19 out of 34 scabbards. Lines next to the seam are most common. Every scabbard with an impression line has a line on one or both sides of the seam. In addition to the lines next to seam, nine scabbards also have a line along scabbard edges either on the back face or on both faces (Fig. 43). Because of the fragmentary state of the scabbards in question, it is not possible to make conclusions about the frequency of the lines following the edges.

The material from medieval Svendborg is a good example of the variations in placing the lines. In addition to the scabbards with lines along both edges on the front face or both faces, there are examples of scabbards with impressed lines only along one edge, but on both sides of the scabbard, and scabbards with lines along both edges, but only on the back side.²⁸⁰ This phenomenon of impressed lines seems to be geographically widely spread.²⁸¹ Even in publications without a discussion of this matter but with figures of scabbards, these lines can be seen.²⁸² Usually these lines have been considered decorative elements,²⁸³ or their function is not discussed even if they are noticed and otherwise discussed.²⁸⁴

The method of making these impressed lines has been the use of a *creaser*, a common tool in leather working, which also occurs in the Åbo Akademi main building site assemblage.²⁸⁵ Creasers are used in leather working for marking the places for the stitch rows, for strengthening the edges of leather by compressing the leather structure and for decorative purposes. The creaser was pressed on the leather and dragged to form a line. The tool could be heated when a darker and deeper line was wanted.²⁸⁶

In addition to the purely decorative function, the lines could have other functions associated to the scabbard manufacturing. Creasing the leather makes it compact and firms it up. This action may be useful when folding the leather around the form. Once the leather is compacted, it is 'set' and will not wrinkle or twist as much. If the leather was glued to a support then a creased line would help it set into the glue.²⁸⁷ The purpose of the lines on the scabbard edges could be just this, *to hold the form when the scabbard leather was folded*.

Some of the lines on the edges on the scabbards are dark and deep, probably made with a heated creaser (Fig. 43). This would have been unnecessary if the lines were not wanted to show. Thus, in addition to the functional purpose, they seem to have a decorative function. On the other hand, lines next to the stitching are in most cases barely visible. They can be remains of the process when the seam was pressed down and the awl marks were cleaned at the same. The straight line along the stitches made the seaming and stitching work look neater.²⁸⁸ In marking the actual stitch line, a thumbnail was traditionally used. According to Marquita Volken, a creased line ruins the softness of the leather and makes the stabbing with the awl difficult.²⁸⁹

The longitudinal impressed lines seem to be common in Turku scabbards as in the other examples from other parts of Europe. They are missing from the artefacts, categorised as a knife sheath in this study by their properties. Thus, it can be concluded that *a scabbard can be recognized by longitudinal impressed lines either next to the seam or along the edges, sometimes also on the middle.*

6.2.1.2 OTHER DECORATION MOTIFS

The scabbards from the Åbo Akademi excavation lack other decoration motifs than the impressed lines discussed. The scabbards from the Old Great Market Place and from the Itäinen rantakatu sewer construction have other kinds of motifs too.

A common motif on the scabbards from the Old Great market Place is a *lozenge*. It appears in four scabbard fragments (203, 206, 207, 208). All the lozenges are composed of impressed double lines and they are ‘split’ by the longitudinal line or double line on the middle of the scabbard. In most cases the lozenges seem to form a continuous ornament. In one case the space between the double lines of the lozenge is filled with engraved dots. In this scabbard the lozenges change to chevrons on the tip-end (208). Such chevron decoration can be seen as continuous ornament on a scabbard from Örebro.²⁹⁰

Close parallels to the continuous lozenges can be found from the Lund scabbards from the 13th and 14th centuries and from Svendborg from the late 13th century.²⁹¹ Two of the scabbards from the Old Great Market Place with lozenge decoration can be dated by their find context to the first

half of the 14th century and the other two to the period 1350 – beginning of the 15th century.

On one of the fragments from the Old Great Market Place, there is an impressed, transverse double line across the front, filled with engraved dots (204). Three lines branch downwards in different directions from this line. In addition, there are three engraved dots in an arrowhead-like formation at the ends of the outermost lines. On a fragment from the same scabbard, a triangle, formed of three impressed lines, running parallel can be seen. On a scabbard from the Itäinen rantakatu sewer construction, there is an impressed star-motif and part of another (210).²⁹² Star-motifs can be seen, for example, on scabbards from Schleswig.²⁹³

6.3 DISCUSSION ON SCABBARDS

The attributes found to be typical for the scabbards were material (calf leather), the placing of the seam (on the back, not on the side), the stitch type (shoemaker’s stitch), a small range of variation in stitch lengths, dimensions and forms (usually straight edged or only slightly tapering). Dimensions and forms would be the most obvious attributes if whole items were preserved, but in the archaeological material they can rarely be used because of the usual fragmentary condition of the scabbards. Of the attributes, only the impressed lines seem to occur only on scabbards, not on sheaths. Other attributes occur also on sheaths.

Thus, most of the attributes can be used only as of a certain kind of negative indications. If the attribute differs from the expected, it can be doubted if the item in question is a scabbard even if it cannot be confirmed. Because of this, the attributes found to be typical of scabbards can be considered to be representative when they appear together on the same artefact, not so much when they occur separately. In addition to being distinctive features, the attributes seem to indicate even quality and probably professionalism in scabbard manufacturing.

Decoration seems to be more common in the scabbards from the Old Great Market Place than from the Åbo Akademi excavation even if the material from the Åbo Akademi excavation is larger (25 vs. 7 scabbard fragments). The reasons for this can be many but the most obvious could be chronological, the scabbards from the Old Great Market Place being older.

7. GRIP COVERINGS AND RAIN GUARDS

7.1 GRIP COVERINGS FROM SWORDS AND DAGGERS

Grip coverings of leather were used in swords, as well in daggers with grips of wood or bone. The hilt was covered with leather. The leather covering could be wound with metal wire to form ribs on the hilt or similar ribs could be carved on wooden hilt and the hilt covered with leather. The purpose of the ribs formed was to improve the arm bearer's hold from the hilt. From archaeological contexts, artefacts of this kind have been published from Leiden and Amsterdam, the Netherlands, and Konstanz, Germany.²⁹⁴

From Leiden, 23 grip coverings mainly from the first half of the 14th century have been found. On the coverings of Leiden, the ribs are visible on the leather. According to van Driel-Murray, they have been formed either by winding the leather cover with wire or pressing the leather on a carved hilt. All of the coverings are of cylinder form. After the year ca. A.D. 1350 the coverings of the 'bottle' form become common, the coverings of 'cylinder' are the earlier type. The length of the coverings varies from 11 to 24.5 cm. Five examples are longer than 17 cm. According to van Driel-Murray these probably have belonged to swords that could be gripped with one or both hands (not to be confused with the later two-handed swords).²⁹⁵

From Amsterdam there are published two grip coverings dated to the last quarter of the 13th century and to the last quarter of the 14th century or the first quarter of the 15th century. The first one has transverse ribs on its whole length and tassels on the other end. The other one is decorated with impressed foliage, three-lobed flowers and chevrons.²⁹⁶

From Konstanz (Fischmarkt excavation) come five grip coverings from the 13th and 14th centuries. Two coverings are preserved in full length. Their length is 17.5 cm and 21 cm. According to Schnack, the longer one could be

from a sword which could be held with two hands. The coverings were originally bound with metal wire, which could be twisted. The purpose of the transverse ribs formed between the spaces between the wire was probably to improve the hold of the hilt.²⁹⁷

In the Turku material there are eight artefacts, which I have categorized as grip coverings (**129**, **130**, **212-217**). The manufacturing technique has been the same in all of these coverings. They are made of one piece of leather now flat and folded up, but originally the form has been rounded when the covering has been wound around the hilt. The coverings have been stitched with a whip stitch; there are thread imprints and flesh/grain stitch holes. The seam type has been butted (or lapped). The ridge formation of the closed seam would probably be a disadvantage on the handle.

There are four coverings, the original length of which has been preserved. First of these is from the Old Great Market Place (**214**) and is 130 mm long. The width is 42 mm on the lower end and the covering tapers to 30 mm on the upper end. The mouth-end turns a little bit outwards, most probably because it was pressed against the pommel. The lower end, which is roundly triangular presumably extended to the sides of the guard. On the surface of the leather, there is a dense, impressed lining, probably the imprint of the wire, wound around the leather cover. The covering can be dated roughly to the Middle Ages.

Another covering (**215**) from the Old Great Market Place is 130 mm long. The width is 40 mm on the lower end and the object tapers to the 25 mm on the upper end. Again, the form of the upper end shows that it was pressed against the pommel. This covering is decorated with stamps of three-petalled flowers. There is a transverse moulding on a lower half of the covering, probably for the decoration and to improve the grip. The covering can be dated to the second quarter of the 14th century.

The third covering (**217**) is 150 mm long. It narrows on the middle. The ends are 60 mm wide and the middle part ca. 40 mm wide. The covering has transverse mouldings on the middle and on the ends. It is decorated with impressed motifs, which are probably half-leaves on both sides of the middle line. The fourth covering comes from Hämeenkatu 17 (**129**). It is 165 mm long. It is of cylinder-form and the surface is covered with transverse impressions and ridges between these.

The length of the first three coverings (**214**, **215**, **217**) fit well to the hilts gripped with one hand. Whether the coverings are from daggers or swords is difficult to say. The flower decorations of **215** and **217** could relate to the dagger hilts in the period when daggers were carried both by military men and civilians as part of the dress.²⁹⁸ The length of covering **129** could relate to the sword handle gripped either with one or two hands.

The covering **212** comes from the Åbo Akademi excavations and can be dated to the latter half of the 14th century or to the 15th century (Fig. 44). It is 178 mm long and is cut in its other end even if the length could be near the original. The width is 45 mm on one end and the object tapers to the 35 mm width on the other end. The length points to the hilt which could be grasped with both hands; thus the covering is for a sword hilt.²⁹⁹ The covering is decorated with transverse stripes, impressed on the surface of the leather. Between these there are similar stripes but they seem to be carved instead of impressed. In addition to the decoration, these stripes had a function of improving the grip.

From the Aboa Vetus excavation comes a fragment of the covering, similarly decorated (**213**, Fig. 44). This can be dated roughly to the Middle Ages, but the similarity of the peculiar decoration with **212**, even if slightly more carelessly executed, could relate to the same dating or even to the same workshop. The fragment **130** from Hämeenkatu 17 has similar impressed stripes.

From the Old Great Market Place comes one more grip covering (**216**). It is a small fragment, which can be dated to the ca. 1350 – the beginning of the 15th century. There are transverse ridges on the surface of the leather. These have been produced by the twine or wire on the flesh side of the leather. There are impressions of such on the flesh side of the covering. The covering has



Fig. 44. Grip covering **213** from the Aboa Vetus site (on the left) and **212** from the Åbo Akademi site (on the right).

probably been pressed on a wooden hilt, which was wound with twine or twisted wire.³⁰⁰

The material of **129**, **212**, **213**, **216** and **217** could be grouped together. All of these are made of calf leather, ca. 1 mm thick. That is slightly thinner material than what was used, for example, for the knife sheaths.

7.2 RAIN GUARDS FROM SWORDS

The purpose of the rain guard as part of the sword is to cover the area where the bottom of the grip attaches to the guard. The rain guard covers the mouth-end of the scabbard and prevents rain from running into it, hence its name. Rain guards could be of fabric or leather. Sometimes the leather guard was equipped with textile flap falling over the mouth-end of the scabbard.³⁰¹

The leather guards have been found from the same contexts as grip coverings, that is Leiden (four examples), Konstanz (four examples) and probably also in Kołbrzeg (two examples).³⁰² The manufacturing technique is the same in all of these guards. The guard is made of one piece of leather, folded and stitched on the side. Openings for the guard remain on both sides. Also upper and lower ends remain open for the hilt.



Fig. 45. Rain guard 223 from the Old Great Market Place excavation.

The rain guards of Leiden are decorated with engraved transverse lines, herringbone motifs, hatching, and net-like motifs.³⁰³ The rain guards of Konstanz are decorated with transverse lines and stamps.³⁰⁴ The guards of Kołobrzeg are decorated with transverse lines, cross-hatching and ring-dots.³⁰⁵

From the Old Great Market Place come two rain guards (**218, 223**) (Fig. 45). From the groundwork pit in Uudenmaankatu 5a comes one rain guard (**224**). Guard **218** one can be dated to the first quarter of the 14th century and **223** to the period ca. 1350 - the beginning of the 15th century. Guard **224** can only be given a medieval dating.

All three rain guards are made of one piece of leather, which is folded and stitched on the edge/edges. There is an opening formed for the guard of the sword on both sides. All pieces have

simple decoration, formed of impressed, transverse lines.

7.3 DISCUSSION ON THE GRIP COVERINGS AND RAIN GUARDS

Both the grip coverings from swords or daggers and rain guards from swords are formerly unknown artefacts in the Turku material. It can be noted that they are not common in other European countries either. One explanation for the lack of these finds could be that they have not been identified. Grip coverings can easily be regarded as knife sheaths, the rain guards as some kind of 'cases'.³⁰⁶

Similar situation prevailed for a long time, for example, with slings. The first sling from an archaeological context in Europe was not published until 1983.³⁰⁷ It is true that slings were published among other leather finds; however, their function was not known. In a publication, dealing with the leather material from Svendborg, Denmark, Willy Groenman-van Waateringe proved that many finds from different areas of Europe were in fact slings. Earlier they were thought to be, for example, parts of belts or straps, or hair slides. Suddenly, slings started to be 'found' from all over Europe.³⁰⁸

I would in this context emphasise the importance of publishing the unidentified objects. The identification can happen later and be cumulative when one object somewhere is identified, as was the situation with slings.

8. THE MAKERS AND USERS OF THE ARTEFACTS

8.1 THE DOCUMENTARY EVIDENCE OF LEATHER ARTISANS IN MEDIEVAL TURKU

In the following, craftsmen, mentioned in documents and with probable relations to leather working in Turku in the Middle Ages are discussed. The survey is based on the research literature.

The craftsmen in medieval Turku are only exceptionally known from professional contexts. In most cases the artisans are identified by their names only. Folke Lindberg, who has studied the artisans in medieval Stockholm, has noticed that in Stockholm the artisan name could be inherited and changed to a family name, regardless of if the son continued his father's profession or not. Some merchants, for example, had an artisan name.³⁰⁹ In Turku, in the middle of the 16th century, there were many burghers with artisan names, who took part in foreign-trade. On the other hand, an artisan could have a patronymic name.³¹⁰

Thus, the artisan name does not necessarily mean that the person in question practiced the profession his or her name would indicate. On the other hand, many artisans with a patronymic name can be left unnoticed.³¹¹ Proving the artisan status would presuppose that a person was mentioned in a context where he or she is functioning in profession. Mika Kallioinen has supposed that in medieval Turku, all artisan names do not necessarily refer to artisans, practising their profession. On the other hand, he has stated that the question must be left open, because in practice, it is impossible to solve more accurately.³¹²

On the whole, it can be said that the mentions of the leather artisans are very sparse. There are three mentions of shoemakers within the medieval period. *Thetmarus Sutor* is one of the ratifiers of the transaction in the year 1336, when a burgher from Turku, Gerhard Paris, bought an estate in Hirvensalo.³¹³ Two shoemakers, *Albrecht* and *Hollinger*, are mentioned among the

twelve persons, six of them craftsmen, sealing the letter for Queen Filippa and King Erik (XIII) the Pomeranian, in the year 1425.³¹⁴ The letter was associated to the disagreements probably connected to the re-strengthening of the status of the German population in Turku.³¹⁵

Another sort of a craftsman is *Claus Beltare*, who is one of the persons ratifying the sale of an estate of Göbelin Lon, a burgher in Turku, in the year 1347.³¹⁶ *Laurens Svärdslipare*, a burgher from Turku, is mentioned in 1488, when he ratified the selling of his property in Turku in front of the Stockholm's council.³¹⁷

What conclusions can be drawn from the above-mentioned information? Even if the sources do not refer to the practising of professions, keeping in mind the source criticism of names, some indirect inferences of the crafts can be made. The mention of a shoemaker in Turku as early as the year 1336, tells us of the necessity of this craft and of its old traditions. The mention of Albrecht and Hollinger in the same document in 1425 indicates that at that time, there was already more than one shoemaker working in Turku. Kallioinen has proposed that the shoemakers could well have been the largest craft in Turku.³¹⁸

Beltmakers (Fi. *vyöntekijä* or *pelttari*, Swed. *bältare*, Ger. *Gürtler*) were craftsmen who manufactured belts, mountings, buckles, brooches, straps, harnesses, and sometimes also saddles.³¹⁹ The mention of Claus Beltare as early as the first half of the 14th century could indicate that even in that early stage, professional division and specialization of some degree between leather artisans, had been evolved in Turku.

A sword-polisher (Fi. *miekanhioja*, Swed. *svärdslipare* or *svärdfejare*, Ger. *Schwertfeger*) was a craftsman who assembled the sword, and polished and decorated it.³²⁰ A strict distinction between blade smiths and sword-polishers in the production chain is difficult to draw. In simple tasks all the phases could be handled by the same person. In more difficult tasks, the balanc-

ing and the grinding of the blade were done by the blade smith. The assembling and polishing, the finishing of the sword to the ready product, was done by the sword-polisher. Furnishing the sword with the scabbard was their task, too.³²¹ In addition, sword-polishers renewed used swords, renovating, polishing and furnishing them with new scabbards.³²²

If the name Laurens Svärdslipare is thought to indicate profession, and the task description of a sword-polisher is thought to be the same as in Sweden and the rest of Scandinavia, there could have been sword-polishers who assembled and renewed the swords with scabbards in Turku in the Middle Ages, even if this example is only from the late Middle Ages.

No tanners are mentioned in the literary sources concerning medieval Turku.³²³ This is no surprise. In Stockholm, the different crafts of leather workers tanned the skins they needed themselves. This was common in Nordic countries in general.³²⁴ No craft organizations are known from medieval Turku either. The first organizations are to be found not until 1620's.³²⁵

One of the questions which has occupied the researchers for a long time, has been the nationality of the burghers. C. J. Gardberg has supposed that both the Latinized name of Thetmarus Sutor and the status of this person could refer to an immigrant German craftsman, who had followed the merchants. Gardberg refers to examples from other towns, where the shoemakers were frequently of German origin.³²⁶ According to Kallioinen, the nationality of Thetmarus Sutor, Albrecht and Hollinger could be German, Claus Beltare could be Finnish and the nationality of Laurens Svärdslipare is unknown.³²⁷

It is known that in the large towns of Europe, there was a special craft, which manufactured sheaths. In London, for example, the craft was called *sheathers*. Also the craft of *cutlers*, the people, who assembled the knives, could sometimes manufacture sheaths.³²⁸ Whether the making of sheaths in smaller towns was the work of knife-smiths or leather workers is not known. It can be presumed that no special craft for sheath making was functioning in Turku. This is based on the information of Stockholm, which as a larger town than Turku can be used as a parallel. If the specialisation in leather working was not working in Stockholm, it was not probably even in Turku. No specialised craft of sheathers was working in Stockholm.³²⁹ Thus, *if there were*

*sheaths of local manufacture in Turku, these were probably made by knife-smiths or by the different crafts of leather working (shoemakers, belt makers etc.).*³³⁰

8.2 THE UNLIKELY CONNECTION BETWEEN THE EVIDENCE OF LEATHER WORKING AND THE ARTEFACTS FOUND

In the archaeological material of the Åbo Akademi main building site excavation, there is evidence which clearly indicates leather working in the area or in the near vicinity. Firstly, there is a large amount of skin-scraping waste from the earliest contexts of the excavation.³³¹ Secondly, a large number of leather offcuts from the second half of the 14th century and the first half of the 15th century indicate leather artefact manufacturing. On the basis of the shape of the offcuts at least part of this material derives from shoemaking. At least one offcut concentration can be connected to a building or building complex (dated to the early 15th century) with a possible tanning vat.³³² Two shoemaker's lasts, possible master forms or cutting models for soles (sole shaped leather pieces without stitches), half-moon shaped shoemaker's knife, creasers and awls are evidence of leather working too.³³³

Thus, we know for certain that there has been shoemaking and possibly manufacturing of other types of leather artefacts in the area in the Middle Ages. The problem is how to connect this information of leather working to the artefacts found? The artefacts found are for the most part rubbish, cast away by the town dwellers and thus they cannot be connected to the possible leather artefact manufacturing in the area. It cannot be assumed that the products of handicraft would end up in the same contexts where they were made. The indications of leather working, which are literary sources, archaeological evidence (currying waste, offcuts, structures related to leather working), and the discarded objects remain as two separate groups. The connection between them cannot be proved.

What remains then, are the artefacts themselves, in this case sheaths, scabbards and grip coverings. Are there any indications that they were locally made or imported? What comes to the local manufacture, artefacts with an exceptional manufacturing technique could be classified as local manufacture. Unfortunately,

the medieval leather material of Turku seems to have followed the general trends noticed in most towns in the Baltic area. Such a detailed comparison between the materials of different towns, where differences in manufacturing techniques could be distinguished, has not been possible in the frames of this study. This is mostly because there are very few studies with such detailed information, which could be used in making such comparisons.

Artefacts with close parallels abroad, what comes to manufacturing technique or style, could be of foreign origin. Unfortunately in the Middle Ages, the ideas, patterns and the craftsmen themselves moved from area to another. The high proportion of foreign citizens in Turku in the Middle Ages is well known.

In the next chapter there is presented one possible method to solve the origin of the artefacts. This could happen by analysing the plant fibres used in sewing threads of the artefacts. In Chapter 8.4 it is discussed the possibility to use the fragments of scabbards as the evidence for crafts, i.e. the work of the sword-polisher.

8.3 PLANT FIBRES AS THE EVIDENCE OF THE AREA OF MANUFACTURE?

There are early datings of the hemp achene finds in Turku. The abundance of these finds refers to the probable cultivation of this plant in medieval Turku. According to Lempiäinen, hemp was probably cultivated in Turku from the 13th century onwards. Hemp fibres were also imported from the Baltic countries and Russia.³³⁴ Hemp is an old useful plant, which spread from Eastern Europe to other areas. With the Finno-Ugrians and Russian people, the cultivation of hemp was more common (and older) than the cultivation of flax.

Few flax pods have been found in medieval Turku and supposedly it was cultivated and handled outside the town. In the flax fibre form, it was probably imported from Baltic countries or Russia.³³⁵

Nettle seeds are plentiful in the medieval Turku deposits too.³³⁶ It seems improbable that fibres have been imported to Finland because of its local abundance.

What kind of conclusions can be drawn from the above mentioned information of plant

cultivation? It was already mentioned that the origin of the manufacture of artefacts is a difficult question. However, it should be possible to use the *information about the materials of the sewing threads of the artefacts in finding out their probable origin*. The hypothesis is that *the artefacts were sewed with the materials commonly available*.

The artefacts sewn with flax thread could be local manufacture because of the probable availability of flax thread in Turku, but could as well be imported from the areas where flax was cultivated and used for threads. These are the Baltic countries and Russia but also Scandinavia, Central-Europe and Western-Europe. On the basis of the flax threads, the finding out the origin of the artefact is not possible with the present material.

On the other hand the prevalence of hemp as thread material in the sheaths of the research material (Fig. 5) supports the probability of local manufacture. Another possibility is that the artefacts sewn with hemp threads were imports from other hemp cultivation areas, which are mainly Russia and the Baltic countries. What is interesting is the improbability of the sheaths being imports from the areas of Germany or Poland. Without the evidence of thread materials these areas would be very probable as the origin of the artefacts. The hypothesis of these areas being improbable areas of import is that *with the present knowledge, in these areas the cultivation of flax was much more common than of hemp*.

Another support for the local manufacture could be the artefacts sewn with nettle thread. The hypothesis here would be that nettle was used for threads especially in Finland. This is based on the assumption that nettle was used in sewing threads in medieval Finland. On the other hand, the information of the use of nettle in other countries is not available.

A general conclusion is that *if the hemp is used as the evidence of the area of manufacture, most of the sheaths of the research material are of local manufacture or imports from Russia or the Baltic countries. The imports from Germany or Poland are less probable*.

It is noteworthy that in the scabbards of the research material threads were not preserved. My explanation for the poor preservation is highly hypothetical. It is known that flax does not preserve as well in the soil as hemp.³³⁷ The threads of the scabbards could have been flax and

thus the origin of scabbards would be a flax cultivation area too, e.g. Germany, Poland, etc. It is known that swords were imported and scabbards could have been imported with swords too.

8.4 THE REUSE OF SCABBARDS

8.4.1 THE PHENOMENON OF CUTTING THE SCABBARDS

In Chapter 6.1.2 it was noticed that all the scabbards of this material are cut in small fragments. This is not in any way a unique phenomenon. The cutting of scabbards is noticed, for example, in medieval scabbards of Schleswig, Leiden, Bergen, Oslo, Trondheim and in Late Saxon scabbards in the British Isles.³³⁸ Usually the cutting of scabbards is connected to the reuse. According to Marstein, it was the leather that was reused. The fragments found from the excavations could be waste fragments, which were left, when the larger fragments were cut for reuse for other objects.³³⁹

According to Van Driel-Murray the small fragments were produced when the scabbard leather covers were cut. This happened when the wooden scabbard plates inside were taken for reuse for new scabbards. In the same process the metal parts of scabbard, the mouth-band and the chape, and the belt-system were taken for reuse. According to her, the lack of finds of wooden scabbard plates from the excavations even if they should be found because of the suitable preservation conditions, could refer to the reuse of the plates. The large number of the scabbard finds and their concentration in one area refers to the waste from a workshop.³⁴⁰ Schnack refers to the reasons presented by van Driel-Murray, when discussing the small fragments of scabbards from Schleswig.³⁴¹

Cameron has noticed that 'the discarded leather scabbard fragments of Late Saxon date are almost invariably cut with longitudinal strokes and slashes of a knife. The manner of the cutting suggests that the leather was stripped from another component from which it could not be quickly separated by any other means. According to Cameron 'recycling the wooden plates by simply relining and recovering with fresh leather, would be a relatively straightforward procedure, especially worthwhile if a scabbard fitted a particular blade.'³⁴²

Of the scabbards of Coppergate 16-22 in York, she writes: 'Many of the fragments had been torn along the folds already weakened by wear, but the use of knife to facilitate the removal of old leather, and in some cases the retrieval of strap slide, is evident on every piece. Since an empty scabbard could be broken across the knee and disposed of in the domestic hearth, the evidence from Coppergate points to the refurbishment of old wooden scabbards with new leather'.³⁴³

Sometimes the reuse is connected to a special craft, the work of the 'sword-polisher'. Bolstad refers to the possibility of the working of the sword-polisher in the area in the case of Bergen scabbards.³⁴⁴ Blomqvist connects the worn-out scabbards of the site 'Apotekaren 5' in Lund to the work of the sword-polisher. This craftsman cleaned and polished the blades and furnished them with handles and the scabbard. In addition he could work with daggers. When the sword or dagger was furnished with a new scabbard the old scabbard was discarded. Further evidence for the work of the sword-polisher are the many finds of guards from swords from 'Apotekaren 5'.³⁴⁵

Could it be possible to connect the finds of the research material to the phenomenon of reuse and even to the work of the sword polisher? This is discussed in the next chapter.

8.4.1.1 THE SCABBARD FRAGMENTS AND GRIP COVERINGS OF THE ÅBO AKADEMI AND OLD GREAT MARKET PLACE EXCAVATIONS

A noteworthy aspect of the scabbards of the Åbo Akademi excavation is their dating. All by the find context datable scabbards date to the period 'latter half of the 14th century – first half of the 15th century. Even if the emphasis of the whole leather assemblage is on this period, the lack of scabbards from later periods must be taken of account. A closer look at the find contexts tells us that 15 scabbards derive from the excavation area 'Kemicum' and 9 scabbards from the area 'Kosmorama A'. Thus there is a concentration on these areas. Only one scabbard comes from the area 'Kosmorama B' and even this is from a mixed context.

Inside Kemicum and Kosmorama A areas one cannot notice any further concentration on specific contexts, that is, primary contexts, if these are understood as connection between

artefacts and specific buildings or structures, for example, rubbish-pits or work-shops. The finds have been spread quite evenly in the soil layers. I presume that most of the artefacts are in their secondary contexts, i.e. discarded artefacts moved from the primary context but still valid as the evidence of the activities in the area or in the near vicinity.

The scabbards from the Old Great Market Place come from one excavation area, the Hjelt site. Inside this site, there are two layers from where the scabbards derive. First of these is dated to the period 'ca. 1350 – beginning of the 15th century'. The second context is dated to the first quarter of the 14th century. Also in this case the scabbards probably are in their secondary contexts but still reflecting the nearby activities.

For the reason to the cutting of the scabbard leathers I would suggest the reuse. The frequent fragments sliced longitudinally seem to indicate more probably the stripping the leathers from another components than keeping the leather. The narrow, worn-out scabbard leathers would not be very suitable material for new leather objects either. The 'other components', scabbard leathers were stripped from could be the wooden plates or inner structures of another material (see Chapter 6.1.3.1), the metal parts (chape, mouth-band) and the belt system.

It would be likely that the act of cutting the scabbard was connected to the discarding the old scabbard when and where a replacement was available. The concentration of the sliced scabbard fragments on certain excavation areas (Kosmorama A and Kemicum areas of the Åbo Akademi excavation, Hjelt-area of the Old Great Market Place excavation), in which there is already a strong evidence of leather working, can be associated with this. Thus, *the cut fragments of scabbards, when found concentrated in specific areas can be used as the evidence of the activity of renewing the scabbard leathers.* Because the activity seems to be concentrated, an established and thus probably professional activity can be suggested. Whether this was the work of sword-polishers' or other leather workers' cannot be solved because the lack of the written sources (see, however, Chapter 8.1 of the Laurens Svärdsliapäre of the Late Middle Ages).

To the same activity I would like to connect the grip coverings and rain guards. Like the scabbards, grip coverings and rain guards have

been replaceable leather furnishings of swords and daggers.

IMPRINTS ON THE ÅBO AKADEMI SCABBARDS

In six scabbard fragments from the Åbo Akademi excavation there is a mark-like imprint. The placing of the imprint is the same in all the scabbards. It is placed on the back next to the seam. There are two kinds of marks. In scabbards **180, 181, 182, 193** and **198** the mark is a short, paired, oblique line. In scabbard **179** there is a combination of a short paired oblique line and a paired transverse line.

Olaf Goubitz mentions that in the Middle Ages 'tanners and leather traders used stamps to mark their products, and no doubt inspectors did the same. The stamp marks are sometimes found on leather scraps and offcuts.'³⁴⁶ The marks on the Turku scabbards seem to have been made on purpose. This view is based on the similarity of the imprints and their similar placement. All the marks are made by impression.

What could be the purpose of these marks? They seem to be too simple for the maker's or owner's marks. Maybe they could be related to the sword-polisher's craft? The craftsman could, for example, use these markings to sign quickly those scabbards to which he must change the leather cover. The simple mark on the back of the scabbard would be an adequate sign in distinguishing the scabbards needing different treatments.³⁴⁷

Why are these marks on the small fragments which have been discarded? Of course it can be purely incidental but other reasons can be possible too. If the scabbard leather was to be reused, perhaps it was not suitable to have a mark in the new object either because of the esthetic reasons or because of some statute concerning the rights and prohibitions of making objects of used leather.

8.5 THE USE AND USERS OF THE ARTEFACTS STUDIED

In the Middle Ages not only military men carried swords and daggers. The belt with its equipment was the symbol of honour. Thus, continuing from the Middle Ages to the 16th century the sword or dagger was also part of the dress of a noble

man. From the 16th century sources, concerning the nobles, it is known that in Finland it was common that also women carried a knife in a sheath hanging from the belt.³⁴⁸ The carrying of weapons in towns was at times regulated in the Middle Ages. In Magnus Eriksson's land- and town laws the carrying of daggers and certain dagger-knives was prohibited from vagrants and visitors in towns in ca. A.D. 1350. In the Late Middle Ages the prohibitions concerning the carrying of weapons were frequent.³⁴⁹

Weapons in the archaeological material of Turku town are not unknown either. From the Åbo Akademi excavations come, for example, two trigger thresholds of crossbows, armour piercing cross-bow quarrel-heads,³⁵⁰ and a possible spike of a club.³⁵¹ I would like to connect the scabbards and dagger sheaths to both military persons and nobles and maybe to well-to-do bourgeois. Scabbard (and dagger sheath) finds are concentrated on the central areas of medieval Turku. To these central areas I include the finds of the Old Great Market Place, the finds of the Aboa Vetus site and the nearby finds in the Convent quarter. Also, the site of the Åbo Akademi excavation relates more to the Cathedral quarter with its rich finds than to

the Mätäjärvi quarter, on the northern border on which it was situated in the Middle Ages.

The lack of sheaths or scabbards *of any kind* in the materials of the excavations of Uudenmaankatu 6 and Vähä-Hämeenkatu 13b in the Mätäjärvi quarter is striking. From these excavations derive only three sheaths. The number is small even if it was related to quite small excavation areas. In this context the huge number of finds from the Åbo Akademi excavation is emphasized further. If the 163 artefacts of this research material from the Åbo Akademi were proportioned to the estimated discarding period of ca. A.D. 1360 – 1520, the result would be ca. *one artefact/year*. In my opinion this tells us of extraordinary intensity of activities in the area compared to, for example, the Mätäjärvi excavations.

