

THE BIRKA WARRIOR

The material culture of a martial society

Charlotte Hedenstierna-Jonson



Stockholm University

Abstract

This is a study of martial material culture in the context of the Viking Age warrior of Birka, Sweden. The aim is to establish the role, function and affiliation of the Birka warrior and thereby place Birka on the power-political map of the 10th century. The study is based on the excavations of the fortified structures, particularly the Garrison, at the trading post of Birka as well as the extensive remains of material culture deriving from these investigations. A starting hypothesis is that an analysis of material culture constitutes a way of mapping social structures and that style and iconography reflect cultural groups, contacts and loyalties.

Based on the case studies of six papers, the synthesis deals with questions of the work and world view of the warriors, as too their relation to their contemporary counterparts in eastern and western Europe. Questions are raised concerning the value and function of symbols in a martial context where material culture reflects rank, status and office. In defining the Birka warrior's particular stylistic expression, a tool is created and used in the search for contacts and affiliations reflected through the distribution patterns. The results show close contacts with the eastern trading posts located on the rivers Volga and Dnjepr in Ancient Russia.

It is stated that these Rus' trading posts, essentially inhabited by Northmen, shared a common cultural expression that was maintained throughout a vast area by exceptionally close contacts. It is suggested that a particular stylistic expression developed in these Rus' trading places containing elements of mainly Scandinavian, Steppe nomadic and Byzantine origin.

In conclusion, the results of this thesis show that the warriors from Birka's Garrison had a share in the martial development of contemporary Europe but with their own particular traits. Close relations with the eastern trade route and contact with the powerful Byzantine Empire were enjoyed. As a pointer for future research, it is wondered what organisational form the close-knit structure of the Rus' trading posts actually took, keeping the subsequent guilds of medieval Europe in mind. The fall of the Garrison, as of Birka, corresponds with the establishment of Christianity in the region. Such changes were not limited to Central Sweden but part of a greater process where a new political structure was developing, better anchored in local concerns.

Keywords: Birka, martial society, warrior, material culture, distribution patterns, cultural expression, Rus', Viking Age, Early Middle Age, iconography, style.

© Charlotte Hedenstierna-Jonson, Stockholm 2006

ISSN 1400-7835
ISBN 91-89338-15-4

Typesetting: Intellecta Docusys
Printed in Sweden by Intellecta Docusys, Stockholm 2006
Distributor: Archaeological Research Laboratory, Stockholm University

Cover: *The eastern and western warrior. 7th century helmet mount, Vendel XIV. After drawing by O. Sörling.*

To the Heroes on the Home Front

Acknowledgements

When reaching this point in the process of doctoral studies, feelings of gratitude are most apparent and highly apt. Most of all I want to thank my supervisor and project leader Dr Lena Holmquist Olausson, who with a firm but friendly hand has guided me through these years with never failing enthusiasm. If truth be told I have enjoyed the ride. With generosity she has provided me with the material and results of one of the most interesting archaeological contexts of recent years – the Garrison at Birka.

My deep gratitude is extended to Professor emerita Birgit Arrhenius, my assistant supervisor, who led me down this road in the first place and who has shared her extensive knowledge and experience along the way. Professor Kerstin Lidén, who conscientiously contributed with both intellectual and practical help, ensured me a stimulating working environment at the Archaeological Research Laboratory.

I am greatly indebted to Assistant Professor Michael Olausson for challenging me in my theories and encouraging me to be more daring, though stringent, in my conclusions, but first and foremost who has shown me that the glory and soul of archaeology truly lies in the trenches. Most kindly Professor Gustaf Trotzig has contributed to my research with numerous foresighted comments and convivial conversation. I am indebted to Assistant Professor Ingmar Jansson who has given generously of his time and knowledge, and provided me with a multitude of un-get-at-able books and papers. My gratitude also to Assistant Professor Lennart Karlsson, who introduced me to the world of Northern style and who has continuously shown interest in my work, for which I am very grateful. Dr Uaininn O'Meadhra has revised my English and kindly contributed with her broad knowledge even regarding the content of the texts. The close working relationship I have enjoyed with conservator Honorary Dr Margaretha Klockhoff has been of infinite value for the results of the thesis and has also provided many fine moments at the Laboratory.

I would like to direct a very special thanks to my 'trench-mates' in the many campaigns at Birka and at other excavations in Sweden and Macedonia. You have all, and perhaps in particular the unofficial society of Mining Horses (Laila, Helena, Niklas, Lotta, Jens, Sara, Cecilia), made excavation a proper pleasure. *Strength and Honour!*

All friends at the Laboratory have contributed with good company and generous assistance, making my years there both pleasant and exciting. Many thanks to Lotta Bergström, Gunilla Eriksson, Ann-Marie Hansson, Björn Hjulström, Sven Isaksson, Laila Kitzler Åhfeldt, Anna Linderholm, Anita Malmius, Veronica Nyström, Kjell Persson, Ludvig Pappmehl-Dufay, Slavica Petrovski, Sylvia Sandelin and Malgorzata Wojnar-Johansson. This work has benefited greatly from the many discussions with friends and colleagues Professor Kenneth Jonsson, Dr Fedir Androshchuk, Dr Anna Kjällström, Niklas Stjerna, Ylva Stenqvist Millde, Ny Björn Gustafsson and Torsten Svensson – thank you all.

Sällskapet för Svenska Borgstudier has provided a forum for scholarly discussion disguised as pleasant divertissement.

Inger Kåberg has been exceedingly helpful in making everything turn from text to book. I also want to thank the professional and obliging staff at the Library of the Royal Academy of Letters, History and Antiquities. Financial support has come from Riddarhuset, Berit Wallenbergs stiftelse, Helge Axson Johnsons stiftelse, Gunvor och Josef Anérs stiftelse and the Department of Archaeology and Classical Studies at Stockholm University.

Good friends are everything. My most sincere thanks to Monica Edström and her family for all aspects home life, to Catharina Sitte Durling for your on-campus support, and to Viveca Bjurtoft for being in general a good old friend. Finally there are those who without question have supported me through thick and thin and to whom a thank you does not seem quite enough. Thanks to my parents Lena and Göran Hedenstierna, always encouraging me to do what I find most interesting, but also expecting me to do my best. Freedom under responsibility is a powerful tool when facing the trials of thesis-writing. Sofia, Magnus and Louise, not only for inestimable help with logistics but for all the interest and support you've shown.

An indefatigable trio has stood fast by my side through the ups and downs of this work. My wise and considerate husband Staffan, who, apart from offering assistance in every possible way, willingly has discussed the contents of my work in the perspective of modern politics. August and Arvid, though small-sized knights, have endured it all with unperceived patience and unconditional love and support. You are truly the heroes on the home front.

Charlotte Hedenstierna-Jonson

Contents

1. INTRODUCTION.....	9
Terminology	10
THESIS STRUCTURE AND RESULTS.....	12
Case studies – papers I–VI.....	12
CONTEXT	14
Birka and its military structures – archaeological background	16
The Eastern connection.....	17
2. WEAPONS, WARFARE AND CULTURAL EXPRESSION	22
THE PACIFIED PAST	22
MILITARISED SOCIETY	24
The Retinue system – and the mercenary.....	26
The Impact of martial society – the honourable warrior.....	27
Warfare	30
EXPRESSING CULTURE AND IDENTITY.....	33
Defining style.....	34
The issue of identity.....	36
DIFFERENCES IN EXPRESSION – THE GARRISON IN CONTRAST TO THE GRAVES.....	37
3. ARTEFACT, CONTEXT AND DISTRIBUTION.....	40
PARTICULAR DESIGN AND PATTERNS OF DISTRIBUTION	40
Material culture in the light of archaeological science	42
4. ON THE MARTIAL SIDE OF BIRKA.....	46
FORTIFICATIONS.....	48
WORK AND WORLD VIEW OF THE WARRIORS.....	53
Personal and professional	53
The Dress and equipment of the Birka warrior	54
Organisation and training.....	61
FIGHTING TECHNIQUES IN RELATION TO THE FORTIFICATIONS OF BIRKA	66
Dominance and defence	66

5. RUS', VARANGIANS AND NORTHMEN.....	71
BIRKA AS AN ANOMALY – AND ANALOGY.....	71
Hedeby and the Danish ring fortresses	71
Eastern analogies	75
RUS' IDENTITY.....	78
CREATING A CULTURAL EXPRESSION.....	81
A typical Rus' stylistic expression?	82
6. THE WARRIORS AND THE BIRKA CONSTRUCT IN THE 10TH CENTURY	87
AT CLOSE RANGE.....	88
Birka	88
The warriors	89
Rus'	90
THE WIDER CONTEXT	91
Placing Birka on the power-political map.....	91
A change in power-structure	92
The End.....	93
7. SUMMARY.....	94
THE BIRKA WARRIOR – the material culture of a martial society.....	94
REFERENCES.....	98

List of papers

- I. **Hedenstierna-Jonson, C.** 1998. The study of three mounts from Vendel using laser scanning techniques and surface structure analysis. *Laborativ Arkeologi* 10–11. Stockholm. 81–84.
- II. **Hedenstierna-Jonson, C.** 2002. A group of Viking Age sword chapes reflecting the political geography of the time. *Journal of Nordic Archaeological Science* 13. Stockholm. 103–112.
- III. **Hedenstierna-Jonson, C.** Rus', Varangians and Birka Warriors. *The Martial Society, Aspects on Warriors, Fortifications and Social Change from the Bronze Age to the 18th Century*. L. Holmquist Olausson & M. Olausson (eds.). Stockholm. In print.
- IV. **Hedenstierna-Jonson, C. & Holmquist Olausson, L.** 2006. *The Oriental Mounts from Birka's Garrison*. Antikvariskt arkiv 81. Stockholm
- V. **Hedenstierna-Jonson, C.** Borre style metalwork in the material culture of the Birka warriors. An apotropaic symbol. *Fornvännen* 101. *Journal of Swedish Antiquarian Research*. Stockholm. Accepted.
- VI. **Linderholm, A., Hedenstierna-Jonson, C., Svensk, O. & Lidén, K.** Diet and status in Birka. Analysis of stable isotopes and grave goods. Manuscript.

1. INTRODUCTION

There are many preconceptions concerning the Vikings, ranging from the mead-drinking savage with horned helmet of popular culture, to the unsuitability of calling anyone a ‘Viking’ at all. During the 1980s and 90s the image portrayed in earlier studies of a barbaric yet successful conqueror, was partly overshadowed by a new image, more or less well formulated, of a friendly tradesman and/or farming settler. Viking Age violence became demoted to a necessary evil, at most, and weapons were reduced to mere symbols rather than fighting equipment for active use. An acknowledgement of the importance of warfare and violence in early medieval society has now become a topic of renewed relevance in historical and archaeological studies that should even include the Scandinavian/Northern cultural sphere of the time. Despite this newfound interest in warfare-related problems, the paucity of source-material for Scandinavian archaeology and history has not permitted the thorough treatment available in the cases e.g. of the well documented Franks or Normans. However, with the excavations of the Garrison at the Viking Age trading-post of Birka, situated on the island of Björkö in Lake Mälaren, in eastern central Sweden (fig. 1 & 2), the situation has now changed, at least when it comes to archaeological source-material. This unique and excessively rich archaeological site, is marked by military activity in the late 10th century and provides an unusual insight into the material culture of a martial society in Scandinavia during the Viking Age.

The present study has two main aims:

- The first is to recognise and characterise the Birka warrior and define the particular stylistic expression of his material culture, thereby creating a tool for identifying patterns of artefact distribution that reflect the movements and contacts of these warriors.
- The second aim is to employ this tool to uncover the role, organisation and affiliations of the warriors and by doing so, to position the trading post of Birka within the greater context of power politics during the final stages of its existence.

The study is based on excavation of Birka's fortified structures and on the find material and results deriving from these investigations, in particular the results of excavation of Birka's Garrison from where an extensive amount of objects have been retrieved, providing a first-hand insight into the life of the warrior through his material remains. Questions raised concern the value and function of symbols in a martial context where material culture reflects rank, status and office. The diversity of the cultural regions and power-realms represented in the Garrison evidence begs the question of whom the warriors actually served. What do the different objects and their connections with other archaeological finds indicate in terms of political, diplomatic and military relations and affiliations? Analogies with archaeological material in Ancient Russia are presented and discussed in terms of the identity and cultural expressions particular to the group of people called *Rus*'.

The starting hypothesis of this study maintains that an analysis of material culture constitutes a way of mapping social structures and thereby that style and iconography reflect cultural groups, contacts and loyalties. In this perspective the advantages of research into the material culture of a warrior society is obvious, as it constitutes a particularly well-defined and limited group of artefacts whose design and decoration reflect different aspects of martial life.