A noteworthy aspect in the Åbo Akademi material is the high-proportion of near undamaged sheaths and a small proportion of self-made repairs or modifications. The phenomenon is even more striking if one assumes that most of these artefacts were discarded on purpose, not lost or left for necessity. This could be interpreted as a sign of prosperity, expressed in the archaeological material.

9. CONCLUDING REMARKS

This study covers the timespan from the first half of the 14th century to the latter half of the 16th century, that is, ca. 300 years. The chronological limits are determined by the find material. The earliest sheaths, scabbards and grip coverings come from the Old Great Market Place and the Aboa Vetus site and date to the time when the town of Turku was, according to the present knowledge, founded.³⁵²

Most artefacts can be dated to the latter half of the 14th century or to the first half of the 15th century. This is because the majority of the material comes from the Åbo Akademi main building site excavation, the organic finds of which date to this period. From the latter half of the 15th century onwards there is a decrease in the material and the material from the 16th century is very sparse, mostly because of an unsuitable find environment.

The domination of the Åbo Akademi main building site material in this research is obvious. Much of what is said in this study is based on the finds from this site. In this find material one can truly see concrete evidence of developed and flourishing high-quality handicraft. On the other hand, the Åbo Akademi excavation material stands alone in the amount and quality of material. One must admit that this assemblage is not really comparable to other materials in Turku, not to mention other towns of medieval Finland.

Does the material really represent something extraordinary - the prosperity of the people living in the area and the intensive activity and diversity of crafts - which was real in the medieval society, or is the extraordinary nature of the material just an expression of good archaeological representation? One cannot really tell for sure until comparable sites are excavated and the results evaluated. Also, more studies discussing the Åbo Akademi site are necessary to form a synthesis of the different find groups.

On the basis of this study the following conclusions can be drawn. The knife sheaths of

the research material were chiefly made of calf leather. In a less degree goat or sheep leather was used. It is interesting that the skins of the game animals seem to be absent. It is possible that among the unidentified leather types, there are these species, too. It is also probable that the skins of the game animals were used more frequently for pelts than for sheaths, scabbards or grip coverings. In addition, these skins could be treated with methods which were not water-repellent. Thus, they are not represented in the archaeological material because of the bad preservation.

Because of the exceptionally good preservation of the sewing threads, it was possible to analyse their materials, too. It was found out that the use of hemp as the material for threads prevails. The usual assumption about the prevailing of linen proved wrong. The use of hemp for sewing threads can be used as a hypothesis for local manufacture of sheaths or for the import of them from the Baltic Countries or Russia. Import from Poland or Germany seems less likely because these countries were mostly flax cultivation areas in the Middle Ages.

Some changes in the construction of the sheaths during the Middle Ages could be noted. Sheaths seamed with rivets have been more frequent in the 14th century (maybe also in the early 15th century) than later. The tradition of the use of rivets and mountings in seaming the sheaths goes certainly back to the Iron Age. During the Middle Ages this tradition seems to have gradually vanished. Even if side seamed sheaths still occur, sheaths with the back seam and especially sheaths seamed with sewing threads prevail in the late Middle Ages.

On the basis of the suspension slots of the sheaths of the research material, knives were carried in a vertical or diagonal position while in the Iron Age also horizontal position occurred. The change to the vertical or diagonal position probably took place in the late Iron Age.

Most sheaths were seamed with a shoe-

maker's stitch, which can be considered as the strongest stitch type in leather working. Whether this stitch type goes back to the Iron Age cannot be solved with the present material. It could well be that this stitch type was a medieval novelty in Finland and only running stitch and binding stitch occurred in the Iron Age. This view is based on the fact that the shoemaker's stitch has not been noticed in the Iron Age finds yet. An analysis of the prehistoric leather remains is needed in support of the hypothesis.

The even stitch length of the sheaths of the research material tells us of a high-quality seaming, relating to the probable professionalism in sheath manufacturing. About ten per cent of the sheaths were, on the basis of their attributes, most certainly of unprofessional manufacture.

The great variation in the forms of the sheaths tells us that the variation in the knife types must have been great, too. In this study a group of sheaths for 'special knives or tools' was distinguished from the Åbo Akademi main building site finds. In these sheaths, the traces of heavy wear and the use of sheep/goat leather could be noted. This group of sheaths can be related to the activity in the Åbo Akademi site in the late 14th century and the early 15th century when the area was intensively inhabited and built.

On the other hand, most of the sheaths of the Akademi site are not very worn, and even if there can be noticed repairs on sheaths, these are not very frequent. On the contrary, there is a large number of undamaged or near undamaged sheaths from the Åbo Akademi main building site. This could be interpreted as a sign of prosperity reflected in the archaeological material. Still, more information about the different artefact groups and the living conditions on this area in the Middle Ages is needed to deepen the social context of the finds.

Over half of the sheaths were decorated. A discrepancy between the high technical and functional quality of the sheaths and the lower quality of the decoration was noticed and different reasons for this phenomenon were discussed. The most probable reason could be that the decorator was a different person than the manufacturer, i.e. the owner of the sheath.

A group of sheaths defined as sword scabbards was distinguished. Attributes found to be typical of the scabbards were material (calf leather), the placing of the seam (on the back,

not on the side), the stitch type (the shoemaker's stitch), a small range of variation in stitch lengths, dimensions and forms (usually straight edged or only slightly tapering) and the impressed lines on the edges or next to the seam. The scabbards of the research material have been made merely of calf leather. An even stitch length and the shoemaker's stitch relate to a probable professional manufacture.

In contrast to the Iron Age scabbards, inner structures of wood were not noticed inside the scabbards of the research material. An option that the inner structures in medieval scabbards could have been of untanned leather instead of wood was presented. Another option is that the leathers found from archaeological contexts are those which were stripped of the wooden scabbard cores when these were to be reused. This could relate to the fact that the scabbard leathers found are frequently cut in pieces. Whether the renewing of the scabbard leathers was done by a special craftsman, the sword polisher remains an open question for the time being.

The grip coverings from swords and daggers and the rain guards from swords are new artefact groups in the archaeological material of Turku. In fact, these artefact types are rare in other urban sites of Europe also. It could be that these objects have been left unidentified or have been confused with sheaths or other kinds of leather cases. Because of this, it would be very important that unidentified artefacts were published more often than is customary.

In the research material one cannot really discern a phase of 'beginning', where one would expect to see artefacts of low quality and where there would be more evidence of failed attempts of making artefacts. Right from the earliest material onwards, everything seems to be ready, no practising can be discerned. In fact, this seems to concern not only sheaths and scabbards but the whole medieval leather material of Turku. This refers to the probability that the craftsmen came from abroad. Another option is that local craftsmen adopted very quickly the new methods and models. I do not assume that there was no local traditional know-how on leather crafts. I am sure there was, but at least the models of making artefacts were most probably foreign.

The 13th century is a great question mark in the studying of the leather crafts. Probably the 'start' in making artefacts using similar patterns in towns of the Baltic area has happened in this

century, which is not represented in the find materials of Turku at all. There is a gap between the Prehistoric Period and the Middle Ages in Finland. The burials of the Crusade Period are mostly unfurnished. Also, written sources are very sparse and urban archaeological materials are lacking completely in the Early Middle Ages. Unfortunately, probably during this gap there happened those changes which led from the prehistoric sheaths and scabbards to the models we know from the Middle Ages. One can see the change have been happening quite gradually, when one surveys, for example, the materials from Novgorod, where there is no gap in archaeological materials between periods.

Even if the finds of the Prehistoric Period were discussed in this study, any certain links between the Iron Age finds and the finds of the Middle Ages could not be noticed - only a few possible differences, which were mentioned above (the different stitch types and scabbard structures). Thus, the possible 'tradition' of the Iron Age is absent at the time being. My intuition is that this is mostly because the insufficient knowledge of the use of leather in the late Iron

Age. A special study discussing the technical details of the Iron Age leather finds would be necessary to solve the open question of the possible and probable links between the Iron Age finds and the medieval finds.

In this study I have analysed a certain group of artefacts and medieval crafts with the help of these objects. In my opinion, more studies, starting from the detailed technical analyses are needed if progress in artefact studies is to happen. One cannot spring to conclusions about medieval society without detailed, basic research. The comparisons to other materials presuppose certain basic facts of artefacts, which unfortunately are quite often missing from publications. Mostly because of this lack, some comparisons made in this study remain quite shallow. Fortunately, my wish seems already to be coming true. There is a trend, for example, in the studies of prehistoric artefacts and crafts,³⁵³ and this is reaching the studies of medieval materials, too. If one forgets the very laborious nature of this kind of work for a moment, what one is likely to see is the huge potential of these studies.

ENDNOTES

¹ Åbo Akademi University is the university for the Swedish-speaking.

² In Finland, according to the section 15 of the Antiquities Act, when the constructor is a company, not a private person, the constructor pays the fees or at least participates in the financing of the archaeological investigations. This happens if the costs are not regarded as excessive, considering the circumstances. In practice, this section is open to various interpretations. About the discussion on the proceedings in the Åbo Akademi main building site excavation, see e.g. Haggrén & Lavento 1999; Haggrén, Lavento & Niukkanen 1999a; 1999b; Pihlman 1999.

³ Of the general course, method and find materials of the excavation: Arkeologiset tutkimukset Åbo Akademin tontilla (Turku I/7/4) vuonna 1998; SKAS 4/1999; Pihlman 2003.

⁴ Of the different leather find groups, see Harjula 1999, 2002, 2003; Harjula & Jokela 2003.

⁵ Dating of the find contexts: Seppänen 2003.

⁶ Of the possible reasons for the thin layers of the late Middle Ages, see Chapter 1.2.1.

⁷ Of the causes for the over-representation of shoes in medieval excavations, see Groenman-van Waateringe 1988:8-9.

⁸ Of the observation act in artefact research, see Creutz 2003:25-27.

⁹ 'Intrinsic variables and attributes are all of the significant and recognizable features of the material being studied that are discoverable on examination of the material itself. Contextual variables and attributes refer to the context in which things occur: they include distributions in space and time, and also associations between things being classified and other things found with them.' (Adams & Adams 1991:176).

¹⁰ I do not assume that all the reasons behind the makers' decisions have been functional or technical. However, of the rational decisions, functional and technical should be most easily noticed in the case of this research material. It is my opinion that what comes to the technical questions, the *emic* viewpoint, that artefacts 'reflect some intention on the part of the makers' (see Adams & Adams 1991:223), could really work.

¹¹ If the beginning of the Post-Medieval Period is thought to be ca. A.D. 1525/1550, a small part of the research material from the latter half of the 16th century must be considered as Post-Medieval. It is the task of the archaeological studies to find out when the real changes in the material culture happen (of the

different points of view concerning the limit between the Middle Ages and the Post-Medieval Period, see e.g. Haggrén 2000:39; Kallioinen 2000:23-24; Kallioinen 2001:134-137.

¹² Webster's Encyclopedic Unabridged Dictionary of the English Language. Portland House, New York 1989.

¹³ Ibid.

¹⁴ Cameron 2000:1.

¹⁵ 'A scabbard could be cut back and re-stitched for reuse with a smaller knife, even if the end was cut through or the suspension loops broken. A knife which had lost its cutting edge or broken in mid-blade could only be discarded and replaced.' (de Neergaard 2000:61).

¹⁶ The deposition processes of prehistoric sheaths or scabbards found in burials were different. Usually the knife and sheath, or the sword and scabbard were deposited together as grave goods. Of course, there are exceptions to this. The knife or sword could also be deposited without its case.

¹⁷ Of the concept of 'life-cycle' in archaeology, see e.g. Schiffer 1987; Shanks 1998 and the discussion in the same publication; Suhonen 2003.

¹⁸ Jäfvvert 1981:211-213.

¹⁹ Jäfvvert 1981:209; Thomson 1982:179; 1991:13.

²⁰ Of the different factors of the preservation of the organic materials, see Cameron 2000:13-16.

²¹ Andrén 1986:260-265.

²² Ahola 1999.

²³ E.g. Goubitz 1997; Spriggs 2003:3219; Swann 1997.

²⁴ The register of town archaeology no. 311. About the register, see the introduction in Appendix 4.

²⁵ Sheath 22; Appelgren 1902:62, Fig. 7.

²⁶ Appelgren 1902:53, 62, 64.

²⁷ Knife sheaths: 9, 129, 130, 131 (actually, the last three artefacts were found to be two grip coverings and a scabbard fragment at my closer inspection); purse fragments: KM 4034: 55, 56, 58; soles: KM 4034:57.

²⁸ The register of town archaeology no. 70A-C; Valonen 1958.

²⁹ 210, 211, 64, 51, 128.

³⁰ Valonen 1958:Fig. 55, Plate 14. Valonen (1955), even if an ethnologist, was first who discussed the medieval shoe finds of Turku in his article.

³¹ Sheath 128; Kivikoski 1966:67: 'Doch lässt die Ornamentik spontan an die mit Akanthusmotiv arbeitende Pflanzenornamentik der karelischen Kreutzugszeit denken, und auf Grund dieser Ähnlichkeit kann Zeitgleichheit als wahrscheinlich angesehen werden'; 1973:Fig. 1229.

- ³² Mikkonen-Hirvonen 1991; the register of town archaeology, nos. 451 and 455.
- ³³ TMM 20671:188 (later than medieval, not included in this study), **126, 55**.
- ³⁴ Kykyri 1997.
- ³⁵ Jokela 2002.
- ³⁶ Harjula & Jokela 2003.
- ³⁷ Blomqvist 1938.
- ³⁸ Bergman & Billberg 1976; Blomqvist & Mårtensson 1963:197-200.
- ³⁹ Zerpe & Fredriksson 1982:231-232.
- ⁴⁰ Roslund 1984:79.
- ⁴¹ Nockert 1997 and the references.
- ⁴² Nockert 1997:121-122.
- ⁴³ Grieg 1933:245-249, 268-293.
- ⁴⁴ Marstein 1989:96-101.
- ⁴⁵ Bolstad 1991.
- ⁴⁶ Bolstad 1991:135.
- ⁴⁷ Groenman-van Waateringe 1988:83-85, 119-121.
- ⁴⁸ Andersen & Madsen 1971; Lorenzen 1971.
- ⁴⁹ Izuymova 1959; 1967.
- ⁵⁰ Varfolomeeva 1993; 1994.
- ⁵¹ Sarv 1999.
- ⁵² Aun 1998.
- ⁵³ Bebre 1998.
- ⁵⁴ Wiklak 1967.
- ⁵⁵ Wiklak 1993.
- ⁵⁶ Wojtasik 1960.
- ⁵⁷ Kaźmierczyk 1970; Samsonowicz 1982.
- ⁵⁸ Wywrot 1996; Wywrot 1997; Wywrot-Wyszkowska 1998; Wywrot-Wyszkowska 1999.
- ⁵⁹ Volken & Volken 2002:12, Fig. 19.3.
- ⁶⁰ Groenman-van Waateringe & Guiran 1978:170, 172, Figs. 72.1-2.
- ⁶¹ Vons-Comis 1982:244, Fig. 155d.
- ⁶² Groenman-van Waateringe & Krauwer 1987:Figs. 10a, b, c; *b* and possibly also *a* and *c* seem to be knife sheath caps on the basis of the figures, although they are unidentified by the authors. Also the find from the Lübeck Harbour could have the same function (van den Berg & Groenman-van Waateringe 1992: Fig. 9.5).
- ⁶³ van den Berg & Groenman-van Waateringe 1992: 350-351, Figs. 7-8.
- ⁶⁴ Schnack 1998:15-44.
- ⁶⁵ Schnack 1994.
- ⁶⁶ Cameron 2000.
- ⁶⁷ Cowgill, de Neergaard & Griffiths 2000.
- ⁶⁸ Medieval Catalogue, London Museum (1940).
- ⁶⁹ Carter & Clark 1977 (King's Lynn); Thornton 1990 (Winchester).
- ⁷⁰ van Driel-Murray 1980; 1990.
- ⁷¹ Baart, Krook, Lagerweij, Ockers, van Regteren Altena, Stam, Stoepker, Stouthart & van der Zwan 1977.
- ⁷² Groenman-van Waateringe 1976.
- ⁷³ Cleve 1978:173-174; Kivikoski 1973:Fig. 968; Lehtosalo-Hilander 1982:48-49.
- ⁷⁴ KM 12687:9; Riikonen 1990:25-28, 110, Appendix 1; 2003:236-240.
- ⁷⁵ E.g. Cleve 1978:173; Lehtosalo-Hilander 1982: 48.
- ⁷⁶ Riikonen 1990:25-28, 110, Appendix 1; 2003: 236. Riikonen has also noticed atypical features in this sheath. Unlike in typical Finnish bronze-plated sheaths in Kirkkomäki sheath the groove-like mount does not continue over the tip. Kirkkomäki sheath is also smaller than most of the Finnish sheaths of this type and has two carrying links instead of only one. One carrying link has been considered a distinguishing mark in Finnish sheaths (Lehtosalo-Hilander 1982:49). According to Riikonen (2003:237) the best corresponding features to the Kirkkomäki sheath are found in Estonia.
- ⁷⁷ Lehtosalo-Hilander 1982:48.
- ⁷⁸ E.g. Huurre 1990:Fig. in p. 186; Kivikoski 1973: Fig. 968.
- ⁷⁹ Valonen 1952:164.
- ⁸⁰ Lehtosalo-Hilander 1982:48-49.
- ⁸¹ Cleve 1978:174; Kivikoski 1973:Fig. 968.
- ⁸² Sarvas 1972:47. Of the origin and 'evolution' of this sheath type in Finland and Estonia, see e.g. the discussion of Riikonen 2003:236-240.
- ⁸³ Kivikoski 1973:Fig. 968.
- ⁸⁴ Varfolomeeva 1993:162, Fig. I:26; 1994:169-170, Table I:8. According to Riikonen (2004), these sheaths seem to be of Estonian type.
- ⁸⁵ Heikel 1889:184, Figs. 12-16; Huurre 1990:Fig. in p. 186; Kivikoski 1973:Fig. 1226.
- ⁸⁶ Of the proposed typology for Karelian sheaths, see Saksa 1998:45-46.
- ⁸⁷ Kivikoski 1973:Fig. 1225; Schwindt 1893:157-159, Figs. 1-12; sheaths of Figs. 7 and 8 are from men's graves.
- ⁸⁸ Lehtosalo-Hilander 1982:49; 2000:Fig. 272.
- ⁸⁹ Kivikoski 1973:Fig. 1227.
- ⁹⁰ Varfolomeeva 1994:170, Table I:11-15.
- ⁹¹ KM 8723:200; Cleve 1978:32, 172-173, Plate 5.
- ⁹² Tomanterä 1978:98-107, 144-145. Edge- and tip-ferrules with pricked decoration and animal motifs occur in the Baltic cultural sphere in the 11th and 12th centuries (Gabriel 1988:161-171, Fig. 26). According to Gabriel, the mountings of the Köyliö and Masku - Humikkala sheaths are 'western manufacture' in

contrast to 'Slavic' manufacture (Gabriel 1988:List 6).

⁹³ Cleve 1978:172-173; Sarvas 1972:111.

⁹⁴ Cleve 1978:174-175; Lehtosalo-Hilander 2000: 192, Fig. 187. Of the Scandinavian sheaths see e.g. the sheaths of Birka (Arbman 1940:Plates 6:1, 2 and 178:1).

⁹⁵ Lehtosalo-Hilander 2000:180, Fig. 179.

⁹⁶ Vilks 1964:64, 81.

⁹⁷ Pälsi 1955:38.

⁹⁸ Lehtosalo-Hilander 1982:Table 3.

⁹⁹ Lehtosalo-Hilander 1982:50-51.

¹⁰⁰ Schwindt 1893:160.

¹⁰¹ Lehtosalo-Hilander 1982:50-51.

¹⁰² An exception is an iron chape from Karjaa, Högvalla, with remains of wood from a scabbard inside, dated to the Younger Roman Iron Age (Kivikoski 1973:Fig. 145).

¹⁰³ Salmo 1938:120.

¹⁰⁴ Cleve 1943.

¹⁰⁵ From grave A2 derives a sword and remains of a wooden scabbard (KM 9725:27). From grave A3 derives a sword with remains of wood on the handle and on the blade (KM 9725:39). From graves A4, A5, A8 and BI derive swords with remains of wooden handles and scabbards (KM 9725:53, 70; 9900:10; 10751:8). From grave Ba, derives a sword with remains of a wooden scabbard (KM 10751:1) (Cleve 1943:21-26, 29-30, 38-39, 47; of the sword KM 9725:70, see Kivikoski 1973:Fig. 503). Cleve (1943:175-176) has dated the graves A2, A3 and A4 to the end of the 6th century or the beginning of the 7th century. Graves A5 and A8 are dated to the middle of the 7th century and graves BI and Ba to the latter half of the 7th century.

¹⁰⁶ Lehtosalo-Hilander 1984:298-299; 2000:178-179.

¹⁰⁷ KM 17250:313 (the sword); 317-325 (the fragments of the scabbard). There is no mention of the leather strap in the find catalogue; Lehtosalo-Hilander 2000:178.

¹⁰⁸ KM 11002:5; Lehtosalo-Hilander 1984:Figs. in p. 296, 297; 2000:180-182, Figs. 174-175, 177, 178, 179, 180; Salmo 1940.

¹⁰⁹ Salmo 1940:18-19.

¹¹⁰ Cameron 2000:38-39, 71-73.

¹¹¹ Cameron 2000:39, Fig. 7i.

¹¹² Arwidsson 1942:44-48; 1954:62-63; 1977:40-44; Kivikoski 1961:171.

¹¹³ Cleve 1978:160-163.

¹¹⁴ KM 8602:141; sword type T, dated to the 11th century (Cleve 1978:164; Tomanterä 1972).

¹¹⁵ Kivikoski 1980:39. From Sweden, there is evidence of wooden scabbard plates, leather and even birch-bark used in scabbards in the Viking Age, for example, from the graves of Birka (Thålin-Bergman 1986:Table 2.1).

¹¹⁶ KM 8656: grave 2, no. 1; KM 8656: grave 7, no. 1; Kivikoski 1973: Fig. 1173.

¹¹⁷ Pälsi 1928:78; about the different uses of the strap-dividers, see e.g. Luoto 1993.

¹¹⁸ Kivikoski 1973: Fig. 1174.

¹¹⁹ Schwindt 1893:179.

¹²⁰ From grave 1, a sword (KM 2489:121) with remains of a scabbard of wood and leather/skin was found. From grave 1 comes also a chape of bronze (KM 2489:280) with remains of wood and leather inside (Kivikoski 1973:Fig. 1176; Schwindt 1893: 35) The grave is dated to the end of the 12th century – 13th century (Saksa 1998:58). From grave 2, a sword (KM 2489:243) with remains of a scabbard of wood was found. The grave is dated to the 13th century – the beginning of the 14th century (Saksa 1998: 58). From grave 5 derives a sword (KM 2595:75-76) with remains of wood and leather/skin (Schwindt 1893:24, 32, 45). The grave is dated to the end of the 12th century – 13th century (Saksa 1998:58-59). Of the Kekomäki cemetery, see also Uino 1997:231-233.

¹²¹ Lehtosalo-Hilander 1982:48.

¹²² Cameron 2000:38-39.

¹²³ Gräslund 1984.

¹²⁴ Pihlman 2003:70-71; Suhonen 1999:10-11.

¹²⁵ Seppänen 2003.

¹²⁶ I have surveyed the leather material from the Rettig slope excavation (Rettigin rinne 2000-2001). There are no sheaths or scabbard fragments from this excavation.

¹²⁷ Pihlman & Kostet 1989; Pihlman & Tuovinen 1981; Pihlman & Tuovinen 1984.

¹²⁸ Tuovinen 1989.

¹²⁹ Ojala 1987; Kykyri & Ojala 1988.

¹³⁰ Phasing according to Pihlman 1995:80-81, Appendix 3.

¹³¹ Mikkonen-Hirvonen 1991.

¹³² Of the outline of the excavation and of the phases discerned, see Pihlman 1995:61-79, Appendix 2; Uotila 1989.

¹³³ Pihlman 1995:61-79, Fig. 17, Appendix 2.

¹³⁴ About the site, see Sartes 2003; Uotila 2003:126-131.

¹³⁵ Of the differences in preservation of organic material in the Åbo Akademi site and the Aboa Vetus site, see Harjula & Jokela 2003.

¹³⁶ Jokela 2002.

¹³⁷ Pihlman 1995:Appendix 5; the register of town archaeology 70A-C.

¹³⁸ Valonen 1955; see also Otva 1953.

¹³⁹ Pihlman 1995.

¹⁴⁰ Pihlman 1995; Appendix 6; the register of town archaeology 133.

¹⁴¹ Pihlman 1995; Appendix 6; the register of town archaeology 247.

¹⁴² Pihlman 1995; Appendix 6; the register of town archaeology 60.

¹⁴³ Pihlman 1995; Appendix 6; the register of town archaeology 311, 354, 278.

¹⁴⁴ Of the phases and dating of the layers, see Pihlman 1994; 1995:144, 156-168, Fig. 41, Appendix 7.2. Pihlman's work in clarifying the datings and find contexts of the excavation is based on dendrochronological datings and the research of ceramics.

¹⁴⁵ Discussion with Maarit Ahola, the main conservator of the Åbo Akademi excavation material.

¹⁴⁶ Cf. Grew & de Neergaard 2001:102-103.

¹⁴⁷ Of the variation of the terminology of seams and stitches of leather working used in archaeological literature, see e.g. Cameron 2000:Fig. 1; Cowgill 2000:37; Goubitz 1984:Fig. 1; 2001:Fig. 4; Tuovinen 1989:123, Fig. 2.

¹⁴⁸ If this definition is followed, the division between closed seam and butted seam remains quite subjective. This is because also in butted seams, the edges of the leather parts are sometimes turned or 'closed' a little bit. This is caused by the fact that with the edge/grain stitches, when the stitch hole goes in the grain side, it usually comes out from the lower part of the leather edge, because in raw tanned leathers, the middle layer of 'raw' skin is often 'included in the stitch'. The stitch goes through the raw layer and comes out of the edge under the raw layer. This method can be used especially when a firm seam is wanted (Dahl 1997:64-65). In this stitching method the edges close a little bit even if the seam is 'butted' in a sense that the stitch hole comes out from the edge of the leather. For this reason, I have adjusted the definitions. I have defined a seam as 'butted' if the edges of the leather parts truly are 'butted' (despite the stitches) or if the edges are closed a little bit but the stitch holes come out of the edge of the leather. I have defined a seam as 'closed' if the leather parts have been closed, even if only a little bit and the stitches are flesh/grain stitches.

¹⁴⁹ Goubitz, van Driel-Murray & Groenman-van Waateringe 2001:35-38; Groenman-van Waateringe 1984:19; Schnack 1992:22-34.

¹⁵⁰ Drawings after Schnack 1992:Fig. 7.

¹⁵¹ Bergman 1995:18; Groenman-van Waateringe 1984:20, Fig. 7.3; Schnack 1992:28-29, Fig. 7.2.

¹⁵² A so called 'double running stitch' looks the same as the 'shoemaker's stitch'. It is made with a running stitch, then a second running stitch coming back and filling the gaps (Groenman-van Waateringe 1984:20, Fig. 7.1b; Schnack 1992:29-30, Fig. 7.4). However, this stitch type does not allow the same control of the tension of the materials as the shoemaker's stitch. Traditionally, a shoemaker's stitch has been much more common in leather working (Schnack 1992:28-29).

¹⁵³ Groenman-van Waateringe 1984:20, Fig. 7.1a; Schnack 1992:29, Fig. 7.1.

¹⁵⁴ Grew & de Neergaard 2001:125; Groenman-van Waateringe 1984:22, Fig. 7.4; Schnack 1992:30, Fig. 7.5.

¹⁵⁵ Of these methods, see e.g. Groenman-van Waateringe 1984:10-15; Haines 1991; Hansen 1980.

¹⁵⁶ I have used present day leather samples and microscopic photographs (Volken 2002) as reference material in defining the species. In difficult definitions, I have also got help from M.A. Sanna Jokela.

¹⁵⁷ The definition was made by M.A. Jaana Riikonen.

¹⁵⁸ Of the wooden sheaths of Norway and Germany of ca. A.D. 1400, see Grieg 1933:245-246, Figs. 215-218. Of the lack of birch barks sheaths in the Iron Age graves in Finland, see Pälvi 1955:34-35; Sirelius 1921:19-20.

¹⁵⁹ In this study, I sometimes discuss the whole research material as one group. In some cases I discuss the Åbo Akademi main building site excavation material and the other material separately, especially, when I have wanted to compare these materials.

¹⁶⁰ The definition of cattle or calf is done in this study on the basis of the thickness of leather. The skin of a young calf about 1 month is about 1 mm thick. The skin of a calf that is almost fully grown, i.e. about 12 months old is about 2.5 mm thick. The skins of mature calves are generally between 4 – 6 mm thick (Haines 1991:1-2). Of course, it is possible that the thickness of leather is not original. The leather could be pared down to the required thickness by using the tool called the 'curriers' knife'. However, as R.S. Thomson has mentioned, 'This was, however, time consuming, wasteful in terms of the amount of good leather converted into shavings and liable to damage the expensive hide.' The mechanical splitting machine was patented not until 1768 in England (Thomson 1982:147-148, 152-153). On this basis, I presume that the leathers of this study are quite close to their original thickness, that is, thick cattle leath-

ers were not usually pared down to the thickness that could be mistaken as calf leathers.

¹⁶¹ This view is based, in addition to the material of this thesis, to the author's survey of the other medieval leather material of Turku and to Sanna Jokela's analysis of the leather material of over 20 000 pieces from the Aboa Vetus excavations, where the proportion of sheep and goat leathers is between one and two per cent of the material, while the calf leather dominates (Jokela 2002:26-30).

¹⁶² Eisenlohr 1998:429; Haines 1991:2; Serjeantson 1989:129.

¹⁶³ Kaukonen 1988; Sirelius 1921:38-42; Sogaard 1982; Talve 1979:91.

¹⁶⁴ E.g. West 1998:48.

¹⁶⁵ E.g. Cowgill 2000:35.

¹⁶⁶ Illustrations from Voronova & Sterligov 1996: Figs. 305, 308. For other medieval illustrations of sheaths thrust through the purse or tucked behind the belt, see Hildebrand 1983a:Fig. 204; de Neergaard 2000:54-55, Figs. 18-19; Voronova & Sterligov 1996:Fig. 133.

¹⁶⁷ An analysis of the modifications of the London sheaths has been done by Cowgill (2000:39). Several sheaths were modified either for the better fit or for reuse. The most usual method was the slitting of the sheath at the top or sometimes at the bottom. In most cases the slitting was deliberate, reaching the junction of the handle/blade section, in one case the slit was on the front of the handle. Some London sheaths were also cut from the bottom, probably to fit a bigger knife than the original. Some sheaths were shortened by cutting either from the mouth-end or more often from the tip (Handles were usually of standard sizes, blade sizes varied more).

¹⁶⁸ de Neergaard 2000:54.

¹⁶⁹ The shortest sheath (27) is only 95 mm long, but is a so called 'additional sheath', see Chapter 5.5.5.

¹⁷⁰ Cowgill 2000:25.

¹⁷¹ For example knives TMM 21816:L2847, A685, L1803, L1193, L1874, L2841 and L2856 have a tang, which has penetrated whole length through the handle. In knives L2276, L1912 and L1105 the tang extends only some distance into the handle.

¹⁷² Vilkuna 1964:61.

¹⁷³ Pälsi 1955:39-40; Sirelius 1921:21-22; Vilkuna 1964:65-66; Vuorela 1998:437-438.

¹⁷⁴ Pälsi 1955:39-40.

¹⁷⁵ Vilkuna 1964:75-84.

¹⁷⁶ The Finnish terms are author's suggestions for the translations, not established terms of leather working.

¹⁷⁷ Of the techniques of type 1a, *scratching* or *scraping* (Fi. *raaputuskoristelu*) is not used in the knife sheaths of this study, but the use of this method can be seen, for example, in the patten straps of the Åbo Akademi material (e.g. TMM 21816:NE17396, NE12823). In this decoration method, the surface of the leather is scraped or scratched to make contrast between the matt parts of the scraped area and the glossy surface.

¹⁷⁸ Sometimes a term blind pressing or blind stamping is used instead of embossing, but usually this term is used when speaking of metal working or printmaking. In leather working, embossing is more common.

¹⁷⁹ If a sharp stamp is used, the surface of the leather will be broken. This kind of stamping belongs to the decoration techniques of type 1.

¹⁸⁰ In addition to the decoratively cut edges of some sheaths, excision can also be seen, for example, in a shoe with amateurishly cut openwork from the Åbo Akademi excavations (TMM 21816:NE11092). Of the decoration of type 2, stabbing (Fi. *pistokoristelu*) does not occur in the knife sheaths of this research material. In this technique, the decoration motif is formed of several nearby stabblings through the leather. This technique can be seen, for example, in the patten straps of the Åbo Akademi material, which seem to have been a real 'playground' for different decoration techniques (e.g. TMM 21816:NE50963, NE12824).

¹⁸¹ In sheath 36, there are rough, angular cuts through the spine, obviously meant to penetrate the leather.

¹⁸² A good example of the other type of embossed leather artefact is a case for the writing tablets from the Åbo Akademi excavation (TMM 21816:NE16418). In this object, there are two panels for decoration (the front and back of the case). On the left panel, there is a *melusina* motif and on the right panel an *eagle* motif, both made by embossing the leather.