Terminology

The Viking Age, dating from the end of the 8th century to the mid 11th century, comprises the final period of prehistory in Scandinavia, also referred to as the Later Iron Age. This definition in itself creates and enhances the differences between Scandinavia and contemporary early medieval Europe that actually did not exist. The absence of a written language and the fact that Scandinavia was not yet Christianised constituted important and decisive differences indeed, but in many ways this region played an integral part in the broader cultural development of Europe and maintained an awareness of and contact with most parts of the then known world.

Consequently I will use the term *early medieval* for the time period in question (i.e. AD 750 – 1000; the duration of the activities in the trading post of Birka). For contexts restricted to the historic development of Scandinavia, I will use the term *Viking Age*, as it is well-established in the terminology of Scandinavian historiography.

In my previously published case studies (papers I–VI), I used the then accepted terms Viking, Viking Age and Scandinavian when referring to the people of Viking Age Scandinavia. These classic terms are the subject of much critique in Viking studies today. Eric Christiansen in the introductory

notes to his work *The Norsemen in the Viking Age* (2002) challenges the fickle expression ‘Viking’, observing that it has become somewhat of an ethnic term, that what is usually meant when using the term ‘Viking’, is people “of Nordic aspect and speech living in Scandinavia and the Norse colonies in the Early Middle Ages” (2002:1). In this context ‘Nordic’ alludes to the culture of those who were part of the speech community of the Old Norse family of tongues, referred to in the saga literature as *Danska Tungo* (Christiansen 2002:4). As the language and consequently the historical documents of the runic inscriptions and saga literature possibly constitute the lowest common denominator, the term Norse should be applicable, but it has become now more or less synonymous with Norwegian. Therefore, in this synthesis I have chosen to use the term *Northmen* or *people from the North* (Sw. *nordbor*) when referring to the people, and *Northern* when referring to their culture (cf. Christiansen 2002:4 who uses Norse and Nordic for these). I retain the term Scandinavia mainly as a geographical term, though I would like to point out that this term has modern connotations, on equal footing to ‘Swede’ and ‘Norwegian’.

Finally in this scrutiny of problematic terminology, I would like to explain my use of the terms *warrior* as opposed to soldier, and also what the word *professionalism* implies in this context. When referring to the various main types of arms-bearing men, warrior is defined as a man whose vocation is war, while the soldier has war as his profession (Sanders 1999). According to this definition, the warrior fights for personal recognition and therefore fought as an individual rather than as a member of a disciplined battle order. In turn, the soldier is part of a clearly defined military strategy where honour on a personal level is subordinated. On a more practical note the warrior supplied his own arms and armour, while the soldier acquired them from the lord or king (cf. Pauli Jensen, Jørgensen & Lund Hansen 2003). When dealing with a martial context like that of Birka’s garrison, these definitions become too blunt, as the Birka construct incorporated significant elements of both. With regard to vocation and the concept of personal and military honour, these arms-bearing men were clearly warriors but their organisation, system of rank, and advanced forms of warfare techniques which included fighting in battle formation, signify the soldier. *Consequently these men are defined as professional warriors, the military elite of a martial society devoted to, and living by, their vocation.*

THESIS STRUCTURE AND RESULTS

The six papers constitute case studies where different categories of objects are presented, stylistically defined and placed in a wider context of cultural exchange and contact networks. The case studies are given a conceptual footing in chapter 2 where previous research and my personal standpoint concerning weapons, warfare and cultural realms are integrated to form the theoretical framework of the thesis. In order to define the particularity of the warrior's material culture, the artefacts, their context and distribution are set in focus in chapter 3 where the different methods applied in the case studies are presented. The archaeological context of the unique find material from Birka's Garrison is presented in chapter 4 and the martial aspects of Birka are discussed. The Garrison constitutes an anomaly in Viking Age Scandinavia and therefore it is necessary to place the material in a wider perspective in order to understand its role, function and importance. Chapter 5 is dedicated to the Eastern analogies of the Birka warriors and to the question of a stylistic expression particular to the Rus', Varangians and Northmen in Ancient Rus'. Finally, in chapter 6, conclusions are drawn concerning the greater power-political context of the Birka construct and of its warriors during the 10th century, based on the collected results of the case studies.

Case studies – papers I–VI

Paper I is a methodological study on the application of laser scanning techniques and surface-structure analysis to archaeological material. The aim of the study was to establish if the method can provide new knowledge about ornamental details on damaged surfaces where other analytical techniques have failed. The results of the study show that the method can supply a limited amount of new information and that further refinement could produce even additional valuable evidence.

Paper II is an iconographical study, partly based on surface structure analysis conducted on a sword chape of a type not previously found in Birka. The particular type of sword chape is defined and a survey of its area of distribution is presented. The results of the survey reveal that the locations of these finds, though geographically dispersed, show a certain conformity in structure and function. The sites were generally places of local, regional or even inter-regional importance, and the chapes have been retrieved from settlement contexts rather than graves and occur as solitaires, only one in each location. In conclusion of the iconographical study, which isolates a motif directly paralleled to that of the Jellinge stone in Denmark, the chape is suggested to be a symbol of office related to the Danish court

and that its distribution consequently should be seen as a reflection of the diplomatic contacts and political relations maintained by that court.

Paper III is a similar study focusing on another type of sword chape, in this case with a motif that has already been linked especially to Birka and its warriors – ‘the Birka falcon’. In contrast to the chapes in paper II, the falcon chapes usually occur in graves, several to the one site but only one in each grave. Based on their context and distribution, these chapes have been interpreted as symbols of rank and affiliation to a particular group of warriors, and they are regarded as diagnostic artefacts, interrelating the sites where they have been found. As the majority of these sites played key roles in the general economic, political and social growth of Ancient Russia, the warriors with falcon chapes are discussed in relation to the Rus’ and the Varangians – the two groups of Northmen presented in the contemporary sources as active agents in that region’s development.

Paper IV is an extensive study of the Oriental mounts and the Eastern connotations of objects retrieved from Birka’s Garrison. The mounts derive from composite belts, belt pouches and other equipment connected with the Eastern warrior and are seen as indicators of rank and status, implying that some at least of the ideological framework inherent to these mounts was imported together with the objects themselves. The significance of the warrior belt is particularly emphasised. The mounts from the Garrison have been subjected to stylistic and comparative studies, a process where the importance of close collaboration with the archaeological conservator is emphasised. The results from the stylistic study are supplemented by Scanning Electron Microscope (SEM) analyses of the chemical content of the metal, indicating places of manufacture that lay within the realm of the Volga Bulgars. The particular traits of these oriental-style mounts are defined, their place of origin is discussed, and their distribution is correlated with Birka’s other evidence for contacts with corresponding sites along the Eastern trade route.

Paper V concentrates on the Northern contribution to the stylistic expression of the Birka warrior and asks why this great style (Borre) is confined to particular items of warrior equipment. An iconographical analysis of the different elements of the style indicates that its designs incorporate apotropaic qualities appropriate to a martial context. It is also noted that the Borre style can be found in the archaeological material of Ancient Rus’ in the same manner and context as in Birka, further strengthening the suggested relation between these different sites.

Paper VI compares the interpretation of grave goods in a number of Birka’s graves with the results from dietary studies based on isotope analysis. Starting off with the questions who ate what? where?, the study shows that there is a marked anomaly in diet both between women and men, and between men buried with and without weapons. There are strong indications

that some of the individuals in the graves derive from separate geographical areas. The results clearly indicate differences among those buried in Birka in rank and status, but also in role and origin. The study also illuminates the complexity of the problem of interpreting weapon graves and begs the question of who on the basis of grave material should be considered a warrior and who not.



Figure 1. Birka, located in Lake Mälaren, Sweden (map by C. Hedenstierna-Jonson).

CONTEXT

During the early medieval period, Central Sweden consisted of several different regions of power and interest, and subsequently separately defined groups of people. Political power was exercised through the itineration of a political leader between different centres of power (Brink 1996:239f). This becomes obvious when studying the affiliations and rulers of Birka. According to the two roughly contemporary sources mentioning Birka: Rimbert's *Vita Ansgarii* written in the 9th century and Adam of Bremen's 11th century account of the archbishops of Hamburg-Bremen, the trading post was situated in the midst of the realm of the Svea kings. Birka constituted the main centre for trade and craftwork during the period between the mid 8th century and the end of the 10th century, when the religious centre of the Svea realm was situated in Old Uppsala. Though in agreement on the loca-

tion of Birka, the description given of who had power over the trading post is somewhat ambiguous. According to Rimbert, Birka was a port of trade in the land of the Swedes (Rimbert chap. 11), whilst Adam of Bremen described it as “a town of the Goths situated in the middle of Sweden not far from the temple called Uppsala” (Adam of Bremen, *History of the Archbishops of Hamburg-Bremen*. Engl. transl. F. J. Tschan, 2002:51). What is actually meant in this context by the Swedes (Svear) as opposed to the Goths (Götar) is difficult to establish, but according to Christiansen the Swedish identity involved certain rights, e.g. attending the *thing* to debate and vote in public affairs and the right to claim tribute from the eastern Baltic coastlands (Christiansen 2002:131). The king of Birka, possibly the king of the Svear realm, resided on the neighbouring island of Adelsö (fig. 2), commonly seen as an integrated part of the Birka construct. Adelsö had a royal manor (*kungsgård*) which was active during the same time-span as Birka, and the manor of *Hovgården* is usually regarded as having looked after the administrative functions of Birka (Carlsson 1997).



Figure 2. The Lake Mälaren region (map by L. Bergström).

Birka and its military structures – archaeological background

The trading post of Birka is a well-known and well-studied archaeological site. Though known since medieval times as the town or trading place in the realm of the Svear king, the archaeological remains have during historical times been subject to a number of non-scientific investigations. More reliable investigations began in the late 19th century when the great doyen of Birka studies, Hjalmar Stolpe, led the excavations of approximately one third of the island's more than 3000 burials. The results were extensive and to this day the material constitutes essential reference material for study of the Viking Age. The bulk of previous research on Birka was concerned either with the burials, particularly their grave-goods, or with the evidence for crafts and trade (for a compilation of previous research on Birka and trade see Hyenstrand 1991 and Gustin 2004 chap. 2). Fifty years after his excavations, Hjalmar Stolpe's results were published posthumously by Holger Arbman in what was to become the major catalogue of Viking Age artefacts – *Birka: Die Gräber, Text & Tafeln* (1940, 1943). Arbman conducted excavation work of his own on the island and initiated examination of the town rampart and the Garrison. Apart from a foresighted survey made by Gustaf Hallström in the 1920s, these were the first investigations that concerned the island's fortified structures (Hallström 1925). Hjalmar Stolpe had excavated a number of irregular small pits in the Garrison area in the late 19th century, but these excavations were not up to his usual high standards when compared to the burial excavations that really were before their time in method and documentation. His peephole trenches in the steep slope leading down from the hillfort to the water exposed a large skeletal material without grave burial context, which led Stolpe to designate the area a hypothetical 'place of cremations' (*begängelseplats*) (Stolpe 1877; Arbman 1939:62). Holger Arbman returned to the site in 1934 and laid out a long but narrow trench, stretching from the Viking Age waterfront to the summit of the Garrison slope. The term 'Garrison' was a direct consequence of the results of Arbman's excavations which displayed finds of predominantly martial character (Arbman 1939:62ff). Like his predecessor, Arbman never got around to publishing his results and apart from a marine-archaeological survey of the pile-works in the harbour outside the Black Earth performed in the 1970s, investigation of the fortifications on Birka lay in fallow until the 1990s.

With the aim of recognising the role of warfare and conflicts in the long-term development of societies, the project *Strongholds and Fortifications in Central Sweden AD 400–1100* was launched in 1999. War and conflicts are regarded as a societal phenomenon. Though war should not be understood as the major catalyst of development, there were times when warfare consti-

tuted its driving force (Olausson 2000:126f). Special attention was paid to the study of Later Iron Age and Viking Age fortifications and consequently the fortifications of Birka. It was hoped that this previously neglected area of research would increase our understanding of the 'Birka construct' and by a comprehensive approach to examining the defence structures, light might be shed on the military-political function and role of the trading post in a north-European perspective.