¹⁸³ According to Russell (1939:139), in late medieval English leatherwork (latter half of the 14th century – 15th century), the incised decoration was the most popular form. See also Medieval Catalogue, London Museum 1940:185.

¹⁸⁴ This division is typical for the medieval sheaths and was established, for example, in England already in the 10th or 11th century (de Neergaard 2000:40 and the references; also Blomqvist 1938:153; Medieval Catalogue, London Museum 1940:187). According to Cameron (2000:sheath no: 61 in Fig. 36; 2003:3354) this phenomenon could possibly be seen already in the Anglo-Saxon knife sheaths of the 7th century.

¹⁸⁵ The convention of division into decorative panels occurs also, for example, in London sheaths, irrespective of the quality of the decoration. It prevails both in high-quality decoration as well in decoration, which de Neergaard describes as ‘graffiti’, executed by the owner (de Neergaard 2000:40).

¹⁸⁶ I can not figure out other function than the decorative for the stitches *along the front* of the sheath 55.

¹⁸⁷ Similar three-band plaiting can be seen, for example, on the foot of a pewter-jug (TMM 542) found near the Old Great Market Place in 1888 (see Taavitsainen 2003:Fig. 2 and the references).

¹⁸⁸ Haastrup 1981; Karlsson 1976:74-75. Of the *acanthus* decoration and its origin in the Nordic countries and in Finland, see also Appelgren 1910; Haastrup 1981; Hauglid 1980; Kivikoski 1966; Lehtosalo-Hilander 1984:383; Mikkonen-Hirvonen 1991:67-70; Taavitsainen 1990:195-196.

¹⁸⁹ Drawing after Valonen 1958:Fig. 55.

¹⁹⁰ Appelgren 1902:63-64; Hildebrand 1983b:Fig. 381.

¹⁹¹ Appelgren 1902:Fig. 7.

¹⁹² de Neergaard 2000:41-42.

¹⁹³ Despite all individuality in crafts, common ideas of how things should be and look like to be functional, ‘nice’ and to fill certain ideological and social needs, have always existed. These norms and ideal images formed the object ‘types’ of the past (Gräslund 1996: 18-19).

¹⁹⁴ The phenomenon of ‘low-quality’ or ‘primitive’ decoration can be seen in certain frescos in Finnish churches too. These occur even on the walls of such central institutions as the Turku cathedral and the church of Nousiainen. Also here one must consider the probable differences between the medieval and modern day esthetics (Hiekkanen 2003a:80, 206; 2004).

¹⁹⁵ It must be noted that details in appearance, function, quality and form are four separate variables. Each of these is independent from all the others. Thus, a sheath can belong to several of these groups. If there is correlation between attributes of different variables, it is probably meaningful just because of the independence of the variables. See Adams & Adams (1991:169-181) about the variables in typology.

¹⁹⁶ About the emic vs. etic classification: Adams & Adams 1991:282-284. It can occur that we have knowledge of how things were classified in the past. This concerns especially cultures in the scope of written sources. Of the discussion of this classification problem: Immonen 2001:22-24.

¹⁹⁷ Bergman 1995:63-76.

¹⁹⁸ Of the rune-inscriptions of three Lund scabbards, also uninterpreted, see Moltke 1985:475-477.

¹⁹⁹ Nockert 1997:121-122, Fig. 108.

²⁰⁰ Nockert 1997:125-138.

²⁰¹ van den Berg & Groenman-van Waateringe 1992: 351, Fig. 8.12 (A.D. 1220-1250). The artefact is categorized as knife sheath. Groenman-van Waateringe & Krauwer 1987:77, 83, Fig. 65.10a, b, c (the second quarter of the 15th century). The artefacts are categorized as ‘caps with unidentified function’.

²⁰² Cowgill & al. 2000: no. 433 (the first half of the 14th century) and no. 457 (the late 14th century).

²⁰³ Pälvi 1955:Fig. in p. 48; Sirelius 1921:21, Fig. 19e.

²⁰⁴ Bergman 1995:63.

²⁰⁵ Schnack 1998:23, 27-28, Figs. 9.6-9.8, 10-12.

²⁰⁶ Schnack 1998:Fig.10.10. The properties of this sheath type vary. Typical is a side seam. Sheath can be seamed with stitching, leather band or with rivets or / and ferrule. Usually the handle section is riveted and the blade section has a ferrule. Ferrules extending the whole length of the sheath also sometimes occur. There is also variation on the suspension slots and also sheaths without slots occur. The excised decoration is usually placed on the seam side of the blade section or the tip. Sometimes it occurs also on the seam side of the handle section or even on the spine of the blade section. The trapezoidal or rectangular cuts are most frequent, but other forms, for example fringes, or excisions like on the Hämeenkatu sheath, occur too. Other decoration can be done by punching or with decorative stitching (Schnack 1998:23, 27-28).

²⁰⁷ Groenman-van Waateringe 1988:88, Fig. 7.2.2, no. 2.

²⁰⁸ van den Berg & Groenman-van Waateringe:1992: Fig.8.1.

²⁰⁹ Groenman-van Waateringe & Guiran 1978:170, Fig. 72.1, Table 83.1.

²¹⁰ Groenman-van Waateringe & Guiran 1978:170, Fig. 72.2, Table 83.2.

²¹¹ Lorenzen 1971:182, Fig. ALI.

²¹² Broberg & Hasselmo 1981:Fig. 27.

²¹³ Broberg & Hasselmo 1981:Fig. 28.

²¹⁴ Gustavson 1981:45-46, Fig. 1; Gustavson & Brink 1979:235-238, Fig. 5.

²¹⁵ Aun 1998:128, Table III:1-2.

²¹⁶ Bebre 1998:Fig. 4.

²¹⁷ Wywrot 1996:275-276, Table 8:5, 36:7, 41:7; 1997:196-197, Table 9:4, 60:6; 1998:243-244, Fig. VIII-3, Table 16:4, 8, 30:7, 67:1; Wywrot-Wysz-

kowska 1999:242-244, Table 7:11, 18:10, 19:1-4, 32:5, 6, 33:1-3, 7, 38:6.

²¹⁸ In addition to the sheaths of Kołobrzeg, I have seen sheaths with cut edge from the 13th and 14th centuries also in the Museum of Szczecin 5.9.2003 and in the find materials of Elbląg 11.9.2003.

²¹⁹ Kaźmierczyk 1970:Figs. 69h, 70f; Samsonowicz 1982: Fig. 26f.

²²⁰ Groenman-van Waateringe 1988:92, Fig. 7.2.4, no. 5 and no. 7.

²²¹ Groenman-van Waateringe 1988:94, Fig. 7.2.5, no. 14.

²²² van den Berg & Groenman-van Waateringe 1992: 351, Fig. 8.15.

²²³ Baart *et al.* 1977:95, Fig. 26.

²²⁴ Groenman-van Waateringe 1976:196, Fig. 26.

²²⁵ Wywrot 1996:Table 36:6; 1997:8:14; 1998:Table 40:4, 114:9; Wywrot-Wyszkowska 1999:Table 5:6, 68:7, 83:4, 91:1.

²²⁶ Schnack 1998:20, Figs. 8.2, 8.4.

²²⁷ Groenman-van Waateringe 1988: Fig. 7.2.5, no. 20; Harjula & Jokela 2003; Jokela 2002:138.

²²⁸ Wywrot 1998:Table 40:7, 91:2-3, 121:4.

²²⁹ Wywrot 1998:121:4. I have seen this and another similar sheath of the same dating in the War Museum of Poland in Kołobrzeg, 8.9.2003.

²³⁰ The sheath is mentioned among the property left by Philippa Fleming of the Yläne estate. Philippa's father was Erik Fleming, the most influential man in Finland in the beginning of the 16th century. Philippa's brother was Constable Klaus Fleming (Bidrag till Finlands historia V:455; Pytkänen 1955: 303; Vilkkuna 1981).

²³¹ Vuorela 1998:438; Vilkkuna 1964:84-90; 1981.

²³² Pälsi 1955:Fig. in p. 44; Sirelius 1921:21.

²³³ Kemppinen & Kemppinen 1976:47; de Neergaard 2000:55.

²³⁴ Cowgill 2000:35; Medieval Catalogue, London Museum 1940:189, Fig. 62:1; 'For hunting, a set of knives would be required to complete the kill correctly, and it would be necessary to carry several knives together.' (de Neergaard 2000:55); Pälsi 1955:49.

²³⁵ Bruhn Hoffmeyer 1980.

²³⁶ Blomqvist 1938:148, 156.

²³⁷ This is also the usual case in the additional sheaths and linings in sheaths of London (Cowgill 2000:35).

²³⁸ I thought that I would be the first to apply the variation analysis, which seems to be one of the basic methods in the textile research, to leather analysis. I then found out that this method had already been used by Milewska (1980) and later by Schia (1989) in estimating the quality of shoes. The method is very simple. Firstly the average distance (the arithmetic

mean M) between the stitch holes is measured. The range of variation (Rv) is then calculated from the maximum and minimum values. The index of the evenness/unevenness of the stitches can be calculated by dividing the range of variation (Rv) with the mean (M). Index 0 means that there is no variation in stitch lengths. The higher the index, the more uneven the stitching is.

However, the stitch length affects very much to the index – with the same variation the index is different, depending of the stitch length. For example, an index of a stitch length with 8 mm mean and 2 mm variation would be 0.25. With the same 2 mm variation but with the shorter, 2 mm stitch length, the index would be 1. Thus, the shorter stitch length would get an index which indicates much lower quality than the longer stitch length with the same variation. In reality, the quality is the same in both cases, the other objects just has longer stitches. Therefore, in this study, I have not calculated the index, but instead used only the range of variation (the measure in millimetres) independent of the stitch lengths.

²³⁹ Of the unprofessional sheaths, sheath 74 has on the basis of the large stitch holes been stitched with a leather thong. It is not included in the material of Fig. 38.

²⁴⁰ See e.g. the form of the shoemaker's knives found from Einbeck (Heege, Volken & Volken 2002:Fig. 625).

²⁴¹ Arkeologiset tutkimukset Åbo Akademin tontilla (Turku 1/7/4) vuonna 1998; Saloranta 1999; Sepänen 1999; 2002.

²⁴² Bolstad 1991:133; Bruhn Hoffmeyer 1980; Schnack 1998:15; Seitz 1965:198-199.

²⁴³ van Driel-Murray 1990:176-179.

²⁴⁴ Of the daggers and dagger-knives, see e.g. Ulmann 1961a; 1961b.

²⁴⁵ In this context must be mentioned that at least in Post-Medieval Finland, it was typical to carry puukko-type knives with asymmetrical blade in symmetrical sheaths. Thus, the symmetrical form of the sheath does not necessarily tell us about the form of the knife (see Chapter 5.3).

²⁴⁶ Blomqvist 1938:Figs. 35-37. A noteworthy aspect is that the tips of the sheaths 36 and 37 seem to have been torn similarly as in the Turku sheath. I would suggest the removal of the chape as the reason for this.

²⁴⁷ Of the dagger finds of Finland, see Taavitsainen & Harjula 2005.

²⁴⁸ Olsen 1982.

²⁴⁹ Blomqvist 1938:151-152; Cameron 2000:38-39; van Driel-Murray 1980:37; Geibig 1991:104, 106;

Oakeshott 1960:239-252; Olsen 1982.

²⁵⁰ E.g. van den Berg & Groenman-van Waateringe 1992:350; Bolstad 1991:140-141; van Driel-Murray 1990:162; Groenman van-Waateringe 1988:84-85; Schnack 1998:44, Fig. 17.

²⁵¹ Cameron 2000:10.

²⁵² If the skin is not fully tanned, an untanned layer remains between the tanned grain and flesh sides of the skin. This kind of raw tanning could be either a consequence of failed tanning process but it could also be done deliberately, when leathers with hardness and of water-repellent quality were needed, for example, for making shoe soles (e.g. Schia 1977: 126). The untanned part of leather decomposes readily in the moist conditions in the soil and the leather becomes 'laminated' in two layers. Fully tanned leathers were softer but not so water-repellent.

²⁵³ Groenman-van Waateringe 1988:103, footnote 1 and the reference. The difference between knives and swords is given in the charters for the guild of the smiths in Flensburg, 24.7.1514. '*Underschet den schwertfegersz unde mestmakersz im beredent: watt benedden der elen isz, behort den mestmaker. Tho bereden und bauen der elen deszelesz den swerttfeger.*' 'Below the ell belongs to the knife-maker, above it to the sword-maker'. The length of 'ell' is 62.8 cm (Schnack 1998:98, footnote 4 and the reference).

²⁵⁴ Schnack 1998:16-17.

²⁵⁵ The longest knife sheath in this research material (79) is 335 mm long.

²⁵⁶ Groenman-van Waateringe 1988:84.

²⁵⁷ van Driel-Murray 1980:40.

²⁵⁸ According to Schnack (1998:38) the pointed mouth-end becomes common from the 13th century onwards in Schleswig. The scabbard from the Old Great Market excavation (204) can be dated by its find context to the period 1350-the beginning of the 15th century, and the other scabbard (205) to the first quarter of the 14th century.

²⁵⁹ Oakeshott 1960:324; Seitz 1965:144.

²⁶⁰ Schnack 1998:39.

²⁶¹ Blomqvist 1938:162.

²⁶² Of the 137 scabbards of Leiden, one contained remains of wood (van Driel-Murray 1990:162). None of the Schleswig's 155 and Svendborg's 17 scabbards contained remains of wood. There are no remains of wooden parts in the Turku material. In this context must be mentioned the scabbard fragment TMM 12788:8, which was found on the sifting work, led by J. Rinne, at the northern wing of the of the main part of Turku Castle in 1904. Fragment's length is 160 mm and width 43 mm. Thickness of leather is 1.5

mm. The scabbard has a closed seam, placed centre-back and stitched with flesh/grain running stitches; the stitch length is 3-4 mm. Leather is attached with adhesive over wooden plates of 2 mm thickness. Unfortunately, the medieval dating of this scabbard can not be confirmed by its find context. The fragment was found with artefacts clearly later than medieval. The artefact is not included in this study.

²⁶³ Volken 2003a.

²⁶⁴ Ibid.

²⁶⁵ Schnack 1998:39.

²⁶⁶ Cameron 2000:59; 2003:3365.

²⁶⁷ Cameron 2000:37-38, 59 and the references; van Driel-Murray 1980:37; Schnack 1998:38. According to Cameron, in England, the Saxon tradition of lining sword scabbards with sheepskins may have come to an end during the late tenth or eleventh centuries. Cameron places the possible origin of textile lining in Scandinavia (Cameron 2000:59).

²⁶⁸ Similar lining of hemp fibres was found on one medieval shoe sole from the Åbo Akademi excavation (TMM 21816:NE509374, see Appendix 2 for this also). Also in this case the vertical fibres go under the horizontal. Like in the scabbard, the horizontal fibres extend between the stitch holes of the sole and they have been stitched over with threads. The fibres have been pressed firmly against the inside of the sole, so probably adhesive was used also in this case.

²⁶⁹ See, for example, the discussion about the experiences of 'best stitch for scabbard' in Yahoo! Groups: medieval-leather in August, 2005. <http://groups.yahoo.com/group/medieval-leather/message/4404>.

²⁷⁰ Bebre 1998:Fig. 2; Bolstad 1991:141; van Driel-Murray 1990:162; Groenman-van Waateringe 1988: 96-102; Kykyri 1997:17; Lorenzen 1971:182; Schnack 1998:17, 38. Bolstad (1991:133, 135) has pointed indirectly to the possibility of distinguishing the sword scabbards from the knife sheaths by the placing of the seam. Schnack (1998:17) has presented the same hypothesis and proved it with the scabbards from Schleswig.

²⁷¹ Cameron 2000:60. One exception to the back seam is the scabbard from Turin, Italy, although not from archaeological context, described by Oakeshott (1960:240-241, Fig. 9b). It is dated to the late 12th century and has a leather cover of vellum, stitched with a side seam.

²⁷² Threads have not been preserved on scabbards. The definition of the stitch types is based on the form and placing of the stitch holes. Shoemaker's stitch, for example, can be identified by the stretched stitch holes caused by the pull of the threads in two

directions (see Chapter 4.3.3).

²⁷³ Drawing according to Oakeshott 1960:239-240. About the scabbard suspension, see also Groenman-van Waateringe 1988:84, Fig. 7.1.1.

²⁷⁴ Oakeshott 1960:239-240.

²⁷⁵ Oakeshott 1960:Fig. 119.

²⁷⁶ Oakeshott 1960:304-307.

²⁷⁷ van Driel-Murray 1990:171, 173, Fig. 11.

²⁷⁸ Examples of this mode of suspension: see e.g. van den Berg & Groenman-van Waateringe 1992: Fig. 7.1-3; Blomqvist 1938:162-164, Fig.44; van Driel-Murray 1990:169, 171, 173, Figs. 10a, 11d; Groenman-van Waateringe 1988:84, Fig. 7.3.3, no. 4; Lorenzen 1971:182, Fig. DHU; Schnack 1998:39, 43, Fig. 20; Seitz 1965:Fig. 84.

²⁷⁹ Groenman-van Waateringe 1988:84; Schnack 1998:17.

²⁸⁰ Line along one edge: Groenman-van Waateringe 1988:Figs. 7.3.1, no:s 1&2; 7.3.4, no. 7. Line along both edges on the backside:Fig. 7.3.5, no.10.

²⁸¹ Bebre 1998:193-194 (Riga); van Driel-Murray 1990:162 (Leiden); Groenman-van Waateringe 1988: 84 (Svendborg); Schnack 1998:179 (Schleswig).

²⁸² Blomqvist 1938:Figs. 38-39, 41, 43a-b (Lund).

²⁸³ Bebre 1998:193-194; Schnack 1998:43.

²⁸⁴ Groenman-van Waateringe 1988:83-84.

²⁸⁵ There is at least one wooden (TMM 21816:P2423)) and one iron creaser (TMM 21816:A1403) from the latter half of the 14th century or beginning of the 15th century from the Åbo Akademi excavation.

²⁸⁶ Goodall 1990:249; Salaman 1986:6, 200, 247-252, Figs. 1:5, 4:5d, 9:32.

²⁸⁷ Volken 2003a.

²⁸⁸ Volken 2003a.

²⁸⁹ Volken 2003b.

²⁹⁰ Broberg & Hasselmo 1981:Fig. 28, an artefact third from the left.

²⁹¹ Bergman & Billberg 1976:Fig. 349; Blomqvist 1938:Fig. 41; Groenman-van Waateringe 1988:Fig. 7.3.5, no. 10. In the Svendborg scabbard the back seam continues to the front face as in the Old Great Market Place scabbard **208**. Also the lozenges change similarly to chevrons when they meet the seam.

²⁹² Valonen 1958:Table 14.

²⁹³ Schnack 1998:Figs. 21.3, 21.4.

²⁹⁴ Baart *et al.* 1977:100, Figs. 40, 41; van Driel-Murray 1990:173,175, Fig. 13 (Leiden); Oakeshott 1960: 229-230, Plate 8c (an example from Italy); Schnack 1994:39, Table 41:346, 1874, 3814 (Konstanz); there is also one fragment from Kołobrzeg, which in my opinion on the basis of the ribs and the triangular end could be a piece of a grip covering, even if catalogued as a knife sheath (Wywrot-Wyszkowska 1998:243-

244, Table 16:1). Also an artefact from Svendborg (Groenman-van Waateringe 1988:Fig. 7.2.1, no: 2), catalogued as knife sheath, is in my opinion, a grip covering.

²⁹⁵ van Driel-Murray 1990:173,175, Fig. 13.

²⁹⁶ Baart *et al.* 1977:100, Figs. 40, 41.

²⁹⁷ Schnack 1994:39, Table 41:346, 1874, 3814.

²⁹⁸ Carrying of the dagger became in fashion widely in the 14th century Europe (Oakeshott 1960:336-338).

²⁹⁹ After about A.D. 1350 the grips of the ‘hand-and-a-half’ length became very common in the swords in Europe. The swords were still single-handed weapons but could at need be wielded in both hands. The grips of swords of this type were usually about 7 inches (ca. 18 cm) long (Oakeshott 1960:308-309). Thus, the length and the dating match well with the grip covering **212**.

³⁰⁰ Oakeshott (1960:330-331) presents one example of the construction where the wooden hilt is bound with twine over which is a covering of leather. The sword in question is from the first half of the 15th century.

³⁰¹ van Driel-Murray 1990:175-176; Oakeshott 1963: 229; Schnack 1994:39.

³⁰² van Driel-Murray 1990:175-176, Fig. 14 (Leiden, early 14th century); Schnack 1994:39, Table 41: 1153, 2076/3243/3228, 3300, 4092 (Konstanz, 14th century); Wywrot 1997:Table 11:4, 198 (Kołobrzeg, first half of the 14th century, catalogued as ‘futtal’, Eng. *case*); Wywrot-Wyszkowska 1998:Table 30: 6, 244 (Kołobrzeg, second half of the 14th century, catalogued as ‘futtal’).

³⁰³ van Driel-Murray 1990:196, Fig.14.

³⁰⁴ Schnack 1994:39, Table 41:1153, 2076/3423/ 3228, 3300, 4092.

³⁰⁵ Wywrot 1997:Table 11:4, 198; Wywrot-Wyszkowska 1998:Table 30:6, 244.

³⁰⁶ Like the archaeological examples, also medieval pictorial evidence of rain guards seems to be rare. See, however, Hildebrand 1983b:Fig. 186a; Nicolle 1999:192, 194-195, Figs.512c, 515, 519, 522a, 632; Voronova & Sterligov 1996:Fig. 152. According to Nicolle (1999:191), one reason for the infrequent pictorial sources of rain guards could be that in less-detailed pictorial sources the apparent *langet* (downwards protruding part of the metal guard of the sword) could in many cases actually be a ‘weather-proofing hood, cap or washer’ (i.e. the rain guard of leather or fabric).

³⁰⁷ Kristensen 1983.

³⁰⁸ Groenman-van Waateringe 1988:121-122.

³⁰⁹ Lindberg 1989:41.

³¹⁰ Kallioinen 2000:218.

³¹¹ About the problems and source criticism in identification the craftsmen, see e.g. Heino 1985:37-45; 1997:22-25; Himanen 1971:11-26; Kallioinen 1997: 87-88; 2000:217-218.

³¹² Kallioinen 2000:218.

³¹³ REA 86.

³¹⁴ FMU II 1783.

³¹⁵ Kuujo 1981:109-110.

³¹⁶ REA127.

³¹⁷ FMU V 4187.

³¹⁸ Kallioinen 2000:216.

³¹⁹ Norberg 1981.

³²⁰ Granlund 1982.

³²¹ Blomqvist 1938:168; Bolstad 1991:135; Hildebrand 1983a:584; Stigum 1982; Thålin 1982.

³²² Blomqvist 1938:168; Stigum 1982.

³²³ Kuujo 1981:162.

³²⁴ Dahlbäck 1988:87; Jäfvert 1981:211-213.

³²⁵ Kallioinen 2000:220; Kuujo 1981:165.

³²⁶ Gardberg 1971:301.

³²⁷ Kallioinen 2000:Appendix 1.

³²⁸ Cowgill 2000:32-33.

³²⁹ Dahlbäck 1988:83-98.

³³⁰ It must be remembered, however, that also other factors than the population could have affected to the specialisation, for example, the interests of the town and the different needs for certain crafts (Kallioinen 2000:219-221).

³³¹ The 'tattered', tissue-like leather waste was firstly thought to have been produced in the scraping of the untanned skins. However, the question of how the scraping waste could have been preserved was evolved. Untanned skin waste should degrade in a few days. Conservator Maarit Ahola tested some of this waste for to know if the waste included tanning substances. In the test, ferrochlorid, FeCl_3 , is dropped on the waste. If the dark spot appears on the tested piece, the skin includes vegetable tannins. According to the results, the waste included vegetable tannins. Thus, the waste derives either form the phase of

the thinning of the skins, which was done after the tanning treatment or from the cleaning between the phases of the tanning process.

The only published reference material to this 'currying waste' seems to be from 16-22 Coppergate, York (Mainman 2003:3254-3255). Of the leather working evidence in the Åbo Akademi site including currying waste, see Harjula 2002:130).

³³² Saloranta 1999:24-25; Seppänen 1999:30. Tanning vat: TMM 21816:KP12857.

³³³ Lasts: TMM 21816:KP17231, KP50386; Master forms or cutting models of soles: NE2119, NE14113, NE13868, NE08233, NE110209; Shoemaker's knife: MT5031; Creasers: P2423, A1403; Awl: KP50717.

³³⁴ Kaukonen 1981a:106-107; Lempiäinen 2003:329-330; Appendix 2.

³³⁵ Kaukonen 1981b; Appendix 2.

³³⁶ Lempiäinen 2003:333-334; Appendix 2.

³³⁷ Discussion with M.A. Heini Kirjavainen.

³³⁸ Schnack 1998:38; van Driel-Murray 1980:39; 1990:162; Bolstad 1991:135; Cameron 2000:59, 61; 2003:3364, 3365.

³³⁹ Marstein 1989:97.

³⁴⁰ van Driel-Murray 1980:39; 1990:162.

³⁴¹ Schnack 1998:38.

³⁴² Cameron 2000:59.

³⁴³ Cameron 2000:61; 2003:3364-3365.

³⁴⁴ Bolstad 1991:135.

³⁴⁵ Blomqvist 1938:166-168.

³⁴⁶ Goubitz 2001:41.

³⁴⁷ Discussion with Lic.Phil Aki Pihlman.

³⁴⁸ Bidrag till Finlands historia IV:188, 196, 199, 216; V:455; Pykkänen 1955:284, 286, 303.

³⁴⁹ Hellner 1981; Hildebrand 1983a:446-447; 1983b: 305-311.

³⁵⁰ Pukkila 1999:41-42.

³⁵¹ Discussion with M.A. Jouko Pukkila.

³⁵² About the recent ideas concerning the founding of Turku, see e.g. Hiekkanen 2003b.

³⁵³ E.g. Creutz 2003; Peets 2003.

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APPENDIX 1

TECHNICAL PROPERTIES OF THE KNIFE SHEATHS IN TABLE FORMAT

Sheaths from the Åbo Akademi main building site excavation

D1 – dating ‘latter half of the 14th century – first half of the 15th century’, **D2** – dating ‘latter half of the 15th century – beginning of the 16th century’, **D3** – dating ‘latter half of the 16th century’

Entry no.	Butted seam	Closed seam	Lapped seam	Side seam	Back seam	Shoemaker's stitch	Running stitch	Whip stitch	Riveted seam	Thong seaming	D1	D2	D3
15		x			x	x						x	
16	-	-	-	-	-	-	-	-	-		x		
17		x			x	x							x
18	x				x	x						x	
19		x			x	x						x	
20		x			x	x						x	
21			x	x				x				x	
25		x			x	x					x		
26	x				x			x					x
27		x		x				x				x	
28		x			x	x					x		
29		x			x	x						x	
30		x			x	x							x
31		x			x	x					x		
32		x		x					x		-	-	-
33		x		x		x					-	-	-
34		x		x		x							x
35		x			x	x							x
36		x			x	x						x	
37		x			x	x					x		
38		x			x	x					x		
39		x		x			x				x		
40		x		x		x					x		
41		x			x	x					x		
42		x			x		x				x		
43		x		x		x					x		
44		x			x	x					x		
45		x		x		x					x		
46		x		x		x					x		
47		x		x			x				x		
48		x		x				x			x		
49		x		x		x					x		
50		x		x		x						x	
56		x			x	x						x	

Entry no.	Butted seam	Closed seam	Lapped seam	Side seam	Back seam	Shoemaker's stitch	Running stitch	Whip stitch	Riveted seam	Thong seaming	D1	D2	D3
57		x		x			x					x	
58		x			x	x		x				x	
59		x		x		x					x		
60		x			x	x					x		
61		x			x	x					x		
62		x			x	x						x	
63		x		x		x					x		
65		x		x			x				x		
66		x		x				x			x		
67		x		x			x	x			x		
68		x		x			x	x			x		
69		x		x				x			x		
70		x		x			x				x		
71		x		x			x				x		
72		x		x				x			x		
73		x		x				x			x		
79		x			x	x					x		
80		x			x	x					x		
82		x			x	x					x		
83		x			x	x					x		
84	x				x			x			x		
85		x			x	x					x		
86		x			x	x					x		
87		x			x	x					x		
88		x		x				x			x		
89		x		x		x					x		
90		x		x		x					x		
91		x		x		x					x		
92		x		x		x					x		
93		x			x	x					x		
94		x		x		x					x		
95		x		x		x					x		
96	x				x			x			x		
97		x		x		x					x		
98		x		x		x					x		
99		x		x			x				x		
100		x			x	x					x		
101		x		x		x					x		
102		x			x	x					x		
103		x		x		x					x		
104		x			x	x					x		
105		x		-	-	x					x		
106	x				x	x					x		
107		x			x	x					x		
108		x			x	x					x		
109		x		x		x					x		

Entry no.	Butted seam	Closed seam	Lapped seam	Side seam	Back seam	Shoemaker's stitch	Running stitch	Whip stitch	Riveted seam	Thong seaming	D1	D2	D3
110		x		x		x					x		
111		x		x		x					x		
112	x				x	x					x		
113		x			x	x					x		
114		x		-	-	x					x	x	
115		x		x		x					x	x	
116		x		x		-	-	-			x	x	
117		x		x		x					x	x	
118		x		-	-	x					x		
119		x			x	x					x		
120		x			x			x			x		
138		x			x			x			x		
139		x			x		x				x		
140		x			x	x					x		
141		x			x	x					x		
142		x		-	-	x					x		
143		x		x		x					x		
144		x			x	x					x		
145		x			x	x					x		
146		x			x	x					x		
147		x			x	x					x		
148		x			x			x			x		
149		x			x	x					x		
150		x		x		x					x		
151		x			x	x					x		
152		x		-	-	x					x		
153		x		-	-	x					x		
154		x			x	x					x		
155		x		-	-	x					x	x	
156		x			x	x					x	x	
157		x			x	x					x	x	
158		x			x	x					x	x	
159		x		-	-	x					x	x	
160		x			x	x					x	x	
161		x		x		x					x	x	
162		x			x		x				x	x	
163		x			x	x					x	x	
164		x		x		x					x	x	
165		x		x		x					x	x	
166		x		x		x					x	x	
167		x			x	x					x	x	
168		x			x	x					x	x	
169		x			x	x					x		
170		x			x	x					x		
171		x			x	x					x		
172		x			x	x					x		

Entry no.	Butted seam	Closed seam	Lapped seam	Side seam	Back seam	Shoemaker's stitch	Running stitch	Whip stitch	Riveted seam	Thong seaming	D1	D2	D3
173		x			x		x				x	x	
174		x			x	x					-	-	-
175	-	-	-	-	-	x					-	-	-
176		x			x			x			x		

SHEATHS FROM THE OTHER SITES OF TURKU

D1 – dating ‘first half of the 14th century’, **D2** – dating ‘latter half of the 14th century – first half of the 15th century’, **D3** – dating ‘latter half of the 15th century – beginning of the 16th century’, **ME** – dating ‘medieval’

Entry no.	Butted seam	Closed seam	Side seam	Back seam	Shoemaker's stitch	Running stitch	Whip stitch	Riveted seam	Thong seaming	D1	D2	D3	ME
9		x	x					x		x?	x?		
10		x	x					x		x?	x?		
11		x	x					x		x?	x?		
12		x	x					x		x?	x?		
13		x	x					x		x			
14		x	x					x					x
22		x		x	x					x?	x?		
23		x		x	x								x
24		x		x	x								x
51	x			x	x								x
52		x		x	x								x
53	x			x	x						x?	x?	
54													x
55		x		x	x						x		
64		x	x			x							x
74		x	x						x	x			
75		x	x			x							x
76		x	x			x							x
77		x	x			x	x						x
78		x	x		-	-	-			x			
81		x	x			x				x?	x?		
121		x	x		x								x
122		x	x		x					x			
123		x		x	x					x			
124		x	x					x					x
125		x	x					x					x
126		x		x	x						x		
127		x		x	x							x	
128		x		x	x								x
132		x		x	x								x
133		x		x	x								x
134		x		x			x						x
135	-	-	-	-	-	-	-	-			x		
136		x	x		x						x		
137		x		x	x					x			
221		x	x					x			x		

APPENDIX 2

HEINI KIRJAVAINEN:

REPORT ON FIBRES FROM THE MEDIEVAL ÅBO AKADEMI AND ABOA VETUS SITES, TURKU, FINLAND

INTRODUCTION

Samples of plant fibres from sewing threads of knife sheaths and scabbards were supplied for analysis. Samples were taken from the seams and needle holes of the late medieval sheaths and scabbards. One sample (TMM 21125:47) was taken from Aboa Vetus museum excavation material (1992) and all the other numbers with accession code TMM 21816 originate from the Åbo Akademi excavation (1998). A total of 39 different samples originate from all the 163 examined scabbards and sheaths, except one (TMM 21816:NE20478), which is possibly from a shoe sole.

METHOD OF EXAMINATION

The fibres were studied at x250 magnification with transmitted light microscope. In addition, polarizing microscope was used to get identification more accurate. Fibres were examined by longitudinal view in whole mounts and not in cross-section due to small sample size (see Identification of Textile Materials 1985:136). Specimens of thread were ranging between 0,5 and 2 mm. Sometimes it was necessary to bleach fibres with sodium hypochlorite (NaClO) to get clearer view on fibre structure (Jokelainen 1984:157).