The results of the excavations and the ensuing studies exceeded all expectations. The advanced military structure visible at Birka is needless to say of vital importance in a discussion of Birka's warriors and their role and function. The project has shown that the fortifications were first erected at the same time as the trading post was founded and that a strong military presence was regarded as a prerequisite for the scale and character of activities carried out in Birka (Holmquist Olausson 2002; Hedenstierna-Jonson in print). As Lena Holmquist Olausson states "Birka's fortification is a demonstration of strength and an expression of power" (2002:165). The results from these investigations have been continuously reported in the project publication-series on *Birkas Befästning* and *Strongholds and Fortifications*. Apart from being published in a number of scientific papers, material from the excavations has been, and still is, analysed by students of the Archaeological Research Laboratory and presented in several MA-theses.

The Eastern connection

As stated, the material context of Birka's Garrison is an anomaly in the western sphere of Viking Age Europe, with closest parallels to be sought in the area of Ancient Rus'. The most prominent scholar in earlier studies into the connections between Scandinavia and Ancient Rus' during the Viking Age was Ture J. Arne. With an exhaustive paper in *Fornvännen* (the Journal of Swedish Antiquarian Research) in 1911, Arne introduced the theme of an oriental style and eastern influence in Scandinavian Viking Age material. This was to become the subject of his perhaps most renowned work, *La Suède et l'Orient*, in 1914. He recognised the influences as flowing in both directions, something rather new at a time when others were asserting the supremacy of the 'Swedes' in this expansion eastwards.

There are a number of difficulties concerning the material from Ancient Rus', which is in part the underlying reason that research on Scandinavia in connection with Ancient Rus' is confined to a relatively large degree to narratives of the Rus', their trade-routes, etc. The level of ignorance about the evidence is high as there are many barriers to cross, language being one. Much of the archaeological material is published in Russian and in publications that are difficult to gain access to. The language barrier can be forced, but this still leaves the problem of the availability of research results and differences in presentation of the evidence. The bulk of the archaeological material was excavated in the late 19th century, which often makes analysis of archaeological context difficult at best. Whereas in the West there is a tradition of photographic reproduction for finds, many Russian publications present drawings. Comparisons are thus rarely possible when it comes to detail. Exceptions to this are the late 19th century – early 20th century publications in the series *Materialy po Archeologija Rossija* (e.g. Brandenburg 1895; Sizov 1902). These folios display detailed photographic reproductions of archaeological finds from the excavations of e.g. Gnëzdovo, Smolensk and the region south of Ladoga, both of great interest when studying the Viking Age Scandinavian – Ancient Rus' connection. The excavations in the *MAR* publications were contemporary with Hjalmar Stolpe's investigations of Birka. The meticulous documentation and field notes kept by Stolpe were exceptional at this time, and for many of the Russian finds, context remains unfortunately quite vague.

On a general note, the material and ongoing research would benefit from a greater level of problematising. There is still a tendency to merely notice the many similarities and parallels between the Scandinavian and the Russian material, without going into the complexity of the find situation and its representativity. One should just keep in mind that these are very seldom new discoveries. A good deal of the newly published material concerning the Eastern trade route was already studied in the early 20th century and originally published then. Why is it that so much knowledge had disappeared into oblivion and why is it now reappearing? Much can be blamed on the Second World War and even more so the following decades of cold war closing borders and preventing exchange between researchers and others. There was also an old scholarly conflict that took new form during this period – the so-called Normanist/Anti-Normanist debate. Based on the question of what part the Northmen played in the formation of Ancient Rus', the key dispute was how the Varangian legend in the 12th century *Russian Primary Chronicle* should be interpreted. While emphasising the importance and accuracy of the Primary Chronicle, the fact that it determines the origin of the first ruler to be Varangian, constitutes a conflict of interests.

Without casting any doubt on the accuracy of the Chronicle, the circumstances surrounding this foreign ruler must be reinterpreted and then the problem becomes first and foremost a question of linguistics. On the other hand, the Normanists have used the Primary Chronicle uncritically to serve their own means in showing the importance of, in particular, Sweden's but also Scandinavia's role in European history.

Even if the dispute in recent years has exhibited greater diversity and more balanced argument, the controversy still thrives and in response to a newly published book, *Antinormanizm* (2003), a seminar was held at the Department of Archaeology at Stockholm University in 2004. In a short note reporting from this seminar, Elisabeth Löfstrand of the Department of Slavic Studies ventilates her worries: "Anti-Normanism is part of the phenomenon of nationalism and therefore a cause of worry when it seems sanctioned from above. I believe it can be used as a thermometer of nationalist movements. The temperature is rising" (Löfstrand 2004). The controversy has been related to different political movements during its 250 years on the agenda. The Normanist ideas have at times been an offspring of Western historicism and the Anti-Normanist arguments have been tools in the hands of Pan-Russian advocates. Be that as it may, a joint venture examining Scandinavian – Ancient Rus' contacts has yet to be undertaken.

A short note on Orientalism

Even if not directly connected to the Normanist/Anti-Normanist controversy, the topic of orientalism can be viewed in a similar light. The use of the term Oriental in western historiography has been as discriminating as the positioning on the origins of the Rus' – from both sides of that controversy. Or to cite the writer and debater Edward Said: "So saturated with meanings, so overdetermined by history, religion, and politics are labels like 'Arab' or 'muslim' as subdivisions of 'The Orient' that no one today can use them without some attention to the formidable polemical mediations that screen the objects, if they exist at all, that the labels designate" (Said 1985:93). This discussion is of great topicality today with the growing divides between the Arabic and the Western worlds. In using terminology like Oriental, Arab and Muslim, one must be aware of the complex and controversial overtones these terms bear with them. The political situation in the world today has further increased the need for clarification when dividing the world into an oriental and an occidental sphere (cf. Asad 1980; Abdel-Malek 1988; Kahle 2006). In a study where topics of culture, ethnicity and identity are discussed and oriental is used in connection with stylistic and cultural expression, a comment is rightfully required.

The stylistic term Oriental as used in this work was established during the period of Imperialism specially noted and criticised by Said. It should be acknowledged that ‘oriental’ in this stylistic context is complex, embodying traits from various cultures. It corresponds to late 19th century – early 20th century European perception of what was characteristic of the cultures of the geographical area then called the Orient. But as I hope to show in this study, it also represents an interpretation of what 10th century man perceived as ‘oriental’, possibly in the same manner as his much later successors.

Literary sources

An important complement to the archaeological material, when approaching the question of warfare and martial society in the Early Middle Ages, are of course the written sources. Though communicated with aims other than to provide detailed accounts of what we today call reality, these accounts still give valuable insight into contemporary conceptions of warfare (cf. Halsall 2003, chap. 1).