IDENTIFYING CHARACTERISTICS OF BAST FIBRES

A reference group of present bast fibres; flax, nettle and hemp were prepared for examination. In the case of archaeological fibres, identification is more difficult because of the fibre deterioration during the burial. Sometimes parts of epidermis and cortex were preserved making the identifying easier especially when it was hemp fibres in question (see for example Catling & Grayson 1998:19). *Fungal mycelium* had been penetrated all the fibres under study, sometimes making it impossible to identify them (see Körber-Grohne 1985:182).

Flax (*Linum usitatissimum* L.) fibre is up to 20 µm in diameter. Its narrow and round shaped lumen runs through the fibre that is under 1/3 in diameter. On fibre surface can be seen clear transverse lines, usually in X-shape. Flax has usually sharp to blunt fibre cell ends and a single fibre turns slightly into s-direction but sometimes also z-direction (Körber-Grohne 1967:161-162; Puolakka 1987:10).

Nettle (*Urtica dioica* L.) has diameter range of 21-63 µm. Lumen is wide, ribbon like and flat and it is over 1/3 in diameter. Fibre surface seems wide and flat and it has slight transverse lines. Nettle has a blunt cell end and a single fibre has a strong z-twist (Körber-Grohne 1967:161-162).

Hemp (*Cannabis sativa* L.) has a very wide variation of fibre diameters, ranging from 12 µm up to 70 µm. Lumen is wide and slightly unnoticeable. Its width is over 1/3 in diameter and it is continuous to the blunt and sometimes to a bifurcated cell end. Fibre surface has transverse lines, stoma i.e. a small perforation in epidermis of stem. A single fibre has a weak s-direction (Körber-Grohne 1967:161-162; 1985:133; Puolakka 1987:10).

FIBRE PROCESSING

All the annual bast fibres have rather same pre-processing before spinning. After the straw had been dried, a ripple comb was used for removing the seeds. When dew retting or wet retting was completed, the stems were beaten with a club. After that, shives were removed with scutching knife. Hackling and combing the fibres separated the tow from finer fibres (Hoffmann 1991:206).

RESULTS

Type of fibre has been recorded. Furthermore, the spin direction of the sewing thread has been noted in all cases when it has been possible.

The marking with s- or z-direction means single twist of a thread. S- or Z-ply thread means two z- or s-twisted threads twined together. Thread diameters were not measured.

<u>Sample direction</u>	<u>Fibre</u>	<u>Spin</u>
TMM 21125: 47	hemp in both layers	-
TMM 21816: NE04931	hemp	-
TMM 21816: NE0655	hemp	-
TMM 21816: NE0663	hemp	-
TMM 21816: NE078102	hemp	-
TMM 21816: NE07832	hemp	-
TMM 21816: NE07852	hemp	-
TMM 21816: NE08234	hemp	-
TMM 21816: NE08516	hemp	-
TMM 21816: NE1015	hemp	-
TMM 21816: NE11247	hemp	-
TMM 21816: NE12740	hemp?	-
TMM 21816: NE128204	nettle?	-
TMM 21816: NE13611	hemp	-
TMM 21816: NE147111	hemp	-
TMM 21816: NE15974	hemp	-
TMM 21816: NE164119	hemp	-
TMM 21816: NE164135	hemp	-
TMM 21816: NE16481	hemp	-
TMM 21816: NE1728	hemp	-
TMM 21816: NE17317	nettle?	-
TMM 21816: NE2011	flax	-
TMM 21816: NE201135	hemp	z
TMM 21816: NE201148	flax?	-
TMM 21816: NE201168	unidentified	-
TMM 21816: NE20153	nettle?	Z
TMM 21816: NE204238	hemp	S
TMM 21816: NE20478	hemp in both layers	-
TMM 21816: NE209209	hemp	-
TMM 21816: NE500110	unidentified	-
TMM 21816: NE50399	unidentified	-
TMM 21816: NE504118	hemp	s
TMM 21816: NE504176	hemp	s
TMM 21816: NE504208	hemp	-
TMM 21816: NE504383	hemp	-
TMM 21816: NE504423	hemp	s
TMM 21816: NE504457	nettle	-
TMM 21816: NE50585	flax?	-
TMM 21816: NE509149	nettle	s
TMM 21816: NE51253	hemp	-

SUMMARY

HEMP

Hemp is the most prominent fibre material used in sewing of seams of scabbards and sheaths. Altogether, in 29 items have hemp thread or fibre preserved. The possible shoe sole (TMM 21816: NE20478) has two overlapping fibre layers, a longitudinal and transverse layer. The same method has been used in the scabbard (TMM 21125:47) lining.

Hemp seems to be a common cultivated plant during the middle ages also in Turku (Lempiäinen 2003:329-330). Hemp has been used for payment of taxes. In addition, it was imported from the Baltic countries and Russia (Kaukonen 1981:106-107). Hemp fibres are very water-resistant and they have been used as thread for weaving cloth, sacks and sails but also making of ropes. It has been commonly cultivated in Europe, too. (Körber-Grohne 1988:383).

NETTLE

Altogether five samples have been identified as nettle fibres of which three pieces are uncertain. Nettle is somewhat weaker and finer fibre than hemp. It is possible that nettle fibres have been spun together with hemp or flax fibres to make the thread stronger (Geijer 1981:285).

As a culture plant, nettle seeds are plentiful in the medieval Turku deposits (Lempiäinen 2003: 333-334). Nettle has been used as fibre plant since pre-historical times in Europe (Körber-Grohne 1967:162). It seems improbable that fibres have been imported to Finland because of its abundance. In Sweden, first literary mentions of nettle cloth as linen are from the 17th century (Geijer 1981:285-286). When considering the present study, it is apparent that nettle has been used for sewing thread in the medieval Finland.

FLAX

Flax was the minor group with two uncertain specimens and one certain identification. The preservation of flax fibres were very poor because of fungal hyphae that had penetrated into the fibres.

Flax cultivation has been common in Europe since Stone Age (see a compact history of flax in Lempiäinen 2003:330). But few flax pods

have been found in medieval Åbo Akademi deposits and supposedly it has been cultivated and handled outside the town (Lempiäinen 2003: 330). As flax fibre, it may have been imported from the Baltic countries or Russia (Kaukonen 1981:581). In addition, the absence of pods or fibre finds in the present study can indicate that it has not been used in the same amounts as hemp in the medieval Turku.

UNIDENTIFIED FIBRES

Altogether three unidentified samples remained due to poor preservation. In addition, fungal mycelium had been penetrated the fibres so badly that it made identification impossible.

SEWING THREAD

The 21 studied items contained pieces of thread, four of them s-twisted single threads. They are probably the preserved fragments from Z-ply threads because separate strands are not strong enough for seaming leather objects. A single z-twisted piece of thread is probably from S-ply yarn. Only two thread fragments, S- and Z-ply, have both intertwining threads preserved together. In addition, it seems that the natural fibre twist has no great influence on a spinning direction.

ABBREVIATIONS:

KLNM = Kulturhistoriskt lexikon för Nordisk medeltid.

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APPENDIX 3

INDEX OF ENTRIES BY THE GROUP, TYPE AND DECORATION OF THE ARTEFACTS

UNDATED OR RECENT SHEATHS AND SCABBARDS FROM ARCHAEOLOGICAL CONTEXTS, EXCLUDED FROM THE STUDY

ENTRIES BY THE ARTEFACT GROUP

Sheaths: 9-128, 132-176, 221
Scabbards: 54 (uncertain) 131, 177-211
Grip coverings: 129, 130, 212 - 217
Rain guards: 218, 223, 224
Ferrules: 219

ENTRIES BY THE ARTEFACT TYPE

Sheath caps: 1 – 8, 222
Sheaths with excised decoration on the edge: 9, 10, 221
Sheaths with rows of suspension slots on the handle: 11 - 14
Sheaths with paired, lunate slits on the handle: 32, 98, 115, 125
Sheaths with a place for additional knife or tool: 15 - 24
Additional sheaths: 26, 27
‘Unprofessional’ sheaths: 64 - 78
Sheaths for special knives or tools: 46 – 50
Sheaths for daggers or dagger-knives: 18
Sheaths for *puukko*-knives: 28-45

ENTRIES BY THE DECORATION (SHEATHS)

Linear: 36, 62, 63, 68, 82, 94, 95, 100, 105, 117, 118, 134, 136, 162, 176
Chevrons (& linear): 30, 33, 40, 90, 103, 104, 109, 113, 152, 153, 155, 166, 171
Triangular indents: 101
Lozenges & herringbone: 140
Ellipses: 91
Circles: 28
Lattice: 16, 37, 35, 61, 70, 84, 102, 132, 144, 168, 170
Lunate slits: 32, 98, 115, 125
Stamped dotting: 17, 31, 123
Interlace: 15, 24, 158
Foliate: 18, 19, 20, 21, 25, 29, 34, 58, 60, 80, 85, 86, 111, 112, 122, 126, 128, 133, 138, 159, 167, 172

Other type of plant decoration: 17, 119, 163, 169
Zoomorphic decoration: 22
Graffiti-like decoration: 28, 32, 35, 70, 105, 114
Stitched decoration: 55
Paired suspension slots (horizontal thongs): 11, 12, 13, 14
Excised edge & paired suspension slots (horizontal thongs): 9, 10, 221
Paired lunate slits & braided handle (vertical thong): 32, 98

ENTRIES BY THE DECORATION (SCABBARDS)

Impressed longitudinal lines: 178, 179, 180, 181, 186, 188, 189, 192, 193, 198, 199, 200, 201, 202, 203, 204, 208, 211
Lozenges: 203, 206, 207, 208
Chevrons: 208
Stars: 210
Transverse line filled with dots and lines branching: 204
Impressed marks: 179, 180, 181, 182, 193, 198

UNDATED OR RECENT SHEATHS AND SCABBARDS FROM ARCHAEOLOGICAL CONTEXTS, EXCLUDED FROM THE STUDY

TMM 20671:188
Sheath from the upmost layer of Uudenmaankatu 6 excavation
TMM 17296:84b
Sheath from Uudenmaankatu 5a groundwork; recent material with the same accession number
TMM 17017:248K
Sheath from the sewer construction between Hovioikeudenkatu and Vähä-Hämeenkatu; pieces of heeled shoes with the same accession number
TMM 12780:18
One sheath and two sheath fragments from Turku Castle; recent material with the same accession number
TMM 12788:8

Scabbard from Turku Castle; with the same accession number come bracteates from the 14th century but also recent find material

TMM 13275:13.c.99

Sheath from Turku Castle, recent material from the same context

TMM 13275:25a.90

Sheath from Turku Castle, recent material from the same context

TMM 13275:25a.91

Sheath from Turku Castle, recent material from the same context

APPENDIX 4

CATALOGUE

The order of entries represents the sequence in which the artefacts were recorded. See Appendix 3 for the index of entries by the group, type and decoration of the artefact.

The information of the contexts of the finds from the Åbo Akademi excavation can be found from the excavation report (*Arkeologiset tutkimukset Åbo Akademin tontilla (Turku I/7/4) vuonna 1998*). The dating of the finds from the Åbo Akademi excavation is based on the find contexts. The relative-chronological matrices of the excavation (Seppänen 2003) are used in dating the find contexts, if not stated otherwise. Any errors or misinterpretations concerning the matrices remain my own.

The sources for the contexts and datings of the finds from other excavations and construction works are mentioned separately in each case. The reference, which is frequently repeated, is the Register of town archaeology. This is a register, kept of the archaeological activities in Turku. The location of the register is at the Turku Provincial Museum.

The artefacts catalogued with the TMM-accession number (Turku Provincial Museum) are kept in the Turku Provincial Museum. The artefacts from Aboa Vetus excavations are kept in the Aboa Vetus Museum. The artefacts from the yard of the outer bailey of the Turku Castle are kept in the castle at the department of the National Museum. The deposition of the few artefacts in the central store of the National Museum at Orimattila and at the exhibitions of permanent type is mentioned separately in each case.

Measures have been given out in millimetres with an accuracy of one millimetre. An exception is the thickness of leather of which the item in question is manufactured. The thickness of leather is given with an accuracy of half a millimetre. If the item is fragmentary or the original measure cannot be estimated reliably, the measure given is in brackets in the catalogue.

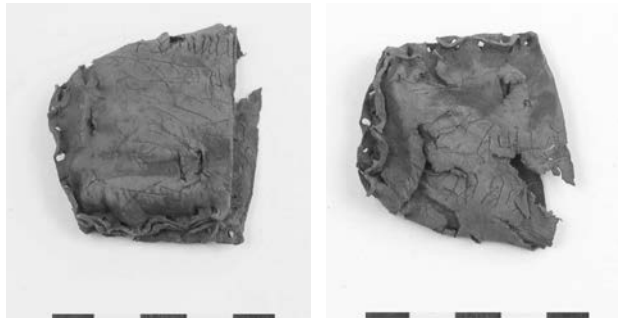
All photographs and drawings: Janne Harjula / Turku Provincial Museum, except no:s 9-12, 22, 53, 81, 129-131: Janne Harjula / Aboa Vetus museum and no:s 13-14, 74-78, 124, 125, 200: Janne Harjula.

Drawing 22: Appelgren 1902:Fig. 7.

Drawing 126: Mikkonen-Hirvonen 1991: Fig. in p. 70.

Drawing 210: Valonen 1958: Table 14.

1. Cat. no: TMM 21816:NE06926



Find place: Åbo Akademi excavation 1998
Context: M69J+M69L (Kemicum)

Knife sheath's cap L. 50 mm, w. 50 mm. Thickness of leather 1 mm. Calf leather.

Closed seam with flesh/grain stitches on top of the cap, continues to the side; stitch type 1

A paired suspension slot on both sides

Here and there some rune-like scratches, uninterpreted

Dating: latter half of the 14th century - first half of the 15th century

2. Cat. no: TMM 21816:NE11810



Find place: Åbo Akademi excavation 1998
Context: M118 (Kemicum)

Knife sheath's cap L. 30 mm, w. 35 mm. Thickness of leather 2 mm. Calf leather.

Closed seam with flesh/grain stitches on top of the cap, continues to the side; stitch type 1

A paired suspension slot on both sides

Dating: latter half of the 14th century – first half of the 15th century

3. Cat. no: TMM 21816:NE17317

Find place: Åbo Akademi excavation 1998
Context: M173 (Kosmorama B)

Knife sheath's cap L. 41 mm, w. 38 mm. Thickness of leather 2 mm. Calf leather.



Closed seam with flesh/grain stitches on top of the cap, continues to the side; stitch type 1

Two paired suspension slots on top of each other on both sides

Decoration:

Technique: engraving

A transverse field of lattice and chevrons

Dating: latter half of the 14th century – (beginning of the 15th century)

4. Cat. no: TMM 21816:NE201168



Find place: Åbo Akademi excavation 1998
Context: M201 (Kemicum)

Knife sheath's cap L. 34 mm, w. 41 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam with flesh/grain stitches on top of the cap, continues to the side; stitch type 1 Thread preserved in the stitch holes.

A paired suspension slot on both sides

Decoration:

Technique: punching

Rings

Dating: latter half of the 14th century - beginning of the 15th century

5. Cat. no: TMM 21816:NE20492



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath's cap L. 39 mm, w. 35 mm. Thickness of leather 2 mm. Calf leather.

Closed seam with flesh/grain stitches on top of the cap, continues to the side; stitch type 1

A paired suspension slot on both sides

Dating: latter half of the 14th century – beginning of the 15th century

6. Cat. no: TMM 21816:NE204266



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath's cap L. 39 mm, w. 47 mm. Thickness of leather (1) mm (laminated). Calf leather.

Closed seam with flesh/grain stitches on top of the cap, continues to the side; stitch type 1

A paired suspension slot on both sides

Decoration:

Technique: engraving

Faintly discerning lattice?

Dating: latter half of the 14th century – beginning of the 15th century

7. Cat. no: TMM 21816:NE2077



Find place: Åbo Akademi excavation 1998
Context: M207 (Kemicum)

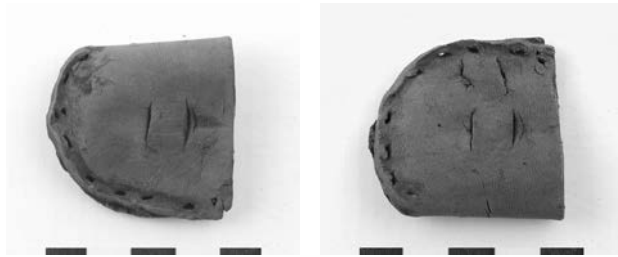
Knife sheath's cap L. 38 mm, w. 35 mm. Thickness of leather 2 mm. Calf leather.

Closed seam with flesh/grain stitches on top of the cap, continues to the back; stitch type 1

A paired suspension slot on both sides of the seam on the back

Dating: latter half of the 14th century – beginning of the 15th century

8. Cat. no: TMM 21816:NE504457



Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath's cap L. 47 mm, w. 40 mm. Thickness of leather 2.5 mm. Calf leather.

Closed seam with flesh/grain stitches on top of the cap, continues to the side; stitch type 1

A paired suspension slot on one side; on the other side two parallel, paired slots

Dating: latter half of the 14th century – beginning of the 15th century

9. Cat. no: KM 4034:59



Find place: groundwork pit for a new building, Hämeenkatu 17, 1901
Context: 'from the clay layer, from 3 to 4 metres deep' (Appelgren 1902:53)
Present location: The Medieval exhibition at the Turku Castle

Knife sheath L. 195 mm, w. 32 mm. Handle l. 75 mm, blade l. 120 mm. Thickness of leather 1.5 mm. Goat or sheep leather.

Closed side seam, handle section riveted with five tin or bronze rivets, 4 are still attached, one is missing. Rivets of the handle are round headed; Blade section riveted with four tin or bronze rivets with a shape of five or six-petalled flowers, only one survives; there are also remnants of the metal ferrule on the edge of the blade section

On the handle, two vertical lines of paired slots, five slots in each row

Decoration:

Technique: excision

Decoratively excised edge on the blade section of the seam side; also; two decorative? angular slashes on the

tip of the sheath

Dating: 14th century?

10. Cat. no: KM 96001:4521



Find place: excavations of the outer bailey of the Turku Castle
Context: square E15, layer VIII

Knife sheath L. 185 mm, w. 42 mm. L. of handle 85 mm, l. of blade 100 mm. Thickness of leather 1.5 mm. Calf leather.

Closed, riveted side seam. Six round-headed rivets (diameter 5 mm) attached on the handle. Blade seam is torn, no rivets left.

On the handle, two vertical rows of paired slots; six slots on a row, correspond to the rivet number and placement.

Decoration:

Technique: cutting

On the blade section, probably originally a decoratively cut blade side

Dating: phase 2; from a filling layer formed in the middle of the 15th century probably containing older material (Pihlman 1995:156-158, 166-168, Appendix 7.2).

11. Cat. no: KM 96001:4443



Find place: excavations of the outer bailey of the Turku Castle, 1978-1985
Context: square H16, layer VI

Knife sheath L. 132 mm, w. 23 mm. Thickness of leather 1.5 mm. Calf leather.

Closed side seam, riveted. Six rivet holes on the handle, missing from the blade section.

A vertical row of paired suspension slots on the handle. Four slots on a row.

Quite similar to sheath 12 but larger

Dating: phase 2; from a filling layer formed in the middle of the 15th century probably containing older material (Pihlman 1995:156-158, 166-168, Appendix 7.2).

12. Cat. no: KM 96001:4511



Find place: excavations of the outer bailey of the Turku Castle, 1984
Context: square H17, layer VII

Knife sheath L. 105 mm, w. 19 mm. Thickness of leather 1 mm. Calf leather.

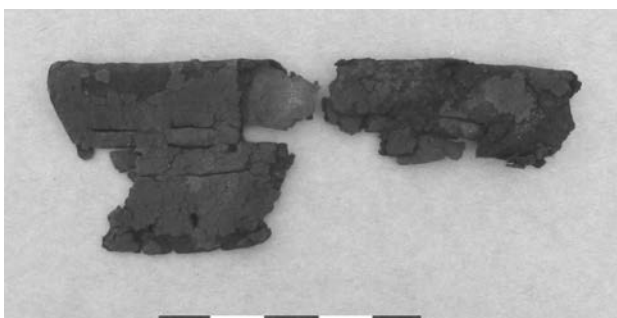
Closed side seam, riveted? Five stitch/rivet holes on the handle, missing from the blade.

A vertical row of paired suspension slots on the handle; three slots in a row.

Quite similar to sheath 11 but smaller

Dating: phase 2; from a filling layer formed in the middle of the 15th century probably containing older material (Pihlman 1995:156-158, 166-168, Appendix 7.2).

13. Cat. no: KM 95032:10125



Find place: The Aboa Vetus excavation 1994-1995
Context: R49, under R25, KU18

Knife sheath, two fragments. L. (50) mm, w. (35) mm and l. (50), w. (20) mm. Thickness of leather (1) mm. Calf leather.

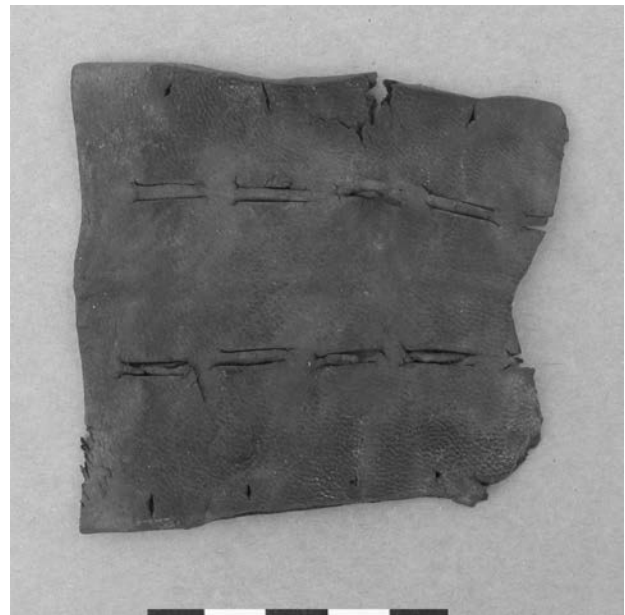
Closed side seam; one rivet hole? preserved

Remains of rows of paired suspension slots

Dating: first half of the 14th century

Published account: Jokela (2002:136)

14. Cat. no: KM 95032:10359



Find place: The Aboa Vetus excavation 1994-1995
Context: NW of the R63, KU140

Knife sheath, a cut upper end. L. (80) mm, w. 75 mm (opened). Thickness of leather 1.5 mm. Calf leather.

Closed, riveted side seam

Two vertical rows of paired suspension slots on the handle; four and a half slots / row preserved

Dating: the Middle Ages

Published account: Jokela (2002:138)

15. Cat. no: TMM 21816:NE11821



Find place: Åbo Akademi excavation 1998
Context: M118; inside of RA175 (Kemicum)

Knife sheath L. 228 mm, w. 47 mm. Thickness of

leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5 mm. Thread well preserved in the stitch holes.

Two paired suspension slots on both sides of the seam

A space for additional knife: a slot on the upper end of the sheath; flesh/grain stitch holes around the opening

Decoration:

Technique: engraving

Front: interlace

Back: interlace on one side of the seam; chevrons, forming a zigzag pattern on the other side of the seam

Dating: latter half of the 14th century – first half of the 15th century

16. Cat. no: TMM 21816:NE11847



Find place: Åbo Akademi excavation 1998
Context: M118 (Kemicum)

Knife sheath, a fragment. L. (60) mm, w. (30). Thickness of leather (0.5) mm (laminated). Calf leather.

A space for additional knife: a part of a raised moulding preserved

Decoration:

Technique: impression

Front: lattice

Dating: latter half of the 14th century – first half of the 15th century

17. Cat. no: TMM 21816:NE128226

Find place: Åbo Akademi excavation 1998
Context: M128D (Kemicum)

Knife sheath L. 145 mm, w. 40 mm. Thickness of leather 2 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5 mm

A space for additional knife: on the upper end, a 28 x 6 mm transverse slot with flesh/grain stitch holes on the upper edge; a raised moulding on the middle front of the sheath



Decoration:

Techniques: stamping; impression

Front: longitudinal rows of stamps extending from the upper end to the tip; mouth-end is undecorated; two rows on the right: quatrefoils; two rows on the middle: dots, two cinquefoils; the row on the left: quatrefoils

Back: outlined with impressed lines, on the left a row of cinquefoils

Dating: latter half of the 14th century - first half of the 15th century

18. Cat. no: TMM 21816:NE20153

Find place: Åbo Akademi excavation 1998
Context: M201 (Kemicum)

Knife sheath L. 205 mm, w. 50 mm. Lower end torn, but length remains original. Handle l. 100 mm, blade l. 105 mm. Thickness of leather 2.5 mm. Calf leather.

Butted seam, centre-back with edge/grain stitches; stitch type 1; stitch length 5 mm. Thread preserved in the stitch holes.

A space for additional knife: on the front, 40 mm from the mouth-end, a 37 x 5 mm slot. Above the slot, a vertical seam with a butted seam, facing inwards, extending to the mouth-end; edge/grain stitches; stitch type 1.

On the back, lower end of the handle section, two suspension slots (secondary?)

Decoration:

Technique: engraving

Front: three vertical fields, the middle one is the broadest and is moulded for additional knife; the area above the



opening on the handle section is undecorated; in the margin fields, foliate decoration, completing the foliate of the middle zone

Front handle: on the middle zone, foliate decoration with three-petalled flowers

Front blade: engraved foliate decoration

Back: same as the front blade, on both sides of the seam; also, diagonal lines on one side of the seam, on the handle section

On the tip, an iron nail or rivet

Dating: latter half of the 14th century - beginning of the 15th century

19. Cat. no: TMM 21816:NE504176



Find place: Åbo Akademi excavation 1998
Context: M504B (Kosmorama A)

Knife sheath L. 195 mm, w. 53 mm. Thickness of leather 2.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6 mm. Thread preserved in the stitch holes. Repair stitching? on top of the sheath on one side.

A paired slot for suspension on the left side of the seam, two paired slots on another side on top of each other.

A space for additional knife: a 26 x 5 mm slot on the top on the front, stitch holes around the opening; a raised moulding on the middle, on the front of the sheath.

Decoration:

Technique: impression

Front: three vertical fields; left: foliate; middle: foliate; right: diagonal lines

Back: outlined with longitudinal, impressed lines, no decoration

Dating: latter half of the 14th century – beginning of the 15th century

20. Cat. no: TMM 21816:NE50585



Find place: Åbo Akademi excavation 1998
Context: M505D (Kosmorama A)

Knife sheath L. 190 mm, w. 39 mm. Handle 1.90 mm, blade l. 100 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, left side of back with flesh/grain stitches; stitch type 1; stitch length 5 mm. Thread is extremely well preserved in the stitch holes and also between these.

A part of the handle is slit open from the front

Remnants of a tip-reinforcer of iron on the tip

A space for additional knife: a 20 x 7 mm slot on the upper end on the front; a 155 x 18 mm leather piece inside the sheath, thickness of leather 2 mm; not a proper sheath but a leather piece, whip-stitches (stitch type 3) on both edges; one edge has been stitched to the main sheath's front, another edge to the main sheath's back; thus, the leather piece divides the main sheath into two sections; a divider piece extends from the lower end to the upper end of the main sheath; a space for one of the knives is visible by the outlined decoration on the main sheath

Decoration:

Technique: engraving

Front: two vertical fields: on the right, three parallel, vertical, dotted lines extending from the handle section to the blade section; dots are short, engraved diagonal lines; the left field follows the form of the additional knife; the left field is divided between the handle and the blade

Front handle: chevron pattern

Front blade: foliate

Sheath is manufactured specially for certain knives

Dating: latter half of the 14th century - first half of the 15th century

21. Cat. no: TMM 21816:NE50914



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath with two additional sheaths inside

Main sheath: l. 180 mm, w. 37 mm. Thickness of leather (1) mm laminated). The type of leather can not be identified.

A lapped side seam with flesh/grain stitches; stitch type 3; stitch length? Sheath is moulded, lower end has a four-cornered, case-like, shape

Additional sheath 1:

a possible lining; l. 180 mm, w. 25 mm; a butted seam, centre-back with flesh/grain stitches; stitch type 3. The type of leather can not be identified. Grain side faces inwards.

Additional sheath 2:

Between a main sheath and the lining; l. 160 mm, w. 20 mm; closed seam, centre-back with flesh/grain stitches; stitch type 3. Calf leather. Grain side faces inwards.

Decoration:

Technique: engraving; stamping

Front handle: engraved foliate; stamped dots as a background surface

Front side: engraved foliate

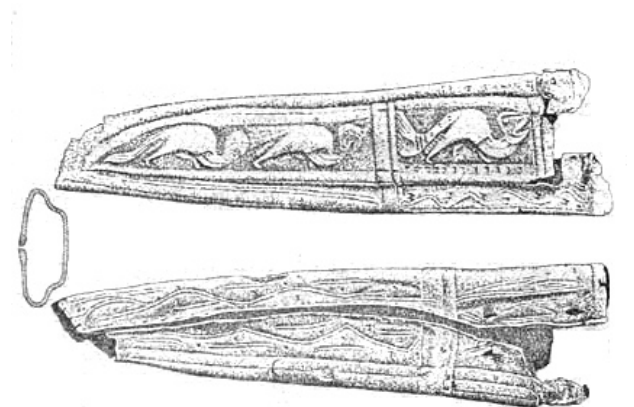
Front blade: same as front handle; sections divided by oblique lines

Back: engraved foliate

Back side: engraved diagonal lines

Dating: latter half of the 14th century – first half of the 16th century

22. Cat. no: KM 3942:1



Find place: groundwork pit for a new building, Hämeenkatu 17, 1901
Context: 'from the clay layer, from 3 to 4 metres deep' (Appelgren 1902:53)
Present location: central store of the National Museum in Orimattila

Knife sheath L. 170 mm, w. 35 mm; handle l. 70 mm, blade l. 100 mm; thickness of leather 1.5 mm; calf leather

Closed seam, left side of back with flesh/grain stitches; stitch type 1; stitch length 3 mm; flesh/grain stitches also on the tip

On the back two suspension slots on both sides of the seam; made over the decoration

A space for additional knife:

On the upper front remains of a transverse slot for additional knife; the front is moulded

Decoration:

Technique: embossing

Front: three embossed animal figures, birds? one on the handle, two on the blade

Back: impressed linear decoration

Dating: 14th century?

Published account: Appelgren (1902: 62, Fig. 7)

23. Cat. no: TMM 18884:131



Find place: sewer construction, Hämeenkatu, 1983
Context: 59/11, depth 3.4 – 3.6 m from the street level, from a moss-like layer

Knife sheath L. 188 mm, w. 28 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches; stitch type 1; stitch length 3-4 mm

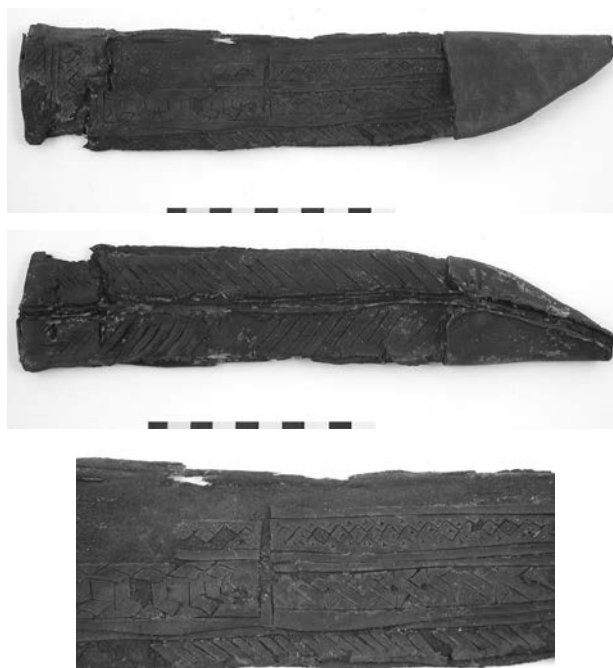
A space for additional knife: a transverse slot on the upper front; a raised moulding on the front, originally decorated? Transverse lines of impression on the handle, dividing decoration fields

Dating: the Middle Ages

24. Cat. no: TMM 18462:233

Find Place: Pile construction, Åbo Akademi main building, 1972
Context: unknown

Knife sheath L. 260 mm, w. 52 mm. Handle l. 110 mm, blade l. 150 mm. Thickness of leather 1.5 mm. Calf leather.



Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6-8 mm

Two suspension slots on top of each other on both sides of the seam on the back

A strengthening piece of leather on the tip; l. 75 mm; covers the tip; stitched to the original seam. Calf leather.

Space for two additional knives: two slots on the upper front

Decoration:

Technique: engraving

Front handle: above the slots for additional knives, two transverse fields, divided by a paired, transverse line; lattice on both fields.

Below the slots, two vertical fields; right: ornament, composed of lozenges, filled and accompanied by pricked dots; left: ornament composed of s-shaped motifs

Front blade: two vertical fields: right: same as front handle; left: angled interlace

Spine: diagonal lines

Back: diagonal lines on both sides of the seam; some of the cuts through leather; together the lines form a herringbone pattern.

Dating: the Middle Ages

25. Cat. no: TMM 21816:NE1434

Find place: Åbo Akademi excavation 1998
Context: M143 (Kemicum)

Knife sheath, a cut fragment. L. (125) mm, w. (50) mm. Thickness of leather 2 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 10-12 mm

A space for additional knife: a transverse slot on the



upper end

Decoration:

Technique: impression

Front: a vertical field with a foliate? decoration, divided by horizontal, dotted lines

Back: diagonal lines on both sides of the seam

Dating: latter half of the 15th century – beginning of the 16th century

26. Cat. no: TMM 21816:NE504208



Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath, a cut lower end. L. (114) mm, w. (19) mm. Thickness of leather 1 mm. Grain side faces inwards. Unidentified grain pattern on leather.

An additional sheath. Butted seam, centre-back with flesh/grain stitches; stitch type 3; stitch length 7 mm

Dating: latter half of the 14th century – beginning of the 15th century

27. Cat. no: TMM 21816:NE509134



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath L. 95 mm, w. 23 mm. Thickness of leather 1 mm. Goat leather. Grain side faces inwards.

An additional sheath. Stitches also on the mouth-end; the sheath is probably been stitched to the main sheath.

Closed side seam with flesh/grain stitches; stitch type 3

Dating: latter half of the 14th century – first half of the 16th century

28. Cat. no: TMM 21816:NE164119



Find place: Åbo Akademi excavation 1998
Context: M164 (Kosmorama B)

Knife sheath L. 156 mm, w. 40 mm. Thickness of leather 2 mm. Calf leather.

Closed seam, centre-back with edge/grain stitches; stitch type 1; stitch length 4 mm

A paired suspension slot on both sides of the seam, on the back of the handle

Decoration:

Techniques: impression; engraving

Front handle: four horizontal fields on top of each other; engraved, curved lines in derangement

Back handle: same as on front handle

Front blade: impressed circles / spirals

Back blade: same as front handle

Decoration is awkward compared to the high-quality seaming and stitching

Dating: latter half of the 14th century – first half of the 15th century

29. Cat. no: TMM 21816:NE16481



Find place: Åbo Akademi excavation 1998
Context: M164 (Kosmorama B)
Present location: Åbo Akademi -Gripen exhibition

Knife sheath L. 195 mm, w. 39 mm; handle l. 90 mm, blade l. 105 mm. A moulded handle. Thickness of leather 2.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5 mm. Thread preserved in the stitch holes.

Two slots for suspension on top of each other on both sides of the seam on the back. Handle cut open from one side, probably for the better fit for the knife.

Decoration:

Techniques: impression, emphasised by engraving

Front handle: two transverse fields, which continue to the back. Fields divided with dotted lines; Foliate decoration which continues to the back face; division between the handle and the blade by a zigzag line

Front blade: same as front handle but the foliate is vertical

Back blade: diagonal paired lines filled with dots

The foliate has firstly been executed by impression and then emphasised by engraving. The impression is done with care. The engraving, however, is roughly executed.

Dating: latter half of the 14th century – first half of the 15th century

30. Cat. no: TMM 21816:NE2016



Find place: Åbo Akademi excavation 1998
Context: M201 (Kemicum)

Knife sheath L. 155 mm, w. 31 mm. Handle l. 75 mm, blade l. 80 mm. Thickness of leather 2 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5 mm

Two paired suspension slots on top of each other on both sides of the seam on the back.

Moulding on the handle section and on the tip

Decoration:

Technique: engraving

Front handle: two vertical fields; both covered with combinations of diagonal and curved lines forming chevron patterns

Front blade: one field outlined; decoration same as on front handle

Back: diagonal lines; on the broader side of the handle section, also curved lines

Dating: latter half of the 14th century - beginning of the 15th century

31. Cat. no: TMM 21816:NE50449

Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath L. 170 mm, w. 39 mm. L. of the handle 75 mm, l. of the blade 95 mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6-9 mm

Two suspension slots on top of each other, on both sides of the seam

Decoration:

Technique: stamping; impression



Front handle: three transverse fields; stamped rings

Front blade: a vertical field; a row of stamped rings

Division between the fields by impressed lines

Dating: latter half of the 14th century – beginning of the 15th century

32. Cat. no: TMM 21816:NE07832



Find place: Åbo Akademi excavation 1998
Context: M78C (Kosmorama B)

Knife sheath L. 165 mm, w. 33 mm. Handle l. 75 mm, blade l. 90 mm. Thickness of leather 1.5 mm. The type of leather can not be identified.

Closed side seam; riveted on the blade section. A longitudinal line of oval perforations on the handle on the blade side; probably for seaming the handle with a thong or braid (leather or textile)

Decoration:

Techniques: punching; braiding

Handle: two longitudinal lines of punched, paired, lunate slits (similar as in 115); perforations with the thong or braid probably also decorative

Front blade: crossing incisions, a maker's mark?

Dating: latter half of the 15th century – beginning of the 16th century

33. Cat. no: TMM 21816:NE50347



Find place: Åbo Akademi excavation 1998
Context: M503M (Kosmorama A)

Knife sheath L. 205 mm, w. 40 mm. A broadening on the handle section. Handle l. 90 mm, blade l. 105 mm. Thickness of leather 1.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 6-7 mm

Two suspension slots on top of each other, on the top end

Decoration:

Technique: incision

Front handle: chevrons, composed of double lines and forming a zigzag pattern

Front blade: same as front blade

Dating: latter half of the 14th century – beginning of the 15th century

34. Cat. no: TMM 21816:NE20623



Find place: Åbo Akademi excavation 1998
Context: M206 (Kemikum)

Knife sheath L. 195 mm, w. 40 mm. L. of the handle 95 mm, l. of the blade 100 mm. Thickness of leather 2 mm Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1;

stitch length 5 mm

Two suspension slots on top of each other on both sides of the seam

Decoration:

Technique: engraving

Front handle: remnants of engraved dotted ornaments

Front blade: engraved and dotted foliate

Back: paired diagonal lines filled with engraved dots

Dating: latter half of the 14th century – beginning of the 15th century

35. Cat. no: TMM 21816:NE50448



Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath L. 180 mm, 29 mm. Handle l. 70 mm, blade l. 110 mm. Thickness of leather 2 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5 mm

A paired suspension slot on both sides on the upper end

Decoration:

Techniques: incision; excision

Front handle: incised transverse fields, continuing to the back, no decoration inside them; faintly discerning incisions across the fields, a possible maker's mark

Front blade: a vertical field of lattice

Tip: excised tassels on the tip

Dating: latter half of the 14th century – beginning of the 15th century

36. Cat. no: TMM 21816:NE20752

Find place: Åbo Akademi excavation 1998
Context: M207 (Kemicum)

Knife sheath L. 190 mm, w. 42 mm. Handle l. 90 mm, blade l. 100 mm. Thickness of leather 1 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches;



stitch type 1; stitch length 5-8 mm

Three suspension slots on top of each other, on the top end

Decoration:

Technique: slashing

Spine: diagonal and angular slashes on the lower end of the handle and on the blade, obviously secondary but deliberate

Dating: latter half of the 14th century – beginning of the 15th century

37. Cat. no: TMM 21816:NE50320



Find place: Åbo Akademi excavation 1998
Context: M503F (Kosmorama A)

Knife sheath L. 250 mm, w. 30 mm. Thickness of leather 1 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches; stitch type 1; stitch length 7-8 mm

A paired suspension slot on both sides, on the top end

Decoration:

Technique: incision

Front: lattice, from the top end to the tip

Dating: latter half of the of the 14th century - 15th century

38. Cat. no: TMM 21816:NE204240



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath L. 225 mm, w. 36 mm. Handle l. 110 mm, blade l. 115 mm. Thickness of leather 2 mm. Calf leather. Handle section is cut open from side; probably for the better fit of knife.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6 mm. Thread preserved in the stitch holes.

Two suspension slots on top of each other on both sides of the seam

Dating: latter half of the 14th century – beginning of the 15th century

39. Cat. no: TMM 21816:NE509149



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath L. 180 mm, w. 35 mm. Thickness of leather 1.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 2; stitch length 5-6 mm

A paired suspension slot on both sides on the upper end

Dating: latter half of the 14th century – first half of the 16th century

40. Cat. no: TMM 21816:NE07852



Find place: Åbo Akademi excavation 1998
Context: M78C (Kosmorama B)

Knife sheath L. 165 mm, w. 25 mm. Thickness of leather 1.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 5 mm

A paired suspension slot on both sides

Decoration:

Technique: engraving

Front: chevrons, composed of paired lines and forming a longitudinal zigzag line, extending from the upper end to the tip

Dating: latter half of the 15th century – beginning of the 16th century

41. Cat. no: TMM 21816:NE50379



Find place: Åbo Akademi excavation 1998
Context: M503G (Kosmorama A)

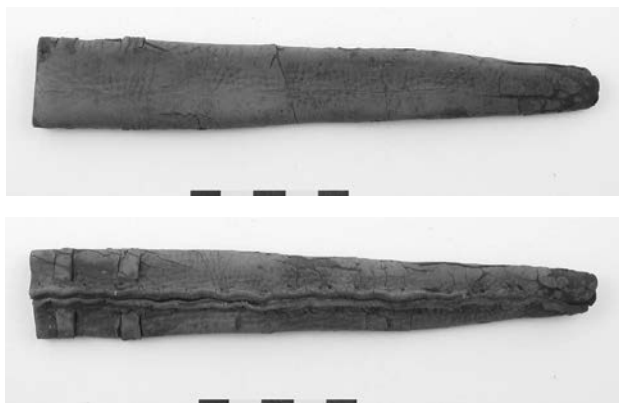
Knife sheath L. 176 mm, w. 40 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5-6 mm.

Grain surface is worn out. Faint remains of possible impressed outlining for decoration.

Dating: latter half of the 14th century – first half of the 15th century

42. Cat. no: TMM 21819:NE50399



Find place: Åbo Akademi excavation 1998
Context: M503J (Kosmorama A)

Knife sheath L. 180 mm, w. 29 mm. Thickness of leather 2 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 2; stitch length 5 mm

Two paired suspension slots on top of each other, on both sides of the seam

Dating: latter half of the 14th century – beginning of the 15th century

43. Cat. no: TMM 21816:NE204222



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath L. 195 mm, w. (45) mm. Thickness of leather (1) mm (laminated). Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 9-10 mm

Two suspension slots on top of each other on the upper end

Dating: latter half of the 14th century – beginning of the 15th century

44. Cat. no: TMM 21816:NE078102

Find place: Åbo Akademi excavation 1998
Context: M78C (Kosmorama B)

Knife sheath, a main part and an additional piece. L. 175 mm, w. 40 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch



type 1; stitch length 9 mm

Additional piece: butted seam, faces inwards; edge/grain stitches of stitch type 3

On the top end, a paired suspension slot on both sides; a part of a thong preserved

Dating: latter half of the 15th century – beginning of the 16th century

45. Cat. no: TMM 21816:NE1514



Find place: Åbo Akademi excavation 1998
Context: M151 (Kemicum)

Knife sheath L. 141 mm, w. 20 mm. Thickness of leather 1 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 5 mm. Other edge with secondary stitches of type 3; stitch length 3-9 mm.

A paired suspension slot on the upper end on the spine

Dating: first half of the 15th century

46. Cat. no: TMM 21816:NE164135

Find place: Åbo Akademi excavation
Context: M164 (Kosmorama B)

Knife sheath L. 139 mm, w. 24 mm. Thickness of leather 1.5 mm. The type of leather can not be identified.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 8 mm

Dating: latter half of the 14th century – first half of the 15th century



47. Cat. no: TMM 21816:NE17389



Find place: Åbo Akademi excavation 1998
Context: M173 (Kosmorama B)

Knife sheath L. (122) mm, 42 mm. Upper end is cut?
Thickness of leather 1.5 mm. Sheep leather.

Closed side seam with flesh/grain stitches; stitch type 2;
stitch length 3-5 mm.

Dating: latter half of the 14th century – (beginning of the
15th century)

48. Cat. no: TMM 21816:NE2116

Find place: Åbo Akademi excavation 1998
Context: M211 (Kemicum)

Knife sheath L. 185 mm, w. 38 mm. Thickness of
leather 1.5 mm. The type of leather can not be identified.

Closed side seam with flesh/grain stitches; stitch type 3;
stitch length 9-11 mm. On the top end on the other edge,
frequent stitch holes, secondary?

Handle section is broad compared to the blade

Two suspension slots on top of each other on the top end



Dating: latter half of the 14th century – beginning of the
15th century

49. Cat. no: TMM 21816:NE504229



Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath L. 180 mm, w. 30 mm. Thickness of
leather 1 mm. The type of leather can not be identified.

Closed side seam with flesh/grain stitches; stitch type 1;
stitch length 6-7 mm

Two suspension slots on top of each other on the top end

Dating: latter half of the 14th century – beginning of the
15th century

50. Cat. no: TMM 21816:NE504383

Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath L. 165 mm, w. 27 mm. Thickness of
leather 2.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type
1; stitch length 4-5 mm. Thread preserved in the stitch
holes.

Two slots for suspension on the upper end on top of each
other

Dating: latter half of the 14th century – beginning of the
15th century



51. Cat. no: TMM 14681:1942



Find place: sewer construction, Itäinen rantakatu, 1952-1953
Context: ditch no. 62 (lower end of the Nunnakatu), 'from the clay layer'

Knife sheath, a cut lower end. L. (195) mm, w. 50 mm. Thickness of leather 2 mm. Calf leather.

Butted seam, centre-back with edge/grain stitches; stitch type 1; stitch length 5 mm

Six holes through both layers of the leather on the tip, for the attachment of a chape?

Dating: the Middle Ages (dating of the context, Pihlman 1995:338)

Published account: Valonen (1958: table 14)

52. Cat. no: TMM 18798:117

Find place: sewer construction, the Old Great Market – Uudenmaankatu, 1982 (the register of town archaeology no:247; the find catalogue is missing)

Context:-

Present location: The Middle-Age exhibition at the Turku Castle

Knife sheath, a cut upper end. L. (225) mm, w. 45 mm. Thickness of leather 2 mm. Calf leather.



Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6 mm.

A row of flesh/grain stitches on the front mouth-end

Two diagonal slashes on the front upper end

Lining of leather inside the sheath; closed seam, centre-back with flesh/grain stitches; stitched using the same stitch holes as the sheath; calf leather, grain side faces outwards. Thickness of leather 1 mm.

Dating: the Middle Ages

53. Cat. no: KM 96001:4543



Find place: excavations of the outer bailey of the Turku Castle

Context: Square E16, layer IX

Knife sheath, a cut lower end. L. (225) mm, w. 55 mm. Thickness of leather 2 mm. Calf leather.

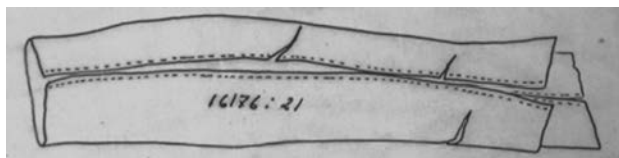
Butted seam, running diagonally from the left side to the right side of back towards the tip; edge/grain stitches. Stitch type 1; stitch length 8-9 mm. Seam faces inwards.

Sheath has a widening on the middle part

Three parallel holes through the leather on the tip, for the attachment of a chape?

Dating: phase 2s, 15th century – middle of the 16th century (Pihlman 1995:156-158, 166-168, Appendix 7.2).

54. Cat. no: TMM 16176:21



Find place: Grounding work for a building,
Uudenmaankatu 4 – Hämeenkatu 16
Context: 'All finds are from 3.5 – 4 m from the street
level
Present location: Turku Provincial Museum, missing;
conservation drawing remains

Knife sheath or sword scabbard?

Centre-back seam

Dating: the Middle Ages; found with many front-laced
shoes



Find place: Åbo Akademi excavation
Context: M101 (Kosmorama B)

Knife sheath, an upper part. Lower end torn. L. (140)
mm, w. 42 mm. Thickness of leather 2 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches;
stitch type 1; stitch length 9-12 mm. Thread left in the
stitch holes.

A paired suspension slot on the back and on the side

Dating: latter half of the 16th century

55. Cat. no: TMM 20671:1030



Find place: Uudenmaankatu 6 excavation 1988 (Kykyri
& Ojala 1988; the register of town archaeology 455)
Context: layer 12

Knife sheath L. 120 mm, w. 44 mm. Thickness of
leather 2 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch
type 1

Two suspension slots on the front and on the back

Decorative? stitching along the middle of the front of the
sheath

Dating: 1384/1429 – 1440/1445; find layer is dated
dendrochronologically between these years (Pihlman
1995:80, Appendix 3)

Published account: Mikkonen-Hirvonen (1991:71)

56. Cat. no: TMM 21816:NE1015

57. Cat. no: TMM 21816:NE15912



Find place: Åbo Akademi excavation
Context: M513B (Kosmorama A)

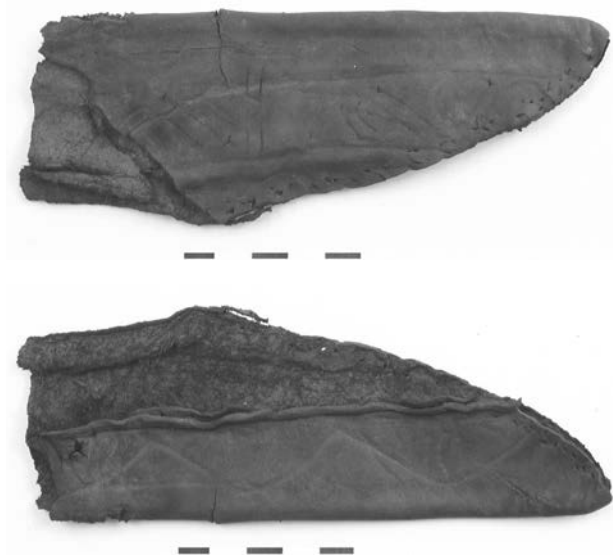
Knife sheath, an upper end. L. (110) mm, w. 33 mm.
Thickness of leather 2 mm. Upper end torn. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 2;
stitch length 6 mm

A paired suspension slot on both sides of the seam

Dating: latter half of the 14th century

58. Cat. no: TMM 21816:NE20054



Find place: Åbo Akademi excavation 1998
Context: M200 (context not known)

Knife sheath L. (160) mm, w. (45) mm. Thickness of leather 2 mm. Calf leather.

Closed seam, right-side of back with flesh/grain stitches; stitch type 1; stitch length 9-10 mm. Stitching on the other edge is secondary with stitch type 3

Decoration:

Technique: impression

Division between handle and blade by a horizontal, paired line

Front: two vertical zones; on the right, an impressed, curved line extending from the handle section to the blade section; left: foliate extending from the handle to the blade

Back: on the broader side of the seam, an impressed wave-line extending from the handle to the tip

Originally a sheath with a high-standard seaming and decoration has been repaired by secondary stitching

Dating: -

59. Cat. no: TMM 21816:NE20749

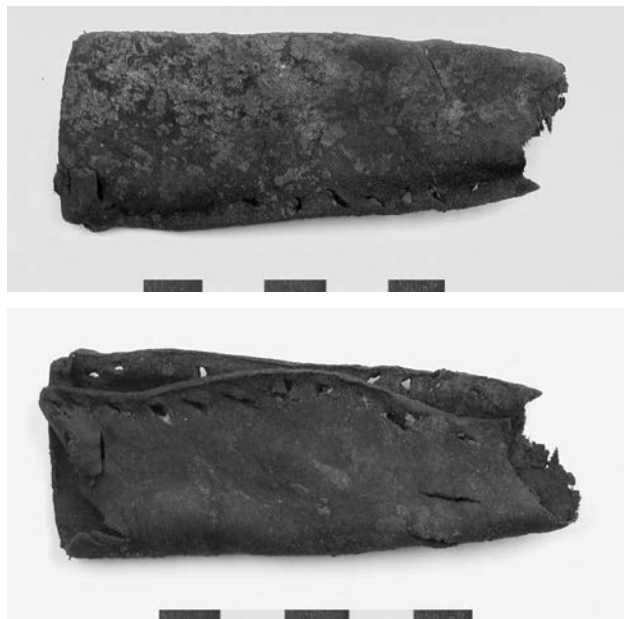
Find place: Åbo Akademi excavation 1998
Context: M207 (Kemicum)

Knife sheath, an upper end. L. (85) mm, w. 33 mm. Thickness of leather 2 mm. The type of leather can not be identified.

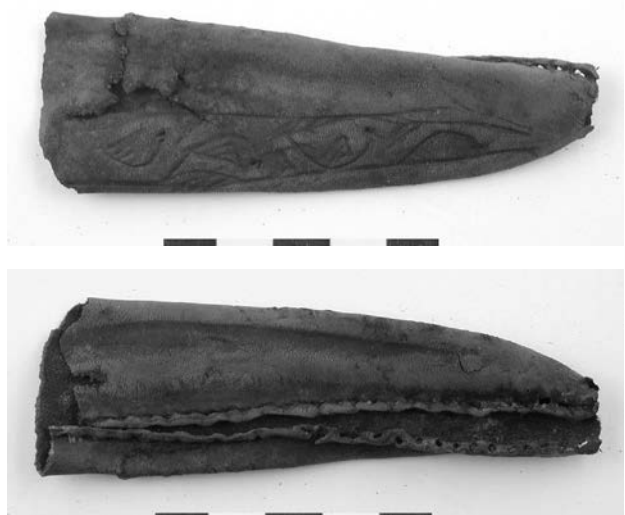
Closed side seam with flesh/grain stitches; stitch type 1; stitch length 6-8 mm

A paired slot for suspension on both sides on the top end

Dating: latter half of the 14th century – beginning of the 15th century



60. Cat. no: TMM 21816:NE503127



Find place: Åbo Akademi excavation 1998
Context: M503M (Kosmorama A)

Knife sheath, a tip-end. L. (100) mm, w. (33) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, left side of back with edge/grain stitches; stitch type 1; stitch length 3-4 mm

Decoration:

Technique: impression

Front blade: a vertical field on the left side, foliate decoration

Dating: latter half of the 14th century – beginning of the 15th century

61. Cat. no: TMM 21816:NE50445

Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)



Knife sheath, an upper end. L. (90) mm, w. 28 mm. Handle 1.70 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, left side of back with flesh/grain stitches; stitch type 1; stitch length 6 mm

Decoration:

Technique: engraving

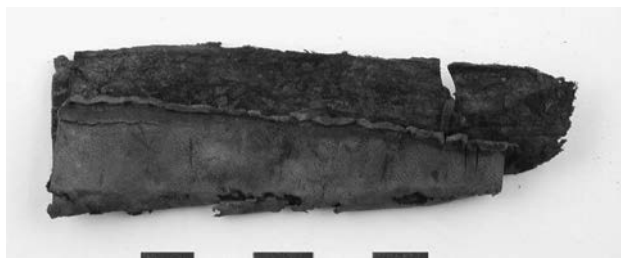
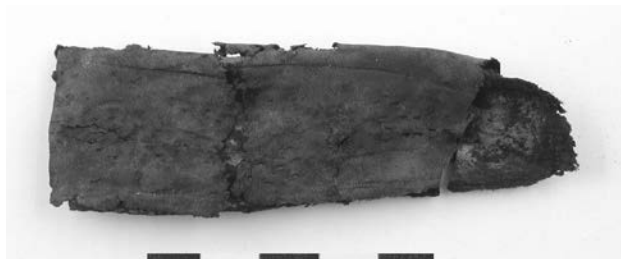
Front handle: two vertical fields; left: lattice; right: linear

Side handle: linear on one side of the seam, continue to the back

Front blade: only a part survives, lattice

Dating: latter half of the 14th century – beginning of the 15th century

62. Cat. no: TMM 21816:NE509304



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath, a tip-end. L. (92) mm, w. (30) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 3-4 mm. Thread preserved in the stitch holes.

Decoration:

Techniques: impression; pricked decoration

Front: faintly discerning impressed / pricked lines

Dating: latter half of the 14th century – first half of the 16th century

63. Cat. no: TMM 21816:NE50958



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath, a cut upper end. L. (105) mm, w. (47) mm. Thickness of leather 2 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 7-9 mm

Two suspension slots on top of each other on the top end

Decoration:

Techniques: impression; engraving

Front: engraved dots between impressed, transverse fields

Dating: latter half of the 14th century – first half of the 16th century

64. Cat. no: TMM 14681:1819



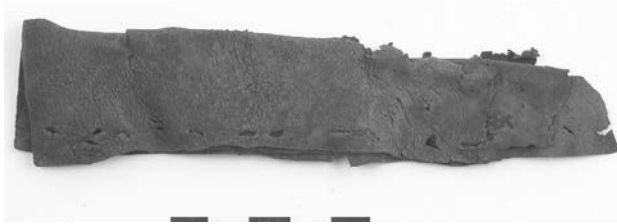
Find place: sewer construction, Itäinen rantakatu, 1952-53
Context: ditch no. 58 (lower end of the Nunnakatu)

Knife sheath L. 162 mm, w. 25 mm. Thickness of leather 1.5 mm. The type of leather can not be identified.

Closed side seam with flesh/grain stitches; stitch type 2; stitch length 3-7 mm

Dating: the Middle Ages

65. Cat. no: TMM 21816:NE049151



Find place: Åbo Akademi excavation
Context: M49L (Kemicum)

Knife sheath L. (150) mm, w. 32 mm. Lower end torn. Length near the original. Thickness of leather 1 mm. The type of leather can not be identified.

Closed side seam with flesh/grain stitches; stitch type 2; stitch length 10-14 mm.

Dating: latter half of the 14th century – first half of the 15th century

66. Cat. no: TMM 21816:NE08516



Find place: Åbo Akademi excavation 1998
Context: M85D (Kemicum)

Knife sheath L. 177 mm, w. 37 mm. Thickness of leather 1.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 3; stitch length 9-11 mm

A broadening on the handle with two larger stitch holes or suspension slots

Dating: the Middle Ages

67. Cat. no: TMM 21816:NE110120



Find place: Åbo Akademi excavation
Context: M110B (Kemicum)

Knife sheath L. 140 mm, w. 20 mm. Thickness of leather 1 mm. The type of leather can not be identified.

Closed side seam with flesh/grain stitches; stitch types 2 and 3; couple of stitch holes on the lower end of seam type 2, otherwise type 3; stitch length 7-12 mm

Dating: latter half of the 14th century - first half of the 15th century

68. Cat. no: TMM 21816:NE13031



Find place: Åbo Akademi excavation 1998
Context: M130E (Kemicum)

Knife sheath L. 165 mm, w. 28 mm. Thickness of leather 1.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 2 on the upper end; stitch type 3 on the lower end, stitch length 9-18 mm

On the upper end, a few larger stitch holes or slots, maybe for suspension

Decoration:

Technique: incision

Spine: on the blade section, two longitudinal incisions and diagonal lines between these, a kind of simple lattice

Dating: latter half of the 14th century

69. Cat. no: TMM 21816:NE13924

Find place: Åbo Akademi excavation 1998
Context: M139 (Kosmorama B)



Knife sheath L. (140) mm, w. 28 mm. Upper end torn. Thickness of leather 1.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 3; stitch length 5-9 mm.

Dating: first half of the 16th century

70. Cat. no: TMM 21816:NE1728



Find place: Åbo Akademi excavation 1998
Context: M172 (Kosmorama B)

Knife sheath L. 152 mm, w. 35 mm. Thickness of leather 3 mm. Cattle leather.

Closed side seam with flesh/grain stitches; stitch type 2; stitch length 4-10 mm. Thread preserved in the stitch holes.

A broadening on the handle with two suspension slots on top of each other

Decoration:

Technique: impression

Front handle: a maker's mark

Front blade: lattice

Dating: latter half of the 14th century – (beginning of the 15th century)

71. Cat. no: TMM 21816:NE20261



Find place: Åbo Akademi excavation 1998
Context: M202 (Kemicum)

Knife sheath L. 130 mm, w. 35 mm. Thickness of leather 1 mm. Lower end torn, length is original. The type of leather can not be identified.

Closed side seam with flesh/grain stitches; stitch type 2; stitch length 3-8 mm

A home-made sheath. Possibly the sheath has never been finished with stitching because the thread impressions are not visible.

Dating: latter half of the 14th century – beginning of the 15th century

72. Cat. no: TMM 21816:NE204192



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath, torn in two parts belonging together. L. 215 mm, w. 40 mm. Thickness of leather 1 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 3; stitch length 8-10 mm

Stitches continue on the other side of the sheath to the mouth-end

Dating: latter half of the 14th century – beginning of the 15th century

73. Cat. no: TMM 21816:NE50496

Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath L. (120) mm, w. 32 mm. Thickness of leather 1.5 mm. Upper end may be cut. Calf leather.



Closed side seam with flesh/grain stitches; stitch type 3; stitch length 8-10 mm

Dating: latter half of the 14th century – beginning of the 15th century

74. Cat. no: KM 95032:10193



Find place: The Aboa Vetus excavation 1994-1995
Context: R49, under R25, KU27

Knife sheath, a fragment. L. (120) mm, w. (90) mm (opened). Thickness of leather 1.5 mm. Calf leather.

Closed side seam; large holes, probably seamed with a thong

Dating: first half of the 14th century

Published account: Jokela (2002:137)

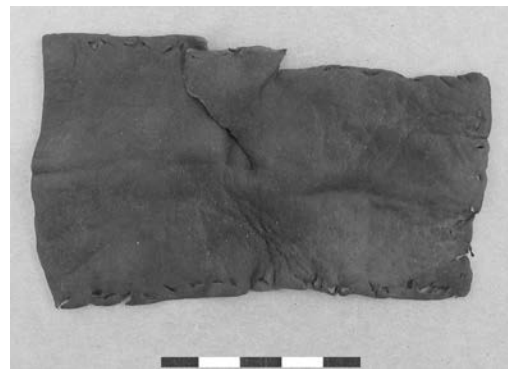
75. Cat. no: KM 95032:10449

Find place: The Aboa Vetus excavation 1994-1995
Context: KU13
Present location: Aboa Vetus Museum

Knife sheath L. 107 mm, w. 67 mm (opened). Thickness of leather 1 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type2; stitch length 2-5 mm

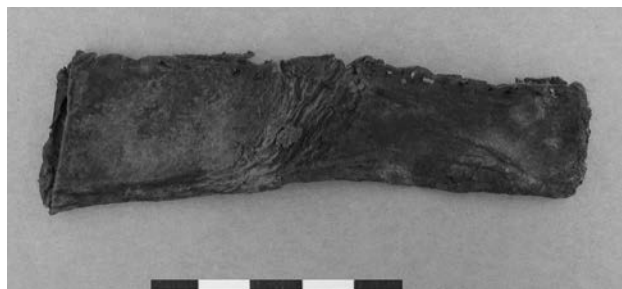
A needle case?



Dating: the Middle Ages

Published account: Jokela (2002:139)

76. Cat. no: KM 95032:10447



Find place: The Aboa Vetus excavation 1994-1995
Context: KU13

Present location: Aboa Vetus Museum

Knife sheath L. 112 mm, w. 35 mm. Thickness of leather 1 mm. The type of leather can not be identified.

Closed side seam with flesh/grain stitches; stitch type2; stitch length 2-3 mm

A needle case?

Dating: the Middle Ages

Published account: Jokela (2002:139)

77. Cat. no: KM 95032:9468

Find place: The Aboa Vetus excavation 1994-1995
Context: under R19
Present location: Aboa Vetus Museum

Knife sheath L. 145 mm, w. 70 mm (opened). Thickness of leather 1 mm. Goat leather.



Closed side seam with flesh/grain stitches; stitch type 2 & 3; stitch length 7-10 mm

Dating: the Middle Ages

Published account: Jokela (2002:136)

78. Cat. no: KM 95032:10221



Find place: The Aboa Vetus excavation 1994-1995
Context: R49, under R25, KU29

Knife sheath, a fragment. L. (95) mm, w. 86 mm (opened). Thickness of leather 1 mm. The type of leather can not be identified.

Side seam; indefinite stitch holes here and there

Two suspension slots on top of each other on the edge

Dating: first half of the 14th century

Published account: Jokela (2002:137)

79. Cat no: TMM 21816:NE08234

Find place: Åbo Akademi excavation 1998
Context: M82G (Kemicum)

Dagger sheath? or scabbard for a one-edged sword?
L. 335 mm, w. 50 mm. Upper end may be cut, also the lower back side is missing. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6-7 mm

A longitudinal impression line next to the seam. Also



other faintly discerning impressed lines

Dating: latter half of the 14th century – first half of the 15th century

80. Cat. no: TMM 21816:NE0663



Find place: Åbo Akademi excavation 1998
Context: M66 (Kemicum)

Knife sheath L. (150) mm, w. 28 mm; handle 1.105 mm. Lower end and other side of the upper end torn. Thickness of leather 1.5 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches; stitch type 1; stitch length 4-6 mm.

On the upper end next to the seam, two suspension slots on top of each other; other side torn

Decoration:

Division between handle and blade by two transverse, incised lines

Technique: incision

Front handle: two vertical fields; on the right, foliate decoration; on the left, wave lines running along the foliate

Front blade: fields as on the handle; foliate of the handle continues, left field is empty

Back: on both sides of the seam, combinations of transverse and diagonal lines whole length of the back

Dating: first half of the 16th century

81. KM 96001:4567



Find place: excavations of the outer bailey of the Turku Castle, 1984

Context: Square H16, layer IX

Knife sheath L. 330 mm (with the attachment loops), 225 mm without them), w. 37 mm. Thickness of leather 2 mm. Calf leather.

Closed side seam; stitch type 2, stitch length 7-9 mm. Stitch holes rather large, stitched with a leather thong or textile braid?