Scandinavian Viking-Age written sources are virtually non-existent. The saga-material and the Eddaic verse are tainted by the Christian views of later periods and the more or less contemporary runic inscriptions are brief and formalistic. To read contemporary accounts of Northmen, one has to turn to the sources from others – often opponents or victims of Viking warfare and raiding. Still, many contemporary sources provide valuable information on general questions that concern people from the North as well as Franks, Normans, Anglo-Saxons, etc. Among these, some sources in particular should be mentioned such as the *Anglo-Saxon Chronicles* and the *Royal Frankish Annals*. A rare eyewitness account of actual battle, is given by *Nithard* in his *Histories*, written in the 840s (cf. Nelson 1989). The 9th century *Annals of St. Bertin* provides the first mention of the Rus’, identifying them as East Scandinavians (Svear). Another important source of information, sometimes directly concerned with Northmen in the form of the Rus’, is to be found in Islamic texts. Apart from the well-known eyewitness account of *Ibn Fadlan*, the bulk of the Islamic texts are seldom referred to in Scandinavian studies. Interesting accounts of the Rus’ can be read in the works of e.g. *Ibn Rusta*, *Al-Masudi* and *Ibn Hurdadbih*, all of which the Norwegian scholar Harris Birkeland made accessible to a Scandinavian public in his publication on the history of medieval Scandinavia (*Norden*) in Islamic sources (1954). Other informative sources are the works of two Persian geographers, the late 10th century *Hudud al-‘Alam* (The Regions of the World) and the 11th century account of *Gardizi*. Descriptions of the Rus’ are even included in Byzantine texts, displaying both positive and nega-

tive experiences. Emperor Constantine Porphyrogenitus's *De administrando Imperio*, compiled c. 950 recounts Rus' engagement in trade as well as in military campaigning. The primary source on the emergence of Ancient Rus' is the *Russian Primary Chronicle* written in the 11th century by the monk Nestor. One should however bear in mind that the accounts of the Rus' in the Primary Chronicle constitute the core of the Normanist-dispute, and like all contemporary written sources, should be cited with caution.

In the present study I have used these texts in a somewhat indulgent way, hoping that they will effuse some life into the conclusions made, rather than to prove a point or in support of a statement. Nonetheless I have tried to cite texts that are considered generally to have credibility.

2. WEAPONS, WARFARE AND CULTURAL EXPRESSION

The theoretical framework of this thesis rests on the supposition that the impact of warfare and martial life had great significance for the structure and organisation of early medieval society. But the study of archaeological material associated with the martial sphere of life during the Viking Age naturally has its limitations. Over the last decades various contributions have been made to the discourse on the social interpretation of weapons in graves, even going as far as to question the feasibility of deducing anything at all concerning military organisation, etc., from the evidence in graves. At the same time the importance impact of martial affairs on early medieval society and the limited material and methods available for its study, makes this topic all the more necessary research, albeit always mindful of the limitations the inferences hold (cf. Härke 1997).

THE PACIFIED PAST

There has been a deafening silence on the subject of warfare in Swedish post-World War II historiography; a silence felt in most research and scholarly discussion. Lawrence Keeley has termed this phenomenon the 'Pacified Past'. Post-war studies have according to Keeley been reluctant to acknowledge prehistoric violence, a reluctance that has reached 'epidemic' proportions (Keeley 1996). Another misconception probably related to post-war trauma is the notion that to even study warfare and violence is to glorify the subject (cf. Halsall 2003:10). There have been many conceptions and misconceptions on the importance of studying subjects related to war and warfare. With newfound interest developing in the second half of the 1990s, various research projects were launched such as the Danish interdisciplinary research project *Civilization and War*, part of the National Research Council for the Humanities thematic programme *Cultural Heritage and Historical Change*. An extensive number of books have also been published, many of which approach the subject of war with great caution, by way of an anthropological study of human inter-personal violence. A fore-

runner in this genre, was military historian John Keegan, who in 1993 published *A History of Warfare*. Keegan's focus is on the *study* of warfare rather than warfare itself. Another important publication is the proceedings from a conference on 'Ancient Warfare' held in Durham, England in 1996. The publication of the same name presents a number of contributions, spanning human palaeoecology, anthropology and archaeology, from the Neolithic to the Iron Age (Carman & Harding (eds.) 1999). This publication in many ways marks the revival of scholarly discussion of the topic, and several of the contributions are often cited in later works. In 1996 another conference took place that also constituted a turning point, now with focus on Scandinavian society. The proceedings from this conference *Military Aspects of Scandinavian Society in a European Perspective AD 1–1300*, have become somewhat of '*Stand der Forschung*' in the studies of Scandinavian Iron Age and early medieval warfare (Nørgård Jørgensen & Clausen (eds.) 1997).

Any compilation of important works on warfare must include *On War* by Carl von Clausewitz. Though written during the first part of the 19th century, *On War* offers a unique study of war in its entirety and is continuously referred to in writings on military history. When dealing with early medieval west-European warfare, the works by historians Karl Leyser (1982; 1994), Timothy Reuter (1985; 1997) and Janet Nelson (1989; 1998) stand out for their balanced insights and interpretations into the early medieval world and its attitudes towards warfare. In my study, I have also benefited particularly from the works by Guy Halsall (1989; 1992; 1998; 2003). Halsall's *Warfare and Society in the Barbarian West* (2003) constitutes a decidedly knowledgeable interpretation of both historical and archaeological evidence on the topic and provides highly enjoyable reading as well. In this context I would also like to mention the readable anthologies *Medieval Warfare* (1999) edited by Maurice Keen and *The Routledge Companion to Medieval Warfare* (2004) edited by Jim Bradbury.

Even weaponry has been subjected to this pacification with weapons being regarded as symbols of different social identities and roles, rather than as functional tools made for actual use. In the anthology *Companion to Medieval Arms and Armour* (2002) edited by David Nicolle, several interesting in-depth case studies provide a much-needed alternative approach to research in this field. No doubt the symbolic character of weapons was of great importance, but to regard them only as symbols is to reduce them to an incorrect and anachronistic ornament. Equating the symbolic meaning of the sword during the Middle Ages with the ceremonial use of swords in modern times, is not relevant. To quote Halsall, this converts the sword into "archaic hangovers" instead of "potent demonstrations of contemporary

military power and authority” (1998:3). Even so, this *non sequitur* is repeatedly carried out by archaeologists, possibly with the desire to so to say ‘take the edge off’ the sword. The interpretation of the sword as a symbol of political and ritual power has also been taken into question, arguing that it should be regarded merely as an item of dress, comparable to a necklace and belt buckle, or even a modern-day tie (Thedéen 2005:395). This pattern can be recognised from other fields of archaeological discourse, especially with regard to hillforts. There has been a reluctance to recognise the martial aspects of these sites and they are suggested to have been fortified in a social rather than martial respect (Monié Nordin 2005; criticised by Fritz 2006; on the martial aspects of hillforts see Olausson 1995).

When the research project *Strongholds and Fortifications in Central Sweden AD 400–1100* – of which the present thesis is one result – started in 1999, it was met with a significant amount of scepticism. A common remark was that the study of war and warriors was biased, leaving out women and children, and by default not considering the sufferings and terrors of war. The impact of war on history was questioned. Nevertheless ‘warfare *was* important’. In fact warfare was probably the most important affair of the political elite in early medieval times (cf. Olausson 2000:126; Halsall 2003:38). Societies were in many ways rooted in warfare and the warrior mentality or warrior ideology saturated ideals, morals and actions, leaving no part of society untouched by the concept of war. In order to understand Scandinavian Viking Age society it is my thorough belief that the theme of violence and warfare must be treated as one of its most important characteristics. We need to face the facts of war or our knowledge of the early medieval Scandinavians will be biased.

MILITARISED SOCIETY

Militarised society is not the same as society involved in warfare. It is rather a societal structure based on a number of prerequisites all following the theme of making no distinction between martial and civilian life. Edward James has stipulated the following definition of the term militarised society, highly relevant in this context (1997:19). In a militarised society all free men had the right to carry weapons, and warfare and weaponry was prominent both in official and private life. To wage war and to participate in the military following was expected of men from certain levels in society (usually the aristocracy), and the youth was trained in warfare. The warrior’s image in society, as well as the warrior’s own self-image, are important aspects of the warrior culture. In the light of what was to come, with knights and nobles

setting ethical and moral example even for civilians, it is clear that the role of the warrior was not restricted to warfare alone. In a society of this kind, warlike and heroic virtues were glorified and constituted the foundation of moral values in all aspects of life. Thus permeating everyday life, warfare concerned not only men, but women and children, young and old. However much they were a part of society and subordinate to its norms and values, women rarely took part in actual combat. “While war may be everyone’s business, it has usually been men’s work” (Keeley 1996:35). At the same time, the women actively upheld the structure of martial society by instigating conflicts, enforcing their men to take vengeance in defence of honour, and by upholding the memory of the fallen by acting as mourners (on women as mourners and upholding grief see further Sävborg 1997 chap. 6; the mythological female warrior is discussed by Näsström 2006, chap. 8). A unique insight into the female side of martial society is given by Dhouda in her highly readable handbook written to her son William in the years AD 841–843. “*From the beginning of this book to the end, both in form and in content /---/ - know that everything, through it all, in it all, is intended entirely for you, for the health of your soul and body. /---/ I wish you to hold it, turn its pages and read it, so that you may fulfil it in worthy action. For this little model-book, called a handbook, is a lesson from me and a task for you*” (Dhouda, Engl. transl. C. Neel. 1991:2). In her accounts on social order, moral life and secular success, etc., Dhouda outlines the role of women in the martial society of the Carolingians during the 9th century. The Frankish aristocratic culture of which Dhouda was a part, has been characterised as a warrior culture that was the motor behind the success of Carolingian rule (Le Jan 2000:282). Young Frankish nobles like William received an education that was essentially military, where military apprenticeship began early and weapons were handed to boys at a very young age.

These characteristics of typical militarised societies apply to the Germanic peoples and Northern societies both in the West and East. The Islamic writer Ibn Rusta recounts that when a son is born among the Rus’, the father “takes a drawn sword to the newborn child and places it between his hands and says to him, I shall bequeath to you no wealth and you will have nothing except what you gain for yourself by this sword” (Ibn Rusta, transl. by Birkeland 1954:16; cf. Franklin & Shepard 1996: 40, 46).

The Retinue system – and the mercenary

A common trait of Germanic societies during the Later Iron Age was the social structure of loosely knit and autonomous groups held together by reciprocal relationships, labelled ‘patronage’ by most anthropologists. One of the most significant of these reciprocal relationships was that of the retinue (*Gefolgschaft*). The German scholar Walter Schlesinger has defined the term *Gefolgschaft* as a “relationship which is entered voluntarily, based on loyalty and which obliges the man to counsel and (military) aid, the lord to protection and generosity” (Schlesinger 1953:235, transl. Bazelmans 1999:4). Though the moral and ethical aspects of Schlesinger’s definition have been debated, the structure of this formalised long-term reciprocal relationship and the importance of the phenomenon, have been acknowledged by several scholars. The basis for recruitment went outside the kinship and ethnic group, and made it into a ground-breaking organisational structure (Bazelmans 1999:4f, with references).

It was expected for a Viking Age ruler to have a personal military following in permanent attendance – a *hird*. The *hird* did not only have military significance, it also fulfilled important representational and protective functions. Most likely participation was typical for a certain stage in life. The retainers or *hirdmen* were mostly young men “earning their keep and their reputations before settling down” (Reuter 1997:32f). Characteristic of such warriors was the way in which they were rewarded by regular gifts of mobile wealth. The retainer was bound by his oath to follow his lord into battle, to hand over booty taken in war, and to avenge the death of his lord if required. In return for gifts, hospitality and protection, the king or “sustainer of the warriors” expected and received pledges of loyalty and service from his retainers. This fits well with the concept of *drengr* defined by Judith Jesch as “the follower who fights by the side of his leader in battle, and who is richly rewarded in turn”. Jesch also states that ‘drengr’ most likely was the term used by the ‘Vikings’ when wishing to refer to themselves (Jesch 2001:216, 219; cf. Olausson 2000:135f).