A diagonal repair? seam on one side; a whip stitched butted seam

A dense, diagonal line of paired slots on one side; similar but vertical on the other side; slots also on the mouth-end

Two 100 mm long straps with suspension slots on the upper end

Dating: phase 1; the 14th century – the first half of the 15th century (Pihlman 1995:156-158, 166-168, Appendix 7.2).

82. Cat. no: TMM 21816:NE17218



Find place: Åbo Akademi excavation 1998

Context: M172 (Kosmorama B)

Knife sheath L. 305 mm, w. 52 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre back with flesh/grain stitches; stitch type 1; stitch length 7-8 mm; flesh/grain stitch holes around the mouth-end

A paired suspension slot on the back, on the top end

Decoration:

Technique: incision

Back handle: diagonal lines on one side of the seam

Dating: latter half of the 14th century – (beginning of the 15th century)

83. Cat. no: TMM 21816:NE50327



Find place: Åbo Akademi excavation 1998

Context: M503F (Kosmorama A)

Knife sheath L. 212 mm, w. 32 mm. Thickness of leather 2 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5-6 mm

A paired suspension slot on both sides of the seam

Dating: latter half of the of the 14th century - 15th century

84. Cat. no: TMM 21816:NE0655

Find place: Åbo Akademi excavation 1998

Context: M65E (Kemicum)



Knife sheath, a tip-end. L. (83) mm, w. (28) mm. Thickness of leather 2 mm. Calf leather.

Butted seam, centre-back with flesh/grain stitches; stitch type 3; stitch length 9 mm; a very decorative seam and stitching.

Decoration:

Technique: incision

Front: a vertical field of incised lattice

Dating: latter half of the 15th century – beginning of the 16th century

85. Cat. no: TMM 21816:NE06513



Find Place: Åbo Akademi excavation 1998
Context: M65D / RA60F (Kemicum)

Knife sheath, three fragments belonging together. L. (150) mm, w. (40) mm, width near original. Thickness of leather (1) mm (laminated). Calf leather.

Closed back seam with flesh/grain stitches; stitch type 1; stitch length 3-4 mm

Decoration:

Techniques: incision; slashing

Front: incised foliate decoration; some of the incisions deliberately slashed through the leather?

Back: decoration preserved between the seam and the edge; groups of chevrons and diagonal lines

Dating: latter half of the 15th century – beginning of the 16th century

86. Cat. no: TMM 21816:NE06532



Find place: Åbo Akademi excavation 1998
Context: M65E (Kemicum)

Knife sheath, lower end torn or cut. L. (165) mm, w. (55) mm (opened). Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6 mm

Two paired slots for suspension on top of each other on both sides on the top end

Decoration:

Technique: engraving

Front: foliate decoration

Dating: latter half of the 15th century – beginning of the 16th century

87. Cat. no: TMM 21816:NE0787



Find place: Åbo Akademi excavation 1998

Context: M78C (Kosmorama B)

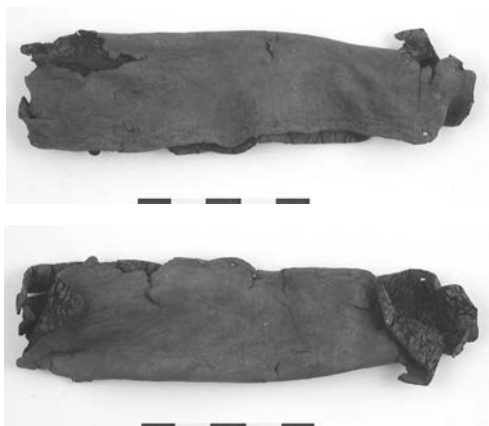
Knife sheath Torn or cut from both ends. L. (180) mm, w. (50) mm. Thickness of leather 2 mm. Calf leather.

Closed seam, left side of back with flesh/grain stitches; stitch type 1; stitch length 9-11 mm

A paired suspension slot on the upper side of the back

Dating: latter half of the 15th century – beginning of the 16th century

88. Cat. no: TMM 21816:NE0853



Find place: Åbo Akademi excavation 1998
Context: M85E (Kemicum)

Knife sheath, a torn fragment. L. (140) mm, w. (35) mm. Thickness of leather 1 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 3; stitch length 10 mm.

Dating: the Middle Ages

89. Cat. no: TMM 21816:NE1013



Find place: Åbo Akademi excavation
Context: M101 (Kosmorama B)

Knife sheath L. 128 mm, w. 23 mm. Thickness of leather 2.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 3-5 mm.

A paired suspension slot on both sides on the top end

Two vertical slashes on top of each other on the blade section

Dating: latter half of the 16th century

90. Cat. no: TMM 21816:NE11027



Find place: Åbo Akademi excavation 1998
Context: M110B (Kemicum)

Knife sheath, lower end torn. L. (130) mm, w. 22 mm. Thickness of leather 1 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 8-10 mm

Decoration:

Technique: incision

Front: two longitudinal fields, divided by an incised line; left: diagonal lines; right: chevrons composed of paired incision

Dating: latter half of the 14th century - first half of the 15th century

91. Cat. no: TMM 21816:NE11087



Find place: Åbo Akademi excavation 1998

Context: M110B (Kemicum)

Knife sheath, an upper end. L. (110) mm, w. 45 mm. Thickness of leather 2 mm. Calf leather

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 4-5 mm

Two suspension slots on top of each other, on the side, on the top end

Decoration:

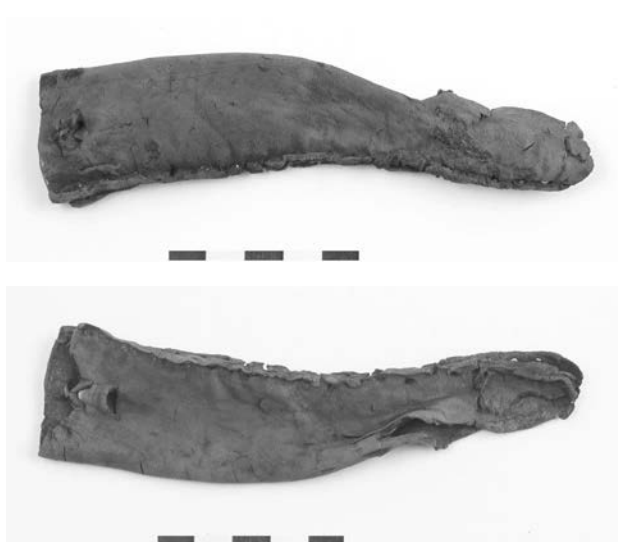
Techniques: incision; engraving

Front: oval motifs formed of incised, curved, paired lines, filled with engraved dots

Back: same as on the front

Dating: latter half of the 14th century - first half of the 15th century

92. Cat. no: TMM 21816:NE11247



Find place: Åbo Akademi excavation
Context: M112D (Kemicum)

Knife sheath L. 148 mm, w. 36 mm. Thickness of leather 1.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 7-8 mm. Thread preserved in stitch holes

A paired suspension slot on both sides

Dating: first half of the 15th century

93. Cat. no: TMM 21816:NE1243

Find place: Åbo Akademi excavation 1998
Context: M124 (Kemicum)

Knife sheath L. 250 mm, w. (28) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 9 mm



Dating: latter half of the 14th century - first half of the 15th century

94. Cat. no: TMM 21816:NE13611



Find place: Åbo Akademi excavation
Context: M136B (Kemicum)

Knife sheath L. 125 mm, w. 30 mm. Thickness of leather 2 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 3-5 mm

A short broadening with two suspension slots on the upper end of the sheath

Decoration:

Technique: engraving

Front handle: longitudinal lines

Back handle: longitudinal lines

Spine: geometrical combinations of horizontal and diagonal lines

Dating: latter half of the 15th century – beginning of the 16th century

95. Cat. no: TMM 21816:NE15971

Find place: Åbo Akademi excavation
Context: M159B (Kosmorama B)



Knife sheath, two torn fragments belonging together. L. (140) mm, w. (30) mm. Handle length 85 mm. Thickness of leather 1 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 7 mm

Decoration:

Division between the handle and the blade section by transverse lines

Technique: incision

Front handle: vertical lines

Back handle: vertical lines

Spine: diagonal lines on the blade section

Dating: first half of the 15th century

96. Cat. no: TMM 21816:NE16440



Find place: Åbo Akademi excavation 1998
Context: M164 (Kosmorama B)

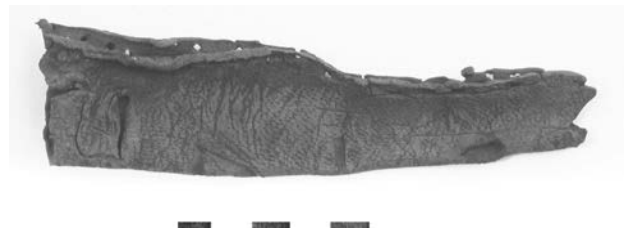
Knife sheath L. 166 mm, w. 25 mm. Thickness of leather 1 mm. The type of leather type can not be identified.

Butted seam on the back; seam is on the left side on the top end, on the lower end, it moves into the middle. Flesh/grain stitches; stitch type 3; stitch length 6 mm. A repairing stitch of type 3 on the lower end of the sheath

A paired suspension slot on the back on both sides of the seam on the top end

Dating: latter half of the 14th century – first half of the 15th century

97. Cat. no: TMM 21816:NE17268



Find place: Åbo Akademi excavation
Context: M172 (Kosmorama B)

Knife sheath (140) mm, w. 35 mm. Piece missing from the tip. Thickness of leather 1.5 mm. A broadening on the handle on the blade side. Handle l. 75 mm, blade l. 65 mm. The type of leather type can not be identified.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 6-9 mm.

A paired slot for suspension on both sides of the sheath on the top end; on one side, also one secondary, paired slot

Dating: latter half of the 14th century – (beginning of the 15th century)

98. Cat. no: TMM 21816:NE17320



Find place: Åbo Akademi excavation 1998
Context: M173 (Kosmorama B)

Knife sheath L. 141 mm, w. 32 mm. Thickness of leather 2 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 5 mm. Handle originally seamed with a thong or braid (leather or textile), now torn.

Decoration:

Technique: punching; braiding

Handle: two vertical lines of punched paired lunate slits, the thong or braid probably also decorative

Dating: latter half of the 14th century – (beginning of the 15th century)

99. Cat. no: TMM 21816:NE17318



Find place: Åbo Akademi excavation 1998
Context: M173 (Kosmorama B)

Knife sheath L. 120 mm, w. 19 mm. Thickness of leather 1 mm. The type of leather type can not be identified.

Closed side seam with flesh/grain stitches; stitch type 2; stitch length 3 mm.

A suspension slot on the top end

Dating: latter half of the 14th century – (beginning of the 15th century)

100. Cat. no: TMM 21816:NE2011



Find place: Åbo Akademi excavation 1998
Context: M201 (Kemicum)

Knife sheath L. (190) mm, w. (43) mm. Thickness of leather 2 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6 mm

Secondary stitch holes on the edge; probably for the stitching the torn edge

A paired slot for suspension on the back, on the top end

Decoration:

Technique: incision

Front blade: two vertical lines

Dating: latter half of the 14th century - beginning of the 15th century

101. Cat. no: TMM 21816:NE20147



Find place: Åbo Akademi excavation 1998
Context: M201 (Kemicum)

Knife sheath L. (160) mm, w. (65) mm (opened). Thickness of leather (1) mm (laminated). Calf leather.

Closed side seam with flesh/grain stitches, stitch type 1; stitch length 8 mm

Decoration:

Techniques: engraving; some of the cuts through leather may be unintentional

Spine: vertical rows of diagonal wave-lines and dots

Sides: vertical rows of diagonal lines and wave-lines; an outlining of triangular dots on the blade section

Dating: latter half of the 14th century - beginning of the 15th century

102. Cat. no: TMM 21816:NE20236

Find place: Åbo Akademi excavation 1998
Context: M202 (Kemicum)

Knife sheath, an upper end. L. (114) mm, w. 30 mm; length of the handle 85 mm. Thickness of leather (0.5) mm (laminated). Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 4 mm

Two suspension slots on top of each other on both sides of the seam on the back face



Decoration:

Techniques: impression, engraving

Front handle: a vertical field outlined with impressed lines; inside this, an impressed lattice, filled with engraved ring-and-dots

Front blade: only a part survives, diagonal lines

Dating: latter half of the 14th century – beginning of the 15th century

103. Cat. no: TMM 21816:NE204276



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath L. 150 mm, w. 19 mm. Thickness of leather (0.5) mm (laminated). Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 6 mm

Decoration:

Techniques: incision; slashing

Front: incised / slashed chevrons composed of double lines and forming a zigzag pattern; some of the cuts through leather unintentional?

Back: diagonal lines

Dating: latter half of the 14th century – beginning of the 15th century

104. Cat. no: TMM 21816:NE500110



Find place: Åbo Akademi excavation 1998
Context: M500 (Kosmorama A)

Knife sheath L. (152) mm, w. (38) mm. Upper end torn. Thickness of leather 1 mm. Calf leather.

Butted seam, left side of back with edge/grain stitches; stitch type 1; stitch length 5 mm. Thread preserved in the stitch holes.

Decoration:

Techniques: incision; punching

Front: diagonal lines; a line of punched rings between one of these

Spine: chevrons, completing the diagonal lines

Back: diagonal lines on the broader side of the seam

Dating: latter half of the of the 14th century – end of the 15th century

105. Cat. no: TMM 21816:NE503170

Find place: Åbo Akademi excavation 1998
Context: M503M (Kosmorama A)

Knife sheath, a cut or torn upper end. L. (100) mm, w. (40) mm. Thickness of leather (1) mm (laminated). Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 3-4 mm

Decoration:

Technique: impression

Front: faintly discerning lines

Dating: latter half of the 14th century – beginning of the 15th century



106. Cat. no: TMM 21816:NE50443



Find place: Åbo Akademi excavation 1998
Context: M504C (Kosmorama A)

Knife sheath L. (142) mm, w. (39) mm Upper end torn. Thickness of leather 2 mm. Calf leather.

A butted seam facing inwards, centre-back with edge/flesh stitches; stitch type 1; stitch length 6 mm; stitch holes also on the other edge, edge/flesh stitches, stitch type 3

Remnants of a tip-reinforcer of a copper alloy on the tip-part of the sheath

Dating: latter half of the 14th century – beginning of the 15th century

107. Cat. no: TMM 21816:NE504118

Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath, a cut or torn upper end. L. (92) mm, w. 26 mm. Thickness of leather 1 mm. Calf leather.



Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 3-4 mm

Two suspension slots on top of each other, on both sides of the seam on the back

Dating: latter half of the 14th century – beginning of the 15th century

108. Cat. no: TMM 21816:NE504423



Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath L. (115) mm, w. (22) mm. Upper end torn. Thickness of leather 1 mm. Sheep leather.

Closed seam, centre back with flesh/grain stitches; stitch type 1; stitch length 3-4 mm

Dating: latter half of the 14th century – beginning of the 15th century

109. Cat. no: TMM 21816:NE504456

Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath L. 159 mm, w. 24 mm. Thickness of leather 1.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1;



stitch length 6-9 mm

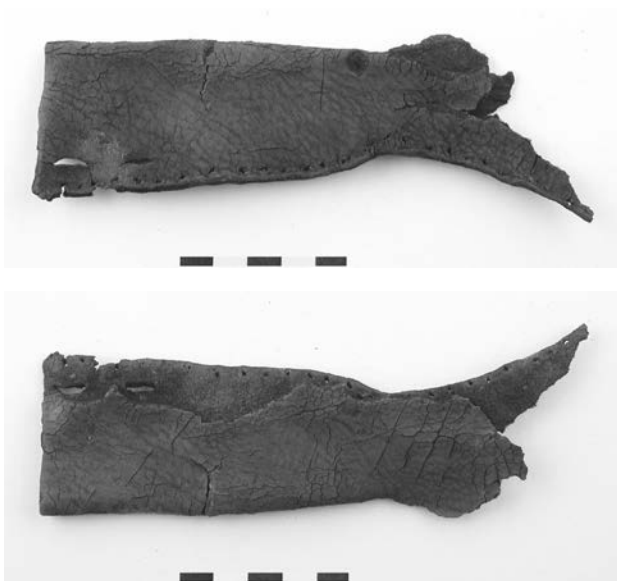
Decoration:

Techniques: impression; incision

Spine: impressed and incised chevrons on the blade section

Dating: latter half of the 14th century – beginning of the 15th century

110. Cat. no: TMM 21816:NE50575



Find place: Åbo Akademi excavation 1998
Context: M505 (Kosmorama A)

Knife sheath L. (165) mm, w. 50 mm. Lower end torn. Thickness of leather 2 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 5-7 mm

Two suspension slots on top of each other on the upper end

Dating: latter half of the 14th century - first half of the 15th century

111. Cat. no: TMM 21816:NE50947

Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)



Knife sheath L. (155) mm, w. 45 mm. Torn from both ends. Thickness of leather (1) mm (laminated). Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 5-6 mm

A paired slot for suspension on both sides on the upper end

Decoration:

Techniques: impression; engraving

Front handle: impressed / engraved foliate

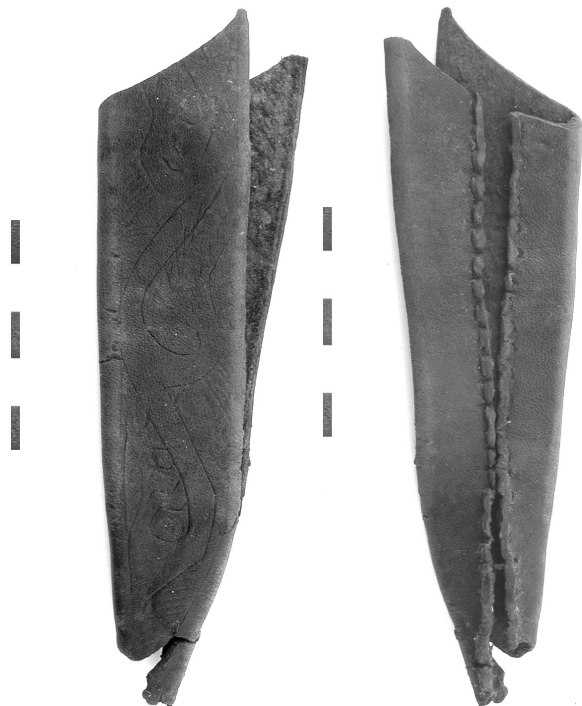
Front blade: diagonal lines next to the seam

Spine: foliate on the blade section

Back handle: the foliate of the front handle continues to the back

Dating: latter half of the 14th century – first half of the 16th century

112. Cat. no: TMM 21816:NE50957



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath, upper end is cut. L. (152) mm, w. (35) mm.
Thickness of leather 1.5 mm. Calf leather.

Butted seam, centre-back with edge/grain stitches; stitch type 1; stitch length 5-6 mm

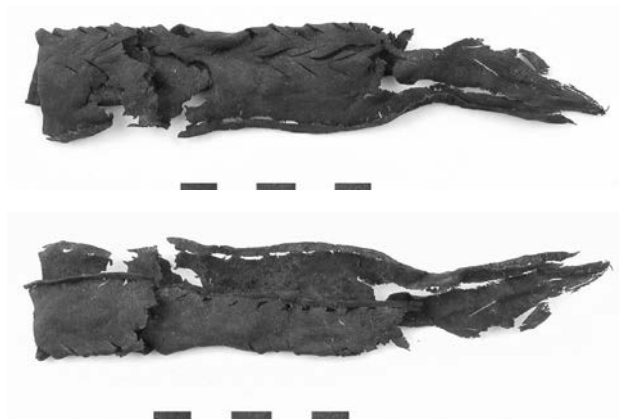
Decoration:

Technique: incision

Front: foliate decoration on the whole front face

Dating: latter half of the 14th century – first half of the 16th century

113. Cat. no: TMM 21816:NE50975



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath, a torn fragment. L. (158) mm, w. (30) mm.
Thickness of leather (1) mm (laminated). Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length?

Decoration:

Technique: incision / slashing

Front: chevrons forming a kind of herringbone pattern but without a middle-line

Spine: diagonal lines

Dating: latter half of the 14th century – first half of the 16th century

114. Cat. no: TMM 21816:NE509303

Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath, two cut fragments. L. (170) mm, w. (27) mm and l. (115) mm, w. (46) mm. Thickness of leather 1 mm. Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 4-5 mm

Decoration:



Technique: impression

Front: impressed, diagonal lines, only a part preserved

Dating: latter half of the 14th century – first half of the 16th century

115. Cat. no: TMM 21816:NE509350



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath L. 150 mm, w. 26 mm. Handle 1.75 mm, blade l. 75 mm. Thickness of leather 1 mm. Goat or sheep leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 5 mm

Decoration:

Technique: punching

Handle: two vertical rows of paired lunate slits, compare to 32 and 98

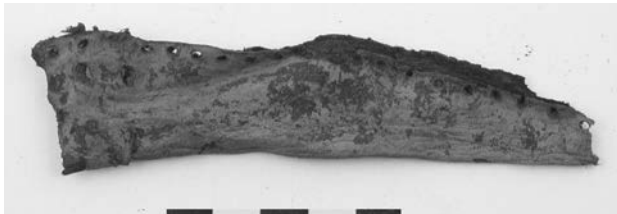
Dating: latter half of the 14th century – first half of the 16th century

116. Cat. no: TMM 21816:NE509366

Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath L. (120) mm, w. 30 mm. Thickness of leather 1 mm. The type of leather can not be identified.

Closed side seam with flesh/grain stitches; stitch type can not be defined, other edge is missing.



Two suspension slots on top of each other on the upper end

Dating: latter half of the 14th century – first half of the 16th century

117. Cat. no: TMM 21816:NE51132



Find place: Åbo Akademi excavation 1998
Context: M511C (Kosmorama A)

Knife sheath L. (144) mm (without suspension loops), w. 40 mm. Lower end torn. Thickness of leather 2 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 5-8 mm

Two suspension loops cut on the upper end

Decoration:

Technique: incision

Front handle: vertical lines

Back handle: vertical lines

Dating: latter half of the 14th century

118. Cat. no: TMM 21816:NE51520

Find place: Åbo Akademi excavation 1998
Context: M515B (Kosmorama A)



Knife sheath, two fragments belonging together. L. 150 mm, w. (22) mm. Thickness of leather (1) mm (laminated). Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 6-7 mm

A paired suspension slot on the top end?

Decoration:

Technique: incision / slashing

Front: diagonal lines, unintentionally through the leather?

Dating: latter half of the 14th century – 15th century

119. Cat. no: TMM 21816:NE2005



Find place: Åbo Akademi excavation 1998
Context: M200 (context unknown)

Knife sheath L. (150) mm, (45) mm. Thickness of leather 3 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 7 mm

A paired suspension slot on the top end; similar maybe originally on the other side of the seam.

Decoration:

Techniques: engraving, stamping

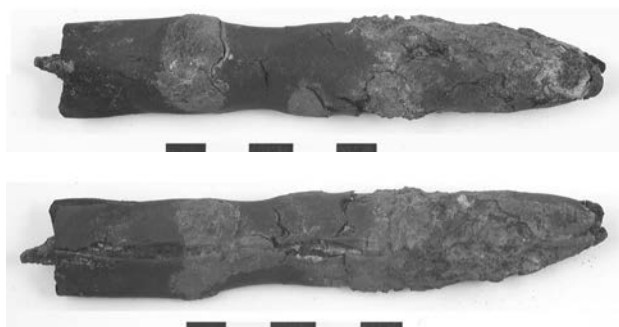
Front handle: on the upper end, vertical lines; below, herringbone pattern extending to the tip

Front blade: herringbone

Back: a vertical row of flower stamps on both sides of the seam; compare to 169

Dating: -

120. Cat. no: TMM 21816:L1816



Find place: Åbo Akademi excavation 1998
Context: M49L

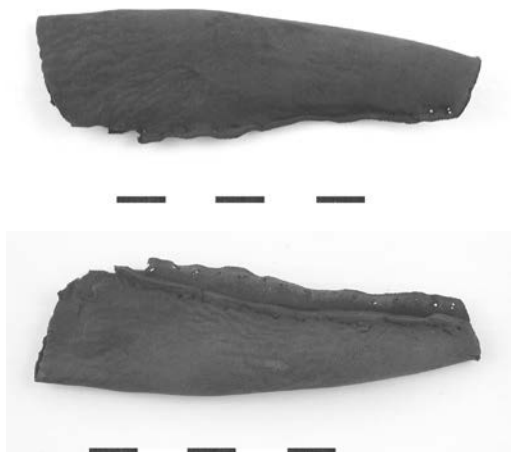
Knife sheath with a knife inside. L. 125 mm, w. 22 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre back with flesh/grain stitches; stitch type 3

Of the knife, only the tip of the tang is visible

Dating: latter half of the 14th century – first half of the 15th century

121. Cat. no: TMM 20764:491



Find place: Old Great Market excavation 1989
Context: layer 10, square B1

Knife sheath, cut or torn lower end. L. (91) mm, w. (28) mm. Thickness of leather 1 mm. Calf leather.

Closed side-seam with flesh/grain stitches; stitch type 1; stitch length 4-5mm.

Dating: the Middle Ages; layer group 7, phase 4/5, mixed layers (Pihlman 1995:64, 309)

122. Cat. no: TMM 20764:1270

Find place: the Old Great Market excavation 1989
Context: layer 193

Knife sheath Lower end cut. L. (135) mm, w. (22) mm. Thickness of leather 1 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 3-4 mm.



Two suspension slots on top of each other on the upper end

Decoration:

Technique: engraving

Spine: foliate with three-petalled flowers

Dating: second quarter of the 14th century; layer group 3b, phase 3 (Pihlman 1995:63, 310)

123. Cat. no: TMM 20764:1537



Find place: the Old Great Market excavation 1989
Context: layer 236

Knife sheath L. (172) mm, w. (28) mm. Thickness of leather (1) mm (laminated). Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 4-5 mm

Two suspension slots on top of each other on the upper end

Decoration:

Technique: impression, stamping

Front: linear, stamped rings

Back: on the left side of the seam, a wave-line; on the right, diagonal lines

Dating: first quarter of the 14th century; layer group 2, phase 2 (Pihlman 1995:62-63, 310)

124. Cat. no: KM 95032:9457

Find place: The Aboa Vetus excavation 1994-1995
Context: under R19, KU66 and KU44



Knife sheath L. 175 mm, w. 65 mm (opened).
Thickness of leather 1 mm. Goat leather.

Closed side seam; Rivet hole / holes on the blade section?

Two suspension slots on top of each other on the handle edge

Dating: the Middle Ages

Published account: Jokela (2002:135)

125. Cat. no: KM 95032:10384



Find place: The Aboa Vetus excavation 1994-1995
Context: under level R76

Knife sheath L. 210 mm, w. 31 mm. Handle l. 95 mm, blade l. 115 mm. Thickness of leather 1.5 mm. Calf leather.

Closed, riveted side seam on the handle; seven rivet holes, base of one rivet remains; seaming of the blade section unclear

Imprint of a ferrule on the mouth-end

Decoration:

Technique: punching

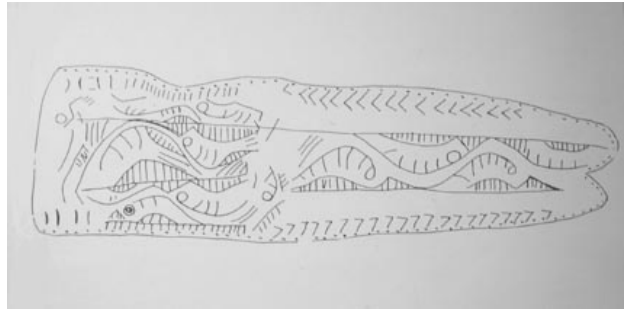
Handle: A vertical row of punched paired lunate slits on the handle

Inside the sheath, a knife (220)

Published account: Jokela (2002:138)

Dating: the Middle Ages

126. Cat. no: TMM 20671:1070



Find place: Uudenmaankatu 6 excavation 1988 (Kykyri & Ojala 1988; the register of town archaeology 455)
Context: layer 12

Knife sheath L. 230 mm, w. 35 mm

Closed seam, centre back with flesh/grain stitches

Decoration:

Technique: engraving

Foliate, linear

Dating: 1384/1429 – 1440/1445; the find layer is dated dendrochronologically between these years (Pihlman 1995:80, Appendix 3).

Published account: Mikkonen-Hirvonen (1991:67-70)

127. Cat. no: TMM 18831:645



Find place: The Vähä-Hämeenkatu 13 excavation, 1982 (Pihlman & Ikäheimo 1982; the register of town

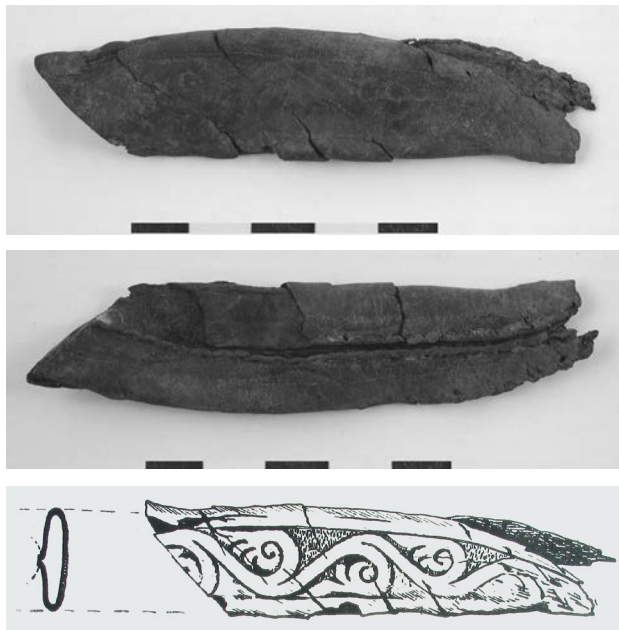
archaeology 295A-C).
Context: layer 1 of wood flint

Knife sheath, a cut fragment. L. (220) mm, w. (60) mm, opened. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 10-11 mm.

Dating: The middle of the 15th century – the beginning of the 16th century (Pihlman 1995:88-89, Appendix 4).

128. Cat. no: TMM 14740:429



Find place: sewer construction, Itäinen rantakatu, 1952-1953

Context: ditch no. E (the trench extension on the front of the Brahe's Park), from the clay layer, 2,9 – 3,8 m under the surface, above the wooden drain structure; a mixed layer

Knife sheath, a cut lower end. L. (90) mm, w. (20) mm. Thickness of leather 1.5 mm.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 3 mm

Decoration:

Technique: impression

Front: foliate

Back: a wave-line on left side of the seam

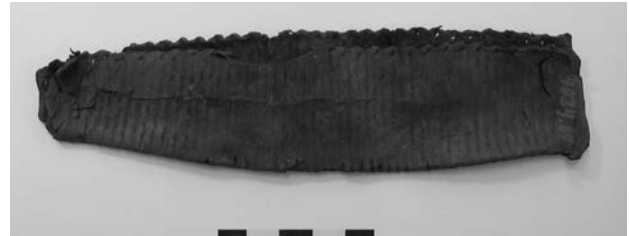
Dating: the Middle Ages (of the find context, Pihlman 1995:122; Valonen 1958:63)

Published account: Kivikoski (1966, 1973:Fig. 1229); Valonen (1958:Fig. 55)

129. Cat. no: KM 4034:60

Find place: groundwork pit for a new building, Hämeenkatu 17, 1901

Context: 'from the clay layer, from 3 to 4 metres deep' (Appelgren 1902:53)



Present location: central store of the National Museum in Orimattila

Grip covering L. 165mm, w. 25 mm (upper end) -37 mm (lower end), thickness of leather 1 mm; calf leather

Flesh/grain stitches; stitch type 3, stitch length 4-5 mm

Covered with transverse stripes of impression

Dating: 14th century?

130. Cat. no: KM 4034:61



Find place: groundwork pit for a new building, Hämeenkatu 17, 1901

Context: 'from the clay layer, from 3 to 4 metres deep' (Appelgren 1902:53)

Present location: central store of the National Museum in Orimattila

Grip covering, a cut fragment L. (80) mm, w. 40 mm, thickness of leather 1 mm, calf? leather

Flesh/grain stitches, stitch type 3

Covered with transverse stripes of impression

Dating: 14th century?

131. Cat. no: KM 4034:62

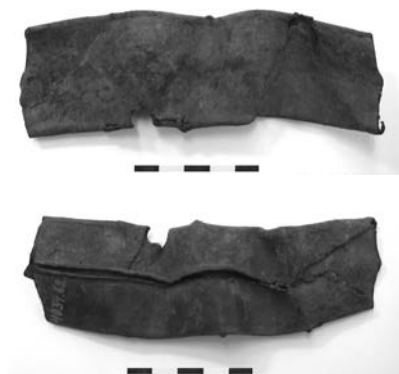
Find place: groundwork pit for a new building, Hämeenkatu 17, 1901

Context: 'from the clay layer, from 3 to 4 metres deep' (Appelgren 1902:53)

Present location: central store of the National Museum in Orimattila

Scabbard, a cut fragment L. (145) mm, w. 42 mm, thickness of leather 1 mm; leather type can not be defined

Closed seam; centre-back with flesh/grain stitches; stitch



length 6 mm

Dating: 14th century?

132. Cat. no: TMM 16175:14

Find place: sewer construction, Nunnakatu, 1963



Context: from the upper end of Nunnakatu, 230 cm below the street level

Knife sheath L. 210 mm, w. 35 mm. Handle l. 85 mm, blade l. 125 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6-10 mm

Two suspension slots on the back on both sides of the seam

Decoration:

Technique: impression

Division between handle and blade by transverse lines

Front handle: lattice

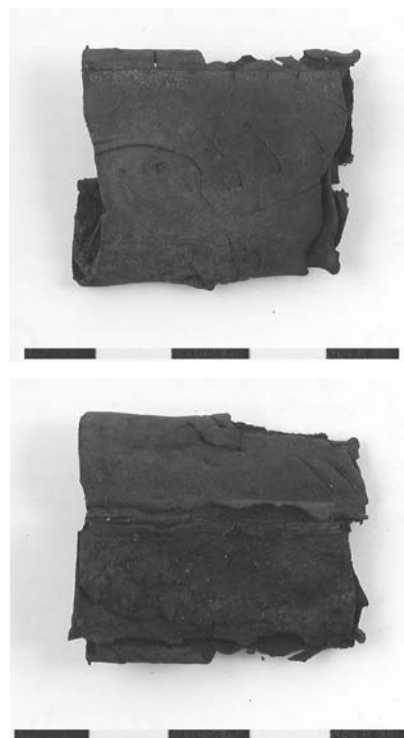
Front blade: lattice

Back: chevrons on the left side of seam

Dating: the Middle Ages

133. Cat. no: TMM 17296:633

Find place: groundwork pit for a new building, Uudenmaankatu 5a, 1971
Context: unknown



Knife sheath, a fragment. L. (35) mm, w. (31) mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1

Decoration:

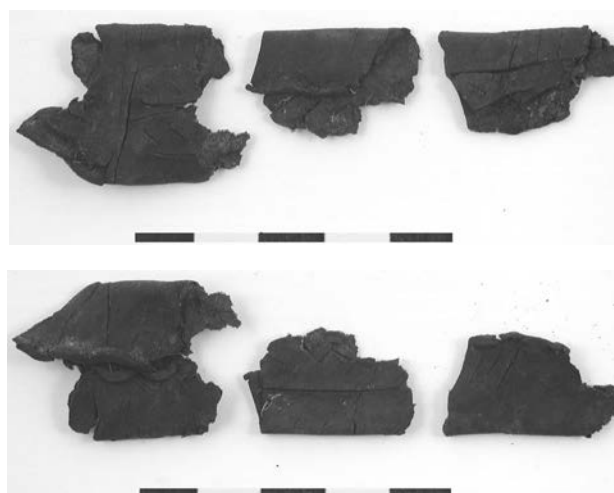
Technique: incision

Front: foliate

Back: diagonal lines

Dating: the Middle Ages

134. Cat. no: TMM 18884:381



Find place: sewer construction, Hämeenkatu, 1983
Context: 87.5/10, depth 2.55 m from the street level, wood-chip layer

Knife sheath, a fragment. L. (35) mm, w. (25) mm.

Thickness of leather (1) mm (laminated). Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 3

Decoration:

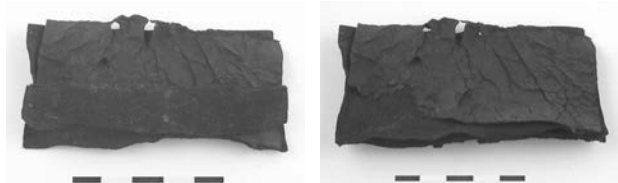
Technique: incision

Front: diagonal lines

Back: same as front

Dating: The Middle Ages

135. Cat. no: TMM 20764:1133

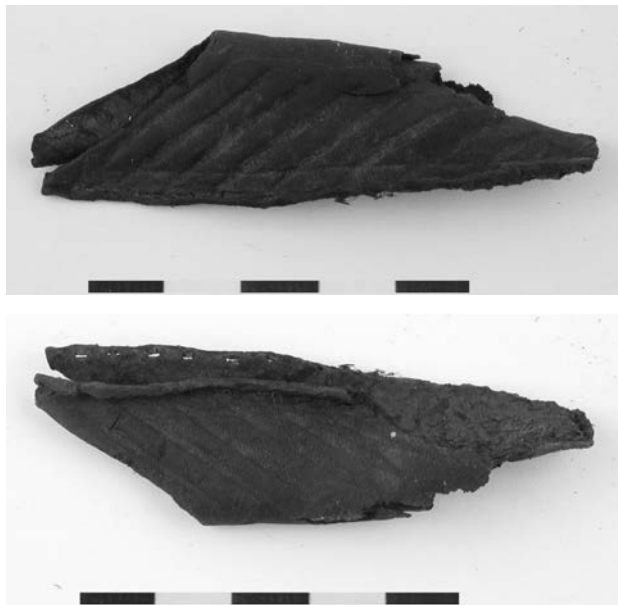


Find place: the Old Great Market excavation 1989
Context: layer 181

Knife sheath, a cut fragment. L. (88) mm, w. (40) mm.
Thickness of leather (1) mm (laminated). Calf leather.

Dating: 1350 – beginning of the 15th century; layer group 4B, phase 4 (Pihlman 1995:63-64, 308)

136. Cat. no: TMM 20764:1135



Find place: the Old Great Market excavation 1989
Context: layer 181

Knife sheath, a cut fragment. L. (78) mm, w. (27) mm.
Thickness of leather 1.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 4-5mm.

Decoration:

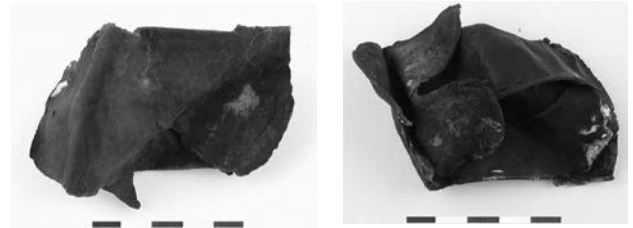
Technique: impression

Front: diagonal lines

Back: same as front

Dating: 1350 – beginning of the 15th century; layer group 4B, phase 4 (Pihlman 1995:63-64, 308)

137. Cat. no: TMM 20764:1625



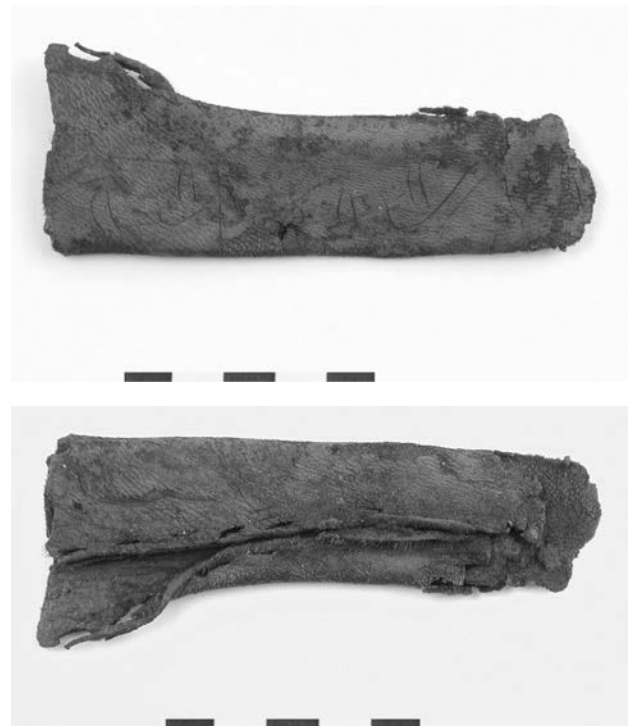
Find place: the Old Great Market excavation 1989
Context: layer 236

Knife sheath, a cut fragment. L. (100) mm, w. (50) mm.
Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5 mm.

Dating: first quarter of the 14th century; layer group 2, phase 2 (Pihlman 1995:62-63, 310)

138. Cat. no: TMM 21816:NE04959



Find place: Åbo Akademi excavation 1998
Context: M49G (Kemicum)

Knife sheath, a fragment. L. (110) mm, w. (30).
Thickness of leather 2 mm. Sheep leather. Some hair preserved.

Closed seam, left side of back with flesh/grain stitches; stitch type 3; stitch length 8 mm

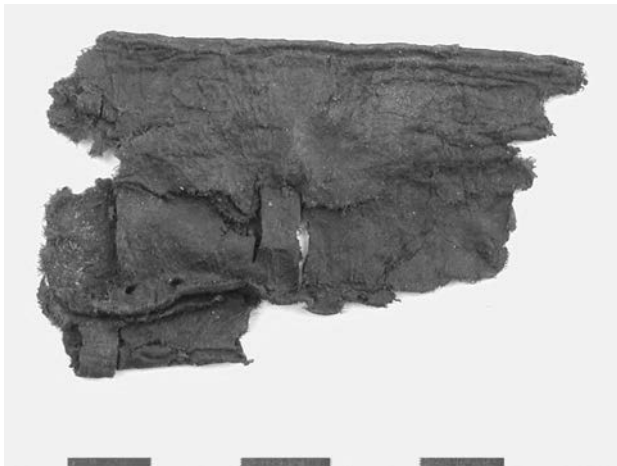
Decoration:

Technique: incision

Front: foliate

Dating: middle of the 15th century – beginning of the 16th century

139. Cat. no: TMM 21816:NE05620



Find place: Åbo Akademi excavation 1998
Context: M56B (Kemicum)

Knife sheath, a torn fragment from the upper end of sheath. L. (60) mm, w. (38) mm. Thickness of leather (1) mm (laminated). The type of leather can not be identified.

Closed seam, left side of back with flesh/grain stitches; stitch type 2

A paired suspension slot on both sides

Dating: latter half of the 16th century

140. Cat. no: TMM 21816:NE10431

Find place: Åbo Akademi excavation
Context: M104 (Kemicum)

Knife sheath, a torn tip-part. L. (115) mm, w. (40) mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 4 mm

Decoration:

Technique: incision

Front: lozenges

Spine: herringbone

Back: diagonal lines on both sides of the seam

Dating: latter half of the 15th century – beginning of the 16th century



141. Cat. no: TMM 21816:NE128205



Find place: Åbo Akademi excavation 1998
Context: M128D (Kemicum)

Knife sheath, a fragment. Cut from both ends. L. (122) mm, w. (34) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 4 mm

Dating: latter half of the 14th century - first half of the 15th century

142. Cat. no: TMM 21816:NE128214

Find place: Åbo Akademi excavation 1998
Context: M128D (Kemicum)

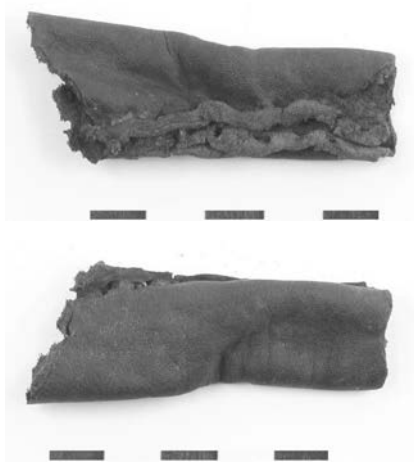
Knife sheath, a cut fragment. L. (70) mm, w. (43) mm. Thickness of leather 2 mm. Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 5 mm



Dating: latter half of the 14th century - first half of the 15th century

143. Cat. no: TMM 21816:NE13931



Find place: Åbo Akademi excavation 1998
Context: M139D (Kosmorama B)

Knife sheath, a fragment. L. (65) mm, w. (25) mm.
Thickness of leather 2.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1;
stitch length 3-5 mm

Dating: latter half of the 15th century – beginning of the 16th century

144. Cat. no: TMM 21816:NE1612

Find place: Åbo Akademi excavation 1998
Context: M161 (Kosmorama B)

Knife sheath, a fragment. L. (95) mm, w. (33) mm.
Thickness of leather 1 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches;
stitch type 1; stitch length 4 mm

Decoration:

Technique: impression

Front: three fields on top of each other, extending to the back; uppermost: lattice; middle: impressed meandering curves; lowermost: lozenges

Dating: latter half of the 15th century – beginning of the



16th century

145. Cat. no: TMM 21816:NE201135



Find place: Åbo Akademi excavation 1998
Context: M201 (Kemicum)

Knife sheath, a torn fragment. L. (42) mm, w. (26) mm.
Thickness of leather 2 mm. Calf leather.

Closed seam, side of back with flesh/grain stitches; stitch type 1; stitch length 6-7 mm. Thread preserved in the stitch holes

Dating: latter half of the 14th century - beginning of the 15th century

146. Cat. no: TMM 21816:NE201148

Find place: Åbo Akademi excavation 1998



Context: M201 (Kemicum)

Knife sheath, an upper end. L. (88) mm, w. (35) mm.
Thickness of leather 2 mm. Calf leather.

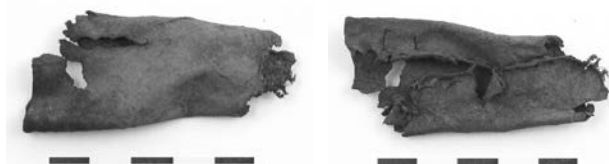
Closed seam, right side of back with flesh/grain stitches; stitch type 1; stitch length 7-8 mm. Thread preserved in the stitch holes.

Upper end cut open from the side, probably for the better fit of knife

Two suspension slots on top of each other on the back

Dating: latter half of the 14th century - beginning of the 15th century

147. Cat. no: TMM 21816:NE201178



Find place: Åbo Akademi excavation 1998
Context: M201 (Kemicum)

Knife sheath, a torn upper end. L. (65) mm, (30) mm. Thickness of leather (0.5) mm (laminated). The type of leather can not be identified.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 4 mm

A paired suspension slot on the back

Dating: latter half of the 14th century - beginning of the 15th century

148. Cat. no: TMM 21816:NE204185



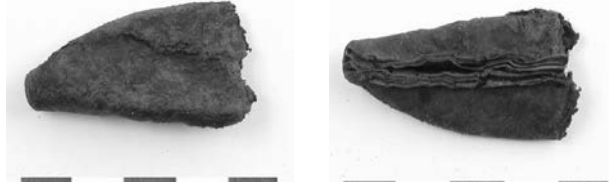
Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath, a fragment. L. (74) mm, w. (28) mm. Thickness of leather (0.5) mm (laminated). The type of leather can not be identified.

Closed seam, centre-back with flesh/grain stitches; stitch type 3; stitch length 5 mm

Dating: latter half of the 14th century – beginning of the 15th century

149. Cat. no: TMM 21816:NE204193



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath, a tip-end. L. (46) mm, w. (25) mm. Thickness of leather 1.5 mm. The type of leather can not be identified.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5-6 mm

Dating: latter half of the 14th century – beginning of the 15th century

150. Cat. no: TMM 21816:NE204230



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath, an upper end. L. (62) mm, w. (34) mm. Thickness of leather (1) mm (laminated). Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 5 mm

Two paired slots for suspension on top of each other

Dating: latter half of the 14th century – beginning of the 15th century

151. Cat. no: TMM 21816:NE204238



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath, a cut fragment. L. (74) mm, w. (23) mm.

Thickness of leather (0.5) mm (laminated). Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 8-10 mm

Dating: latter half of the 14th century – beginning of the 15th century

152. Cat. no: TMM 21816:NE20463



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath, a cut fragment. L. (95) mm, w. (45) mm.
Thickness of leather 2 mm. Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 5 mm

Decoration:

Technique: engraving

Front: chevron pattern

Back: diagonal lines

Dating: latter half of the 14th century – beginning of the 15th century

153. Cat. no: TMM 21816:NE20474



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath, a cut fragment. L. (110) mm, w. (28) mm.
Thickness of leather 1 mm. Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 5 mm

Decoration:

Technique: engraving

Front: vertical lines and chevrons, compare to 155

Dating: latter half of the 14th century – beginning of the 15th century

154. Cat. no: TMM 21816:NE20729



Find place: Åbo Akademi excavation 1998
Context: M207 (Kemicum)

Knife sheath, a tip-end. L. (85) mm, w. (28) mm.
Thickness of leather (0.5) mm (laminated). The type of leather can not be identified.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5 mm

Dating: latter half of the 14th century – beginning of the 15th century

155. Cat. no: TMM21816:NE20739



Find place: Åbo Akademi excavation 1998
Context: M207 (Kemicum)

Knife sheath, a torn fragment. L. (65) mm, w. (22) mm.
Thickness of leather (0.5) mm. Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 6 mm

Decoration:

Technique: engraving

Front: chevrons and linear

Dating: latter half of the 14th century – beginning of the 15th century

156. Cat. no: TMM 21816:NE209178



Find place: Åbo Akademi excavation 1998
Context: M209 (Kemicum)

Knife sheath, an upper end. L. (95) mm, w. (37) mm. Thickness of leather (1) mm (laminated). The type of leather can not be identified.

Closed seam, centre-back with flesh/grain stitched; stitch type 1; stitch length 6 mm

A paired slot for suspension on both sides of the seam on the top end

Dating: latter half of the 14th century – beginning of the 15th century

157. Cat. no: TMM 21816:NE209204



Find place: Åbo Akademi excavation 1998
Context: M209 (Kemicum)

Knife sheath, a cut fragment. L. (62) mm, w. (37) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6 mm

Dating: latter half of the 14th century – beginning of the 15th century

158. Cat. no: TMM 21816:NE209209



Find place: Åbo Akademi excavation 1998
Context: M209 (Kemicum)

Knife sheath, a cut fragment. L. (35) mm, w. (23) mm. Thickness of leather 2.5 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches; stitch type 1; stitch length 4 mm

Decoration:

Technique: engraving

Front handle: a transverse field extending to the back; interlace of angled double-lines; above originally a corresponding field

Front blade: vertical and diagonal lines, only a part of the field preserved

Dating: latter half of the 14th century – beginning of the 15th century

159. Cat. no: TMM 21816:NE21015

Find place: Åbo Akademi excavation 1998
Context: M210 (Kemicum)

Knife sheath, two fragments. L. (100) mm, w. (19) mm and l. (110) mm, w. (22) mm. Thickness of leather (0.5) mm (laminated). Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 4 mm

Decoration:



Technique: impression

Front: foliate

Dating: latter half of the 14th century – beginning of the 15th century

160. Cat. no: TMM 21816:NE500120



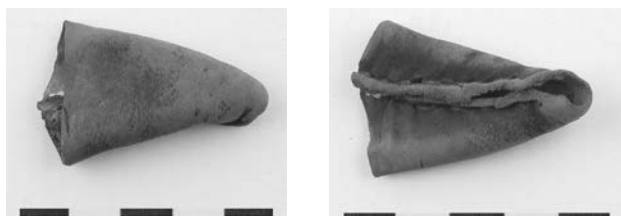
Find place: Åbo Akademi excavation 1998
Context: M500 (Kosmorama A)

Knife sheath, two torn fragments. L. (115) mm, w. (39) mm and (98) mm, w. (35) mm. Thickness of leather (0.5 mm) (laminated). Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5-7 mm

Dating: latter half of the of the 14th century – end of the 15th century

161. Cat. no: TMM 21816:NE509133



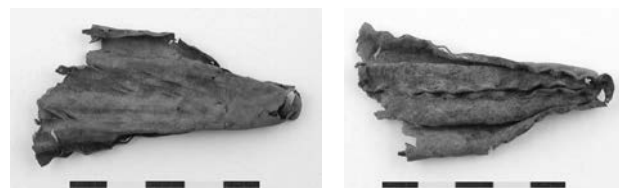
Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath, a cut tip-end. L. (44) mm, w. (27) mm. Thickness of leather 1 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 4-6 mm

Dating: latter half of the 14th century – first half of the 16th century

162. Cat. no: TMM 21816:NE50982



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath, a torn tip-part. L. (72) mm, w. (18) mm. Thickness of leather (1) mm (laminated). Calf leather.

Closed seam, centre-back with flesh grain stitches; stitch type 2; stitch length 3-4 mm

Decoration:

Technique: incision

Front: incised lines

Dating: latter half of the 14th century – first half of the 16th century

163. Cat. no: TMM 21816:NE51138



Find place: Åbo Akademi excavation 1998
Context: M511B (Kosmorama A)

Knife sheath, a fragment. L. (62) mm, w. (19) mm. Thickness of leather 1 mm. Calf leather

Closed seam, centre-back with flesh/grain stitches; stitch type 1

Decoration:

Technique: stamping, impression

Front: stamped cinquefoils, impressed outlining

Dating: 14th century

164. Cat. no: TMM 21816:NE51223



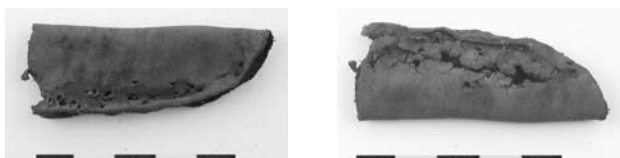
Find place: Åbo Akademi excavation 1998
Context: M512 (Kosmorama A)

Knife sheath, a cut tip-end. L. (55) mm, w. (22) mm. Thickness of leather 1.5 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 7 mm

Dating: 14th century

165. Cat. no: TMM 21816:NE51253



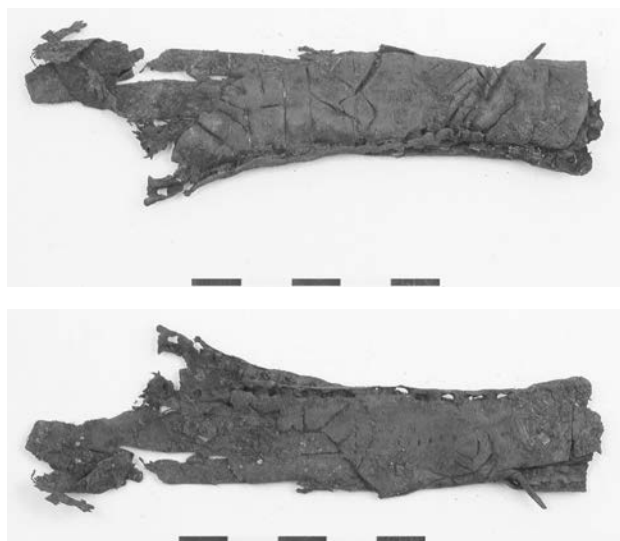
Find place: Åbo Akademi excavation 1998
Context: M512 (Kosmorama A)

Knife sheath, a cut or torn tip-end. L. (62) mm, w. (23) mm. Thickness of leather 1 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 5 mm. In addition to the original stitch holes, also many secondary stitches

Dating: 14th century

166. Cat. no: TMM 21816:NE06924



Find place: Åbo Akademi excavation 1998
Context: M69J (Kemicum)

Knife sheath, a torn fragment. L. (120) mm, w. (30) mm. Thickness of leather 1 mm. Calf leather.

Closed side seam with flesh/grain stitches; stitch type 1; stitch length 5-6 mm. Thread preserved in stitch holes.

Decoration:

Technique: engraving

Front: combinations of engraved horizontal and diagonal lines, dotted lines and chevrons

Back: same as front

Dating: latter half of the 14th century - first half of the 15th century

167. Cat. no: TMM 21816:NE20824



Find place: Åbo Akademi excavation 1998
Context: M208 (Kemicum)

Knife sheath, a cut fragment. L. (148) mm, w. (45) mm. Thickness of leather (1) mm (laminated). Calf leather.

Closed seam, right side of back with flesh/grain stitched; stitch type 1; stitch length 4-6 mm

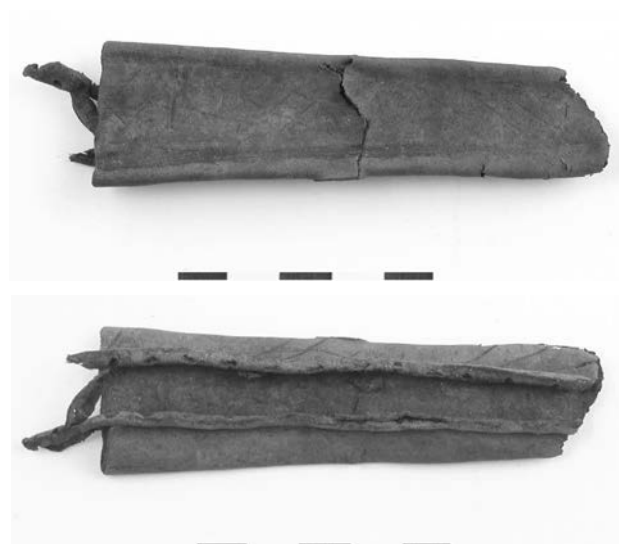
Decoration:

Techniques: incision / slashing

Front: foliate

Dating: latter half of the 14th century – beginning of the 15th century

168. Cat. no: TMM 21816:NE0811



Find place: Åbo Akademi excavation 1998
Context: M81D (Kemicum)

Knife sheath, a fragment. Cut from upper end, torn from lower end. L. (100) mm, w. (30) mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 7-8 mm

Decoration:

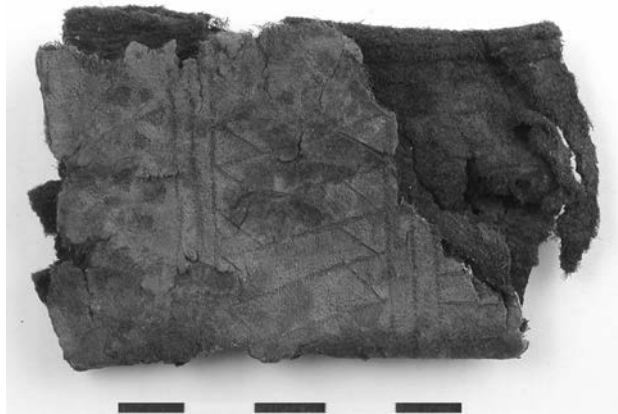
Technique: impression

Front: longitudinal impression lines on the front on both edges; lattice between the lines; decoration barely visible

Back: diagonal lines between the seam and the edge on one side, other side is plain

Dating: first half of the 16th century

169. Cat. no: TMM 21816:NE1129



Find place: Åbo Akademi excavation 1998
Context: M112C+M143 (Kemicum)

Knife sheath, two fragments belonging together. L. (80) mm, w. (47) mm. Thickness of leather 2 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches; stitch type 1; stitch length 6 mm

On the back face, two paired suspension slots on top of each other, on both sides of the seam

Decoration:

Techniques: impression emphasised by incisions; stamps

Front: horizontal fields separated by impressed lines; uppermost: flower stamps similar as in 119; middle: lattice; lowermost, only partly preserved: vertical lines

Back: decoration only on the broader side of the seam: on the upper end, a flower stamp; underneath this, linear decoration

Dating: first half of the 15th century

170. Cat. no: TMM 21816:NE128204



Find place: Åbo Akademi excavation 1998
Context: M128D (Kemicum)

Knife sheath, a fragment. L. (84) mm, w. (31) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches; stitch type 1; stitch length 4 mm

Seam makes a slight curve on the junction of the blade and the handle

Decoration:

Technique: impression

Front blade: lattice

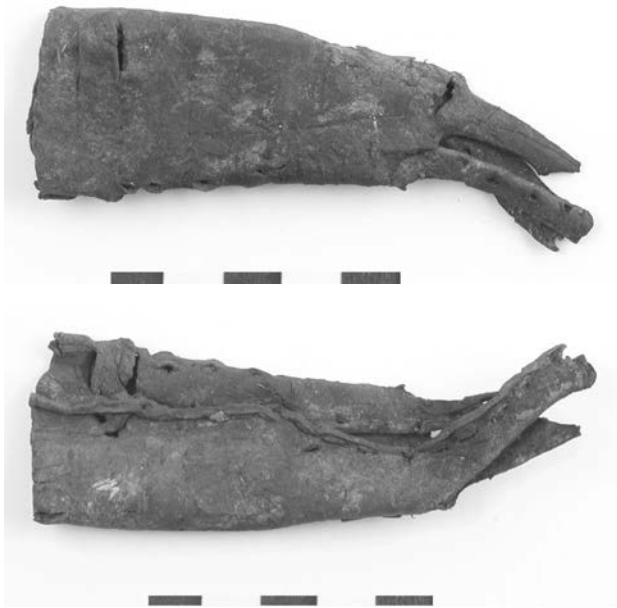
Dating: latter half of the 14th century - first half of the 15th century

171. Cat. no: TMM 21816:NE17223

Find place: Åbo Akademi excavation
Context: M172 (Kosmorama B)

Knife sheath, an upper end. L. (100) mm, w. 35 mm. Moulded handle, l. 40 mm. Thickness of leather 2 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches; stitch type 1; stitch length 3-6 mm



A paired suspension slot on the front and on the back

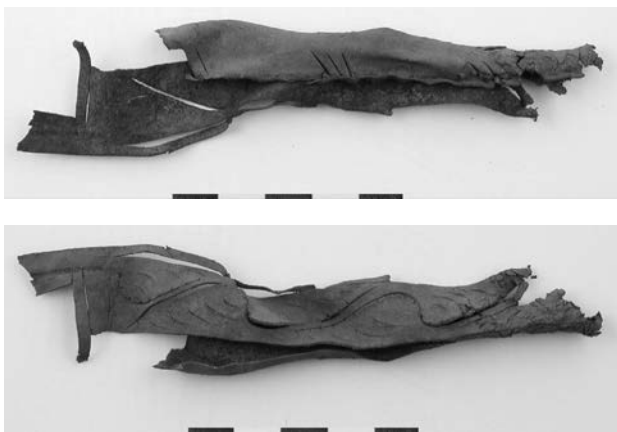
Decoration:

Techniques: engraving

Front handle: chevrons / zigzag pattern and horizontal, dotted lines

Dating: latter half of the 14th century – (beginning of the 15th century)

172. Cat. no: TMM 21819:NE509199



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Knife sheath, a cut and torn fragment. L. (130) mm, w. (24) mm. Thickness of leather (1) mm (laminated). Calf leather.

Closed seam, back with flesh/grain stitches; stitch type 1; stitch length 3 mm

Decoration:

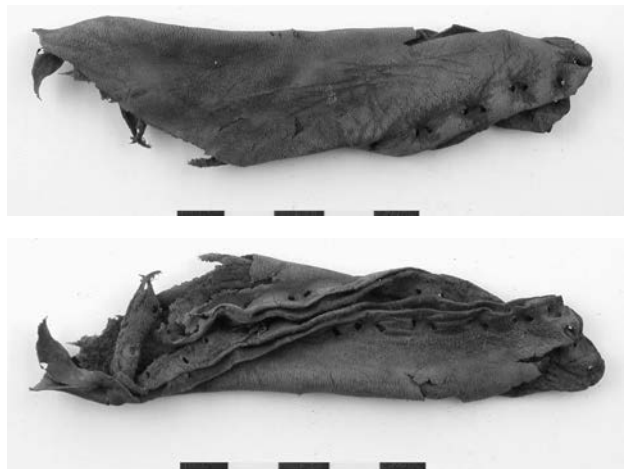
Techniques: incision / slashing, some of the cuts unintentionally through the leather?

Front: foliate

Back: diagonal lines

Dating: latter half of the 14th century – first half of the 16th century

173. Cat. no: TMM 21816:NE504458



Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Knife sheath, a torn lower end. L. (116) mm, w. (27) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, right side of back with flesh/grain stitches; stitch type 2; stitch length 5 mm

Dating: latter half of the 14th century – beginning of the 15th century

174. Cat. no: TMM 21816:NE20497



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Knife sheath, a cut and torn fragment. L. (150) mm, w. (40) mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, left side of back with flesh/grain stitches; stitch type 1; stitch length 4 mm

Dating: latter half of the 14th century – beginning of the 15th century

175. Cat. no: TMM 21816:NE164102

Find place: Åbo Akademi excavation 1998
Context: M164 (Kosmorama B)

Knife sheath, torn fragments. Thickness of leather (0.5) mm (laminated). Calf leather.



Flesh/grain stitches; stitch type 1; stitch length 3 mm

Dating: latter half of the 14th century – first half of the 15th century

176. Cat. no: TMM 21816:NE20750



Find place: Åbo Akademi excavation 1998
Context: M207 (Kemicum)

Knife sheath, a torn lower end. L. (120) mm, w. (25) mm. Thickness of leather (0.5) mm (laminated). Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 3; stitch length 6 mm

Decoration:

Technique: incision / slashing

Front blade: two vertical rows of diagonal lines, divided by a pricked line

Dating: latter half of the 14th century – beginning of the 15th century

177. Cat. no: TMM 21816:NE04931

Find place: Åbo Akademi excavation 1998
Context: M49L (Kemicum)

Scabbard leather? A cut fragment. L. (325) mm, w. (20) mm. Thickness of leather 1 mm. Calf leather.

Butted seam with edge/grain stitches; stitch type 1; stitch length 3 mm



Dating: latter half of the 14th century – first half of the 15th century

178. Cat. no: TMM 21816:NE05634



Find place: Åbo Akademi excavation 1998
Context: M56K (Kemicum)

Scabbard leather, a cut lower end. L. (230) mm, w. 50 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 3-4 mm

Scabbard tip is blunt; stitched with flesh/grain stitches. Longitudinal impression lines on both sides of the seam

and on the edges on the front and back of the scabbard.

On the front, a mark of the form of a sleigh bell; a detached decoration?

Dating: latter half of the 14th century

179. Cat. no: TMM 21816:NE11095



Find place: Åbo Akademi excavation 1998
Context: M110B (Kemicum)

Scabbard leather, a cut fragment. L. (245) mm, w. (32) mm. Thickness of leather 1 mm. Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 9-10 mm. On the other end of the fragment, secondary flesh-grain stitches.

A longitudinal impression line next to the seam; also, a mark of impressed diagonal & transverse double lines

Dating: latter half of the 14th century - first half of the 15th century

180. Cat. no: TMM 21816:NE110206



Find place: Åbo Akademi excavation 1998
Context: M110B+M69J (Kemicum)

Scabbard leather, a cut fragment. L. (155) mm, w. (29) mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 6-7 mm

A longitudinal impression line next to the seam and on the edge; also a mark of an impressed, diagonal double line

Dating: latter half of the 14th century – first half of the 15th century

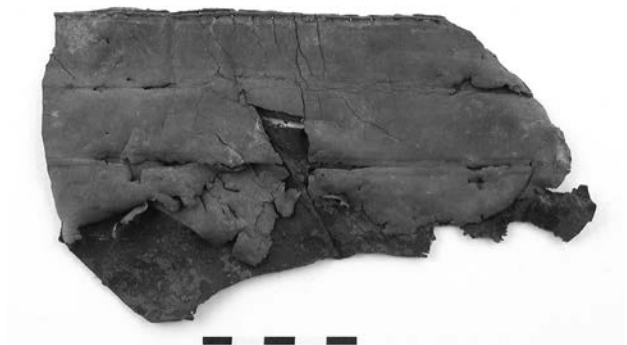
181. Cat. no: TMM 21816:NE11891

Find place: Åbo Akademi excavation 1998
Context: M118 (Kemicum)

Scabbard leather, a cut fragment. L. (178) mm, w. (105) mm (opened). Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5-7-mm

A longitudinal impression line next to the seam, on the



edge on the back and a double line on the middle of the front. Also a mark of an impressed, diagonal double line on the back.

It seems like the folds were never folded, a preform?

Dating: latter half of the 14th century – first half of the 15th century

182. Cat. no: TMM 21816:NE12413



Find place: Åbo Akademi excavation 1998
Context: M124 (Kemicum)

Scabbard leather, a cut fragment. L. (112) mm, w. (25) mm. Thickness of leather 1 mm. Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 7 mm

An impressed, diagonal double line

Dating: latter half of the 14th century - first half of the 15th century

183. Cat. no: TMM 21816:NE12740



Find place: Åbo Akademi excavation 1998
Context: M127C (Kosmorama B); a partly mixed context

Scabbard leather, five torn fragments from the upper end of the scabbard. The largest fragment, L. (235) mm, w. 60 mm.

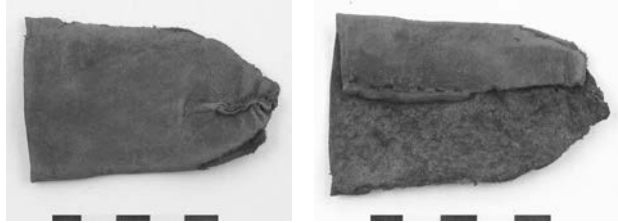
Thickness of leather 1.5 mm. The type of leather can not be identified.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 2-6 mm

Flesh/grain stitches on the mouth-end

Dating: middle of the 15th century – beginning of the 16th century

184. Cat. no: TMM 21816:NE128154



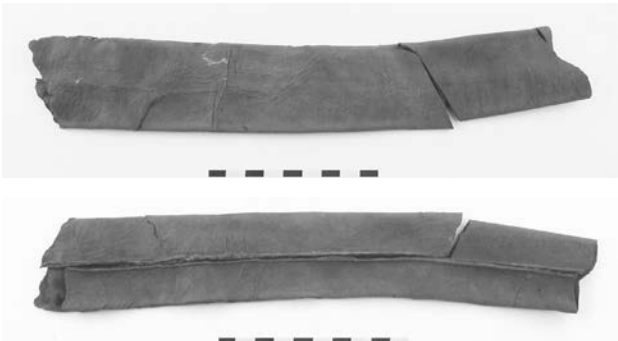
Find place: Åbo Akademi excavation
Context: M128D (Kemicum)

Scabbard leather, a cut tip-end. L. (77) mm, w. (45) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back (continues 30 mm to the front) with flesh/grain stitches; stitch type 1; stitch length 4-5 mm

Dating: latter half of the 14th century - first half of the 15th century

185. Cat. no: TMM 21816:NE147111



Find place: Åbo Akademi excavation 1998
Context: M147 (Kemicum)

Scabbard leather, a cut and torn fragment. L. (315) mm, w. 50 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre back with flesh/grain stitches; stitch type 1; stitch length 4-5-mm

On one side of the upper end, five diagonal slashes through the leather

Dating: first half of the 15th century

186. Cat. no: TMM 21816:NE201155

Find place: Åbo Akademi excavation 1998
Context: M201 (Kemicum)

Scabbard leather, a cut upper end. L. (97) mm, w. (58)



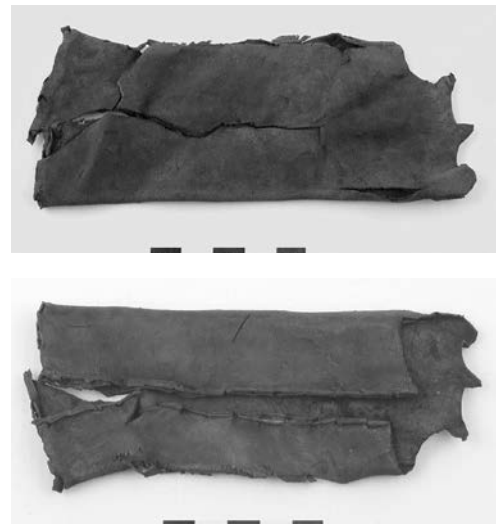
mm. Cut from lower end and from one side. Thickness of leather 1 mm. Calf leather.

Closed back seam with flesh/grain stitches; stitch type 1; stitch length 4-6 mm. On the upper edge, a transverse line of flesh/grain stitches

A longitudinal impression line next to the seam and on the edge on the back and front. On the back, left side of the seam, a row of six slashed, vertical, 20 mm slits; 10 mm below the slits, a paired slot.

Dating: latter half of the 14th century - beginning of the 15th century

187. Cat. no: TMM 21816:NE2035



Find place: Åbo Akademi excavation 1998
Context: M203 (Kemicum)

Scabbard leather, a lower component. L. (150) mm, w. (55) mm. Lower end is cut, for the detaching of the chape? Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 8 mm

On the top end, a closed seam, facing inwards, flesh/grain stitches; stitch type 1; probably for attaching the lower component to the upper component

Dating: latter half of the 14th century – beginning of the 15th century

188. Cat. no: TMM 21816:NE20311



Find place: Åbo Akademi excavation 1998
Context: M203 (Kemicum)

Scabbard leather, a cut and torn fragment. L. (150) mm, w. (35) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5 mm

A longitudinal line of impression next to the seam and on the edge on the back

Dating: latter half of the 14th century – beginning of the 15th century

189. Cat. no: TMM 21816:NE204237



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Scabbard leather, a fragment. L. (70) mm, w. (30) mm. Thickness of leather (1) mm (laminated). Calf leather.

Closed seam; stitch type 1; stitch length 4 mm.

A longitudinal line of impression next to the seam and on

the edge

Dating: latter half of the 14th century – beginning of the 15th century

190. Cat. no: TMM 21816:NE20945



Find place: Åbo Akademi excavation 1998
Context: M209 (Kemicum)

Scabbard leather, a cut and torn fragment. L. (200) mm, w. (50) mm. Thickness of leather 1 mm. Calf leather.

Centre-back seam; the seam is torn

Dating: latter half of the 14th century – beginning of the 15th century

191. Cat. no: TMM 21816:NE20496



Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Scabbard leather, a cut upper end. L. (140) mm, w. (40) mm, Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 7 mm

On the back, next to the seam, a row of 15 mm vertical slots; below, a paired slot

Dating: latter half of the 14th century – beginning of the 15th century

192. Cat. no: TMM 21816:NE204102

Find place: Åbo Akademi excavation 1998
Context: M204 (Kemicum)

Scabbard leather, a cut and torn fragment. L. (322) mm, w. 50 mm, Thickness of leather 1.5 mm. Calf leather.



Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6-7 mm

On the left side, next to the seam, a longitudinal impression line

On the front, near the top end, a 23 mm transverse slit; above this, a diagonal 10 mm slit; on the back face, next to the seam, a 20 mm vertical slit; slits probably for the suspension.

Dating: latter half of the 14th century – beginning of the 15th century

193. Cat. no: TMM 21816:NE500102



Find place: Åbo Akademi excavation 1998
Context: M500 (Kosmorama A), a partly mixed context

Scabbard leather, a cut fragment. L. (170) mm, w. (27) mm. Thickness of leather 1 mm.
Calf leather.

Closed back seam with flesh/grain stitches; stitch type 1; stitch length 6-9 mm

A longitudinal impression line next to the seam. Also, a mark of an impressed, diagonal double line

Dating: latter half of the of the 14th century – end of the 15th century

194. Cat. no: TMM 21816:NE503193



Find place: Åbo Akademi excavation 1998
Context: M503G (Kosmorama A)

Scabbard leather, a cut fragment. L. (175) mm, w. (29) mm. Thickness of leather 1 mm.
Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 4 mm.

Dating: latter half of the 14th century – beginning of the 15th century

195. Cat. no: TMM 21816:NE50483



Find place: Åbo Akademi excavation 1998
Context: M504 (Kosmorama A)

Scabbard leather, a cut fragment. L. (420) mm, w. 50 mm. Thickness of leather 1 mm.
Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 8 mm

Dating: latter half of the 14th century – beginning of the 15th century

196. Cat. no: TMM 21816:NE504150



Find place: Åbo Akademi excavation
Context: M504 (Kosmorama A)

Scabbard leather, a cut fragment. L. (175) mm, w. (47) mm. Thickness of leather 1.5 mm.
Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 7-9 mm

Dating: latter half of the 14th century – beginning of the 15th century

197. Cat. no: TMM 21816:NE504247

Find place: Åbo Akademi excavation
Context: M504 (Kosmorama A)

Scabbard leather, two cut fragments. Larger fragment, L. (270) mm, w. 50 mm. Thickness of leather 1.5 mm. Calf leather.

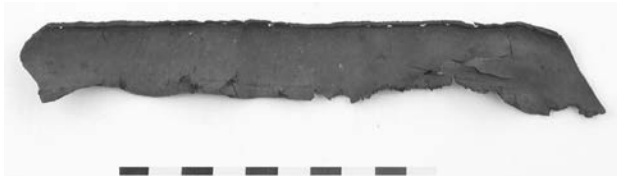


Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6-8 mm

On the other end of the larger fragment, a diagonal line of flesh/grain stitches, extending from the back to the front

Dating: latter half of the 14th century – beginning of the 15th century

198. Cat. no: TMM 21816:NE50570



Find place: Åbo Akademi excavation
Context: M505D (Kosmorama A)

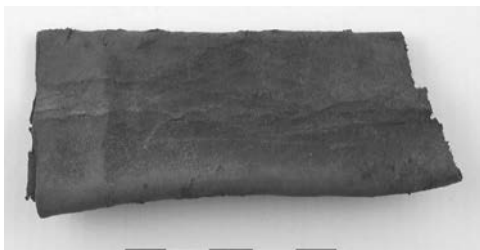
Scabbard leather, a cut fragment. L. (195) mm, w. (26) mm. Thickness of leather 0.5 mm (laminated). Calf leather.

Closed back seam with flesh/grain stitches; stitch type 1; stitch length 7 mm

A longitudinal impression line next to the seam; also a mark of an impressed, diagonal double line

Dating: latter half of the 14th century - first half of the 15th century

199. Cat. no: TMM 21816:NE509343



Find place: Åbo Akademi excavation 1998
Context: M509 (Kosmorama A)

Scabbard leather, a cut and torn fragment. L. (100) mm, w. 50 mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5 mm

An imprint of a ferrule? on the mouth-end?

Longitudinal impression lines on both sides of the seam

Dating: latter half of the 14th century – first half of the 16th century

200. Cat. no: TMM 21816:NE51141



Find place: Åbo Akademi excavation
Context: M511C (Kosmorama A)

Scabbard leather, two cut fragments. One is from the top end of the scabbard. L. (220) mm, w. (34) mm and L. (185) mm, w. (25) mm. Thickness of leather 1 mm. Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 9 mm. On the top end, a transverse line of flesh/grain stitches.

A longitudinal impression line next to the seam; on the back, a paired suspension slit 40 mm from the mouth-end

Dating: latter half of the 14th century

201. Cat. no: TMM 21816:NE51381



Find place: Åbo Akademi excavation 1998
Context: M513B (Kosmorama A)

Scabbard leather, a cut and torn fragment. L. (190) mm, w. (60) mm. Thickness of leather 1.5 mm. Calf leather.

Closed back seam with flesh/grain stitches; stitch type 1; stitch length 8-10 mm

A longitudinal impression line next to the seam; two or three faintly discerning longitudinal impression lines also between the seam and the edges

Dating: latter half of the 14th century

202. Cat. no: TMM 20764:1132



Find place: the Old Great Market excavation 1989
Context: layer 181

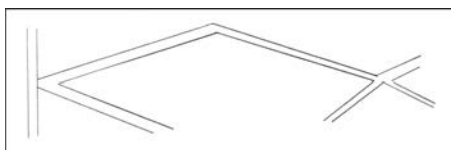
Scabbard leather, a cut fragment. L. (176) mm, w. (31) mm. Thickness of leather 1 mm. Calf leather.

Closed seam with flesh/grain stitches; stitch type 1; stitch length 4-5 mm

A longitudinal line of impression next to the seam; a similar but faintly discerning line on the edge

Dating: 1350 – beginning of the 15th century; layer group 4B; phase 4 (Pihlman 1995:63-64, 308)

203. Cat. no: TMM 20764:1134



Find Place: the Old Great Market excavation 1989
Context: layer 181

Scabbard leather, a cut fragment. L. (193) mm, w. (47) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 4-5 mm.

A longitudinal line of impression next to the seam; a similar line also on the back edge

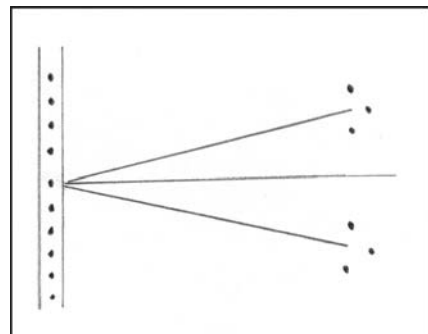
Decoration:

Technique: impression

A transverse double line across the whole front width; from this, branches double lines forming lozenges

Dating: 1350 – beginning of the 15th century; layer group 4B, phase 4 (Pihlman 1995:63-64, 308)

204. Cat. no: TMM 20764:1543



Find Place: the Old Great Market excavation 1989
Context: layer 181

Scabbard leather, three fragments. Largest, l. (95) mm, w. 58 mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6 mm

Fragments are from the upper end of the scabbard; the mouth-end is pointed; across the mouth-end runs a transverse line of running stitches.

A line of impression both sides of the seam and on both edges on the front and back

Decoration:

Techniques: impression, engraving

On one of the fragments, an impressed, transverse double line across the front, filled with engraved dots; three lines branch downwards in different directions from this line; three dots in a arrowhead-like formation in the ends of the outermost lines; on one fragment, a triangle, formed of three impressed lines, running parallel

Dating: 1350 – beginning of the 15th century; layer group 4B, phase 4 (Pihlman 1995:63-64, 308)

205. Cat. no: TMM 20764:1544a



Find place: the Old Great Market excavation 1989
Context: layer 236

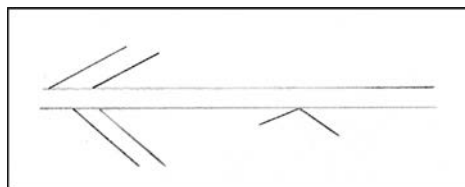
Scabbard leather, a cut upper end. L. (120) mm, w. 44 mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 3; stitch length 6-7 mm

A pointed mouth-end

Dating: first quarter of the 14th century; layer group 2, phase 2 (Pihlman 1995:62-63, 310)

206. Cat. no: TMM 20764:1544b



Find place: the Old Great Market excavation 1989
Context: layer 236

Scabbard leather, a cut fragment. L. (117) mm, w. (42) mm. Thickness of leather 1 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 7-8 mm

Decoration:

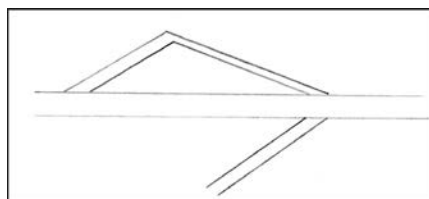
Technique: impression

Front: Lozenges diverging from a longitudinal double line on the middle of the scabbard

Back: diagonal lines

Dating: first quarter of the 14th century; layer group 2, phase 2 (Pihlman 1995:62-63, 310)

207. Cat. no: TMM 20764:1544c



Find place: the Old Great Market excavation 1989
Context: layer 236

Scabbard leather, a cut fragment. L. (80) mm, w. (40) mm. Thickness of leather 1 mm. Leather type?

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 3-4 mm

Decoration:

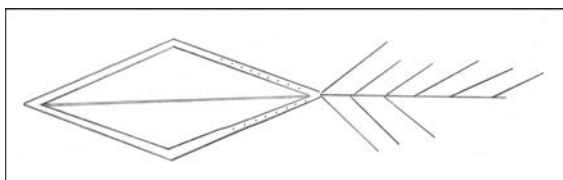
Technique: impression

Front: Lozenges? diverging from a longitudinal double line on the middle of the scabbard

Back: Diagonal lines?

Dating: first quarter of the 14th century; layer group 2, phase 2 (Pihlman 1995:62-63, 310)

208. Cat. no: TMM 20764:1547



Find place: the Old Great market excavation 1989
Context: layer 236

Scabbard leather, a cut lower end. L. (300) mm, w. 48 mm. Thickness of leather 1mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 3-4 mm. The seam continues 90 mm on the front face.

Longitudinal impression line on both sides of the seam

Decoration:

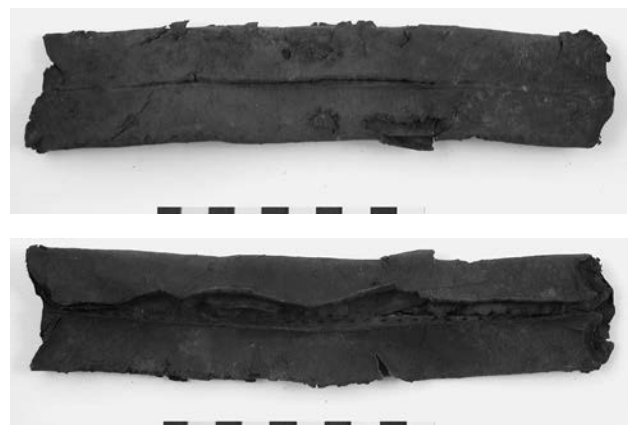
Technique: impression

Front: lozenges formed of impressed double lines and dots between the lines; chevrons, diverging in two directions from the middle of the impressed longitudinal line

Back: diagonal lines on both sides of the seam

Dating: first quarter of the 14th century; layer group 2, phase 2 (Pihlman 1995:62-63, 307)

209. Cat. no: TMM 21125:47



Find place: The Aboa Vetus excavation 1992
Context: the garage area

Scabbard leather, a cut fragment. L. (215) mm, w. (45) mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6 mm.

Lining of hemp inside (see Appendix 2)

Dating: the Middle Ages?

Published account: Jokela (2002:140)

210. Cat. no: TMM 14681:838

Find place: sewer construction, Itäinen rantakatu, 1952-1953

Context: ditch no. 32 (lower end of the Rettig slope), 'from deep, under the logs'

Scabbard leather, a cut fragment. L. (133 mm), w. (50) mm. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 6 mm

Decoration:

Technique: impression

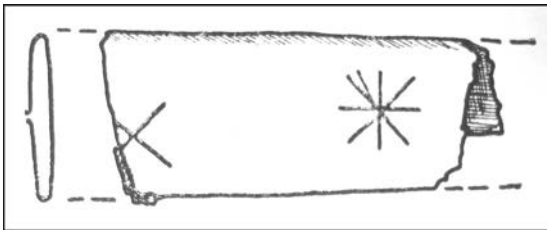


An impressed line on both sides of the seam, and on the edges on both sides; a double line also on the middle on the front

Two paired (secondary?) suspension slots on the front

Dating: the Middle Ages (dating of the context, Pihlman 1995:337)

Published account: Valonen (1958: table 14)



Front: star-like mark on the front and part of another similar

Dating: the Middle Ages (Pihlman 1995:118, 335-336)

Published account: Valonen (1958: table 14)

211. Cat. no: TMM 14681:1817



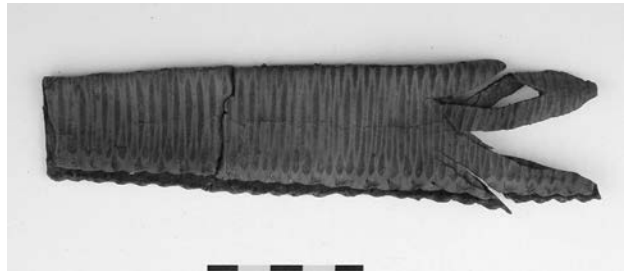
Find place: sewer construction, Itäinen rantakatu, 1952-1953

Context: ditch no. 58 (lower end of the Nunnakatu), 'from the lowest clay layer'

Scabbard leather, a torn upper end. L. (165) mm, w. (95) mm opened, 50 mm original. Thickness of leather 1.5 mm. Calf leather.

Closed seam, centre-back with flesh/grain stitches; stitch type 1; stitch length 5-6 mm. A running stitch on the mouth-end

212. Cat.no: TMM 21816:NE5167



Find place: Åbo Akademi excavation 1998
Context: M516 (Kosmorama A)

Grip covering, two fragments belonging together. L. (178) mm, w. 35 mm (upper end) – (45) mm (lower end). Thickness of leather 1 mm. Calf leather.

Butted seam with flesh/grain stitches; stitch type 3; stitch length 6-8 mm

Two suspension? loops (secondary) have been cut on the top end

Decoration:

Technique: impression

Front: impressed transverse stripes

Back: same as front

Decoration similar as on the grip covering 213 from the Aboa Vetus museum (TMM 21125: 185)

Dating: latter half of the 14th century – 15th century

213. Cat. no: TMM 21125:185

Find place: The Aboa Vetus excavation 1992
Context: the garage area

Grip covering, a cut fragment. L. (105) mm, w. (40) mm. Thickness of leather 1 mm. Calf leather

Butted seam with flesh/grain stitches; stitch type 3; stitch length 5-8 mm.



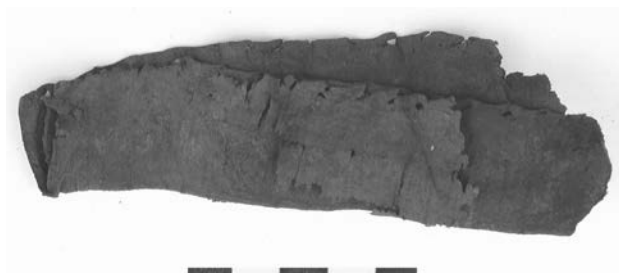
Decoration:

Similar as in 212

Dating: the Middle Ages?

Published account: Jokela (2002:140); catalogued as a knife sheath

214. Cat. no: TMM 20764:346



Find place: Old Great Market excavation 1989
Context: layer 10, square 7

Grip covering L. 130 mm, w. 30 mm (upper end) - 42 mm (lower end). Thickness of leather (0.5) mm (laminated). The type of leather can not be identified.

Butted seam, with flesh/grain stitches; stitch type 3, stitch length 6-8 mm.

Impressed, transverse lines; probably imprint of the wire, originally wrapped around the leather covering

Dating: the Middle Ages; layer group 7, phase 4/5, mixed layers (Pihlman 1995:64, 309)

215. Cat. no: TMM 20764:1410

Find place: the Old Great Market excavation 1989
Context: layer 214

Grip covering L. 130 mm, w. 25 mm (upper end) - 40



mm (lower end). Thickness of leather 1 mm. The type of leather can not be identified.

Butted seam with flesh/grain stitches; stitch type 3; stitch length 6-7 mm

Decoration:

Technique: stamping

Three-petaled flowers

Divided with transverse, raised moulding

Dating: second quarter of the 14th century; layer group 3a, phase 3 (Pihlman 1995:63, 310)

216. Cat. no: TMM 20764:1136



Find place: the Old Great Market excavation 1989
Context: layer 181

Grip covering, a cut fragment. L. (58) mm, w. (35) mm. Thickness of leather 1 mm. Calf leather.

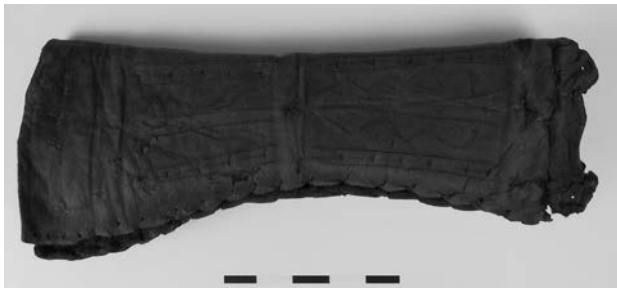
Butted seam with flesh/grain stitches; stitch type 3; stitch length 4-5 mm

Decoration: transverse, raised mouldings; the leather cover has probably been pressed on a wooden hilt, which was wound with twisted wire; there are impressions of such wire on the flesh side of leather covering

Dating: 1350 - beginning of the 15th century; layer group 4B, phase 4 (Pihlman 1995:63-64, 308)

217. Cat. no: TMM 21816:NE2065

Find place: Åbo Akademi excavation 1998
Context: M206 (Kemicum)



Grip covering L. 150 mm, w. 60 mm (on the ends), 40 mm (on the middle). Thickness of leather 1 mm. Calf leather.

Butted seam with flesh/grain stitches; stitch type 3; stitch length?

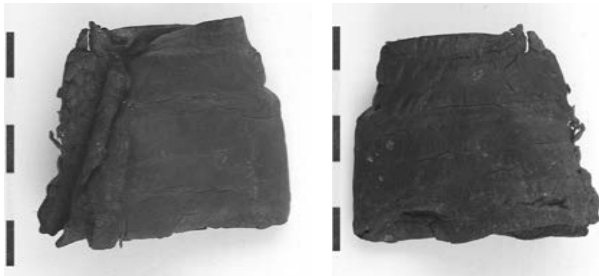
Decoration:

Technique: impression

Half-leaves on both sides of the middle-line

Dating: latter half of the 14th century – first half of the 15th century

218. Cat. no: TMM 20764:1053



Find place: the Old Great Market excavation 1989
Context: layer 159
Present location: Turku Provincial Museum

Rain guard from a sword L. 44 mm, w. 52 mm. Thickness of leather (1) mm (laminated). Calf leather.

Made of one piece of leather; the piece is folded and stitched on the other edge by a closed seam with flesh/grain stitches; stitch type 3; stitches do not extend to the upper edge, there is an opening formed for the guard of the sword on both sides; the leather piece has stitch holes again on the both upper corners to close the openings above the cross-guard.

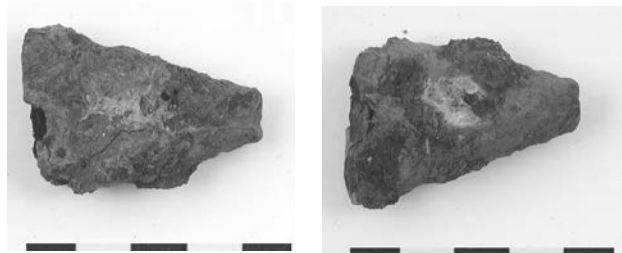
Decoration:

Technique: impression

Transverse lines

Dating: 1350 – the beginning of the 15th century; layer group 4a, phase 4 (Pihlman 1995:63-64, 307)

219. Cat. no: TMM 21816:A997



Find place: Åbo Akademi excavation 1998
Context: M173

Ferrule from the tip-end of the sheath L. 44 mm, w. 31 mm.

Iron with remains of leather inside

Dating: latter half of the 14th century – (beginning of the 15th century)

220. Cat. no: KM 95032:950



Find place: The Aboa Vetus excavation 1994-1995
Context: under level R76

Knife inside the sheath **125** Handle l. 95 mm, blade 120 mm; tang protrudes through the handle and is riveted

Published account: Jokela 2002:38

221. Cat. no: TMM 22237:NA183:002

Find place: Library site excavation 2003
Context: layer M257

Knife sheath L. 155 mm, w. 32 mm. Handle l. 75 mm, blade l. 80 mm. Thickness of leather 1.5 mm. Goat leather.

Closed side seam, handle section riveted with six rivets. A metal ferrule on the blade side of the blade section.

On the handle, a vertical line of paired slots, five slots in a row

A rectangular indent on the mouth-end



Decoration:

Technique: excision

Two decoratively excised fringes on the blade section of the seam side

Dating: the latter half of the 14th century (Tuovinen & työryhmä 2004)

222. Cat. no: TMM 20764:1469



Find place: Old Great Market Excavation 1989
Context: layer 225

Knife sheath's cap L. 25 mm, w. 40 mm (opened).
Thickness of leather 1 mm (laminated). The type of leather cannot be identified.

Closed seam with flesh/grain stitches on top of the cap, continues to the side; stitch type 1

A paired suspension slot on both sides

Dating: second quarter of the 14th century; layer group 3b ; phase 3 (Pihlman 1995:63, 307)

223. Cat. no: TMM 20764:1622

Find place: the Old Great Market excavation 1989
Context: layer 236

Rain guard from a sword L. 33 mm, w. 70 mm.
Thickness of leather 1.5 mm. Calf leather.



Made of one piece of leather; the piece is folded and stitched on both edges by a closed seam with flesh/grain stitches; stitch type 3; stitches do not extend to the upper edge, there is an opening formed for the guard of the sword on both sides

Decoration:

Technique: impression

Faintly discerning transverse lines

Dating: the first quarter of the 14th century; layer group 2, phase 2 (Pihlman 1995:62-63, 307)

224. Cat. no: TMM 17296:50a



Find place: groundwork pit for a new building, Uudenmaankatu 5a, 1971
Context: unknown

Rain guard from a sword L. 40 mm, w. 75 mm.
Thickness of leather 1.5 mm. Calf leather.

Made of one piece of leather; the piece is folded and stitched on the other edge with flesh/grain stitches; stitches do not extend to the upper edge, there is an opening formed for the guard of the sword on both sides; the leather piece has flesh/grain stitch holes again on the both upper corners to close the openings above the cross-guard; stitch type 3. The other half of the guard is cut.

Decoration:

Technique: impression

Transverse lines

Dating: the Middle Ages

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- I Castella Maris Baltici I. The proceedings of a Symposium held in Turku, Finland, on 3-8 September 1991. Stockholm 1993.
- II Castella Maris Baltici II. The proceedings of a Symposium held in Nyköping, Sweden, on 3-9 September 1993. Nyköping 1996.
- III Uotila, Kari. Medieval Outer Baileys in Finland. With Special Reference to Turku Castle. Dissertation, Turku University. Turku 1998. Sold out.
- IV Uotila, Kari (ed.) Vesilahden Laukko. Linna, kartano, koti. Turku 2000. Sold out.
- V Castella Maris Baltici III-IV. The proceedings of a Symposium held in Malbork (Marienburg), Poland, on 2-8 September 1995 and of a Symposium held in Tartu (Dorpat), Estonia, on 10-14 September 1997. Gdansk 2001.
- VI Castella Maris Baltici V. The proceedings of a Symposium held in Rudkobing, Denmark, on 31 August– 4 September 1999. Rudkobing 2001.
- VII Castella Maris Baltici VI. The proceedings of a Symposium held in Vilnius, Lithuania, on 18-21. September 2001. Vilnius 2004.
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- IX Seppänen, Liisa (ed.) Kaupunkia pintaa syvemmältä. Arkeologisia näkökulmia Turun historiaan. (Under the Urban City. Archaeological Perspectives on the History of Turku). Turku 2003.
- X Harjula, Janne. Sheaths, Scabbards and Grip Coverings. The Use of Leather for Portable Personal Objects in the 14th - 16th Century Turku. Hämeenlinna 2005.

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This book offers an interesting glimpse to the material culture of medieval Turku, the most important town of Finland in the Middle Ages. In this archaeological study by **Janne Harjula**, there are presented and discussed the knife sheaths, sword scabbards and grip coverings from swords or daggers found in archaeological surveys and excavations carried out during the last hundred years in the town of Turku and at Turku Castle. The objects of this study were manufactured of leather, a significant raw material often called 'the plastic of the Middle Ages'. The whole research material is comprised of 224 artefacts, dated to the 14th - 16th centuries.

As personal equipment accompanying the owner, the artefacts of this study inevitably reflect the mentality and aesthetic values of their period and society. These have been viewed by studying the decoration of the artefacts. It is also asked where and by whom the objects were made, and who the users were.

All the artefacts have been individually described in text and pictures in the catalogue section of the book. Besides the medieval material, there's been included a short introduction to Iron Age sheaths and scabbards in Finland in the light of the present knowledge.

This study is a part of the project 'From Village into Town - Changing Ways of Life in Southwestern Finland from the 10th to the 16th century'. The project was funded by the Academy of Finland in 2001 - 2003 and carried out in the department of archaeology, University of Turku and Turku Provincial Museum.

This book is the tenth volume in the *Archaeologia Medii Aevi Finlandiae* series, publications of the **Society for Medieval Archaeology in Finland**.