In Ancient Rus’ the equivalent of the retinue was the *Druzhina*, possibly rooted in the Scandinavian system. Here the retinue culture was a prerequisite for the ruling elite, which did not form a part of the established tribal elites and hierarchies (Melnikova 1996). David Nicolle claims that loyalty was viewed differently in the *Druzhina* culture, as a member could withdraw whenever he wished without disgrace (1999:22). As long as the contract between a lord and his retainer was annulled according to the rules, there was no conflict of loyalties. The situation for the northern retainer, as also the Anglo-Saxon, etc., was probably a bit more complex (cf. Abels 1988; Reuter 1997; Bazelmans 1999). As a part of the *hird*, the retainer became

part of his lord's household and thus family, to which the participants had sworn allegiance at youth. When they reached a position in life that enabled them to settle down, start a family, etc., the retainers or hirdmen had permission to withdraw from the hird. They could at this stage even build a military following or hird of their own, if they had the means to do so. Others never left the hird. They continued to serve and partake in the hird, whether good or bad, for the rest of their lives. This means that the age-span in the hird was wider than might be expected, since even older men would have been active in a military following (cf. the account of the 12th century knight William Marshall who was considered a youth until he married in his mid forties (Duby 1985)).

In this context it is of interest to make a distinction between the retainer and the mercenary. A general division is usually made between the oath of allegiance pledged by the retainer, that could be valid for life, and the relative freedom of the mercenary (cf. Bazelmans 1999:111f). The significant increase in the use of mercenaries apparent with the appearance of the Viking Age, calls however for a broader definition of the term, as these were warriors who usually served as a group under the command of their military leader, making them something in between mercenaries and allies (cf. Halsall 2003:113). Timothy Reuter's much wider definition is perhaps more applicable to the itinerant groups of campaigning Northmen. Reuter observes that the only difference between retainer and mercenary was that the retainer might well be, socially speaking, a part of the political community in which they served (Reuter 1997:33).

The Impact of martial society – the honourable warrior

Concepts of duty, loyalty, shame and guilt can act as strong motivators and drivers when waging war. These concepts are all closely related to what was perceived as honourable. In a culture where vengeance and feud are central themes, every individual is preoccupied with the concept of honour. The military historian Doyne Dawson (1996) comes to the following conclusion when discussing martial values in primitive as opposed to modern warfare: "In an extremely warlike culture, martial honour and glory are normally the only means by which men can acquire prestige among their fellows" (Dawson 1996:16). When considering the extreme situation of the Greek Hoplites during Antiquity, the social impact of martial society becomes very clear. Even though the excruciating type of warfare they engaged in was not in accord with prevailing heroic ideals, the Hoplites formed a strong martial society based on their shared experiences and their total dependency on each other in the close-knit warfare technique of the phalanx. As a means to

strengthen this cultural cohesion, the commemoration of the fallen warrior was a central theme. The heroic fallen fighter would gain eternal praise and devotion, but there was also eternal shame and guilt tainting those who failed or behaved in a cowardly manner (Runciman 1998:738ff).

On the same note but in the context of Anglo-Saxon England, Richard Underwood concludes that fighting techniques including tightly packed shield-walls would have strong moral, rather than physical, implications for the warrior group. The strength of the shield-wall and consequently the possibility of success, depended on the motivation of the warriors to keep a tight formation during battle and to keep advancing through the lines while others fell. “They risk death only because the alternative is worse, the complete loss of status within their small social group from being branded a coward” (Underwood 1999:134).

The creation of the warrior ideal as presented in the saga-literature, and even to some extent on the rune stones, strongly suggests that the Scandinavian warriors were governed by rules of conduct and moral codes which in turn imply concepts of honour. According to Judith Jesch (2001; in print), the warrior ideal was created to encourage and train the warrior collective and in defining different aspects of this ideal she succeeds in shedding some light on the highly interesting and difficult topic of honour and bravery in Viking Age warfare. In emphasising the importance of group cohesion in battle, and the consequences of the action of a single warrior, Jesch notes that men are regularly praised for not fleeing. Accounts on the rune stones like “*he fled not*” and “*he fought while he had a weapon*” and at the other end of the scale: “*he lost his life because his companions fled*”, provide insights into the qualities which were valued and honoured in battle. One praised act of bravery that brought honour was “feeding the beasts of battle”, i.e. killing the enemy. The Upplandic Gripsholm rune stone commemorates a group of warriors, stating that “*they travelled in a dreng-like fashion, far for gold, and in the east gave the eagle (food), died in the south, in Serkland*” (Jesch 2001:242ff; Jesch in print). As opposed to what not to do, this was an active act of bravery but even as such, there were most likely rules even when it came to killing. It did not suffice to merely kill a person; who the enemy were and the manner in which they were slain probably played a decisive role in determining whether the act was perceived as honourable (cf. Keeley 1996:61). If violence of a warlike kind did not qualify as battle, it was probably seen as dishonourable. Skirmishes, ambushes, riots and massacres belong among the events considered as such: notably these are all typical forms of ‘Viking’ warfare (Carman 1999:42; Halsall 2003:151).

Evidently there was a concept of honour among the northern warriors themselves (cf. Olausson 2000), something which the Continental source-material gives a totally different account of. That the afflicted might elaborate on the savagery of their attackers is only natural, but does this account for all the 'bad press' the Northerners received abroad? The descriptions concerning northern warriors and their conduct in battle found in contemporary sources are thus almost always the products of their opponents in battle. These accounts of fierce and ruthless warriors behaving in strange and frightening ways are not to be taken literally. Compared to the accounts of other warrior-groups in the same sources, many similarities in the way they are described are apparent, since the accounts probably all shared the same aim of alienating the foreign warrior. As noted above, there would be severe difficulties in mixing warrior groups from different cultures when in the line of battle. Trust, and an understanding of tactics and method, were vital for the success of the troops. To some extent this also applied to evaluation of the enemy. Playing by mutually accepted rules, could have been seen as a prerequisite for fair and honourable war. The rules of correct warfare were strict, as the violence of battle took the form of institutionalised combat (Nicolle 1999:14; Carman 1999:42). These rules had to be followed, otherwise the participants lost rather than gained, in prestige (Jones 1980:98). The rules of war might produce problems when groups of warriors from different cultural realms met in combat. "The lack of shared or mutually recognised norms of behaviour could produce dramatic results" (Halsall 2003:143). Though there are no reasons to doubt that the warriors from the North had firmly established rules of war, they seem to have adopted ones that were slightly different to those of their Continental opponents. A firmly rooted martial society such as that of these northern warriors most likely displayed clear codes of behaviour in everyday life as well as in battle. These codes, rules, were probably related to religious beliefs and rituals. One must not forget that during most of the Viking Age, in contrast to Western Europe in general, Scandinavia was not such a divergence in values could well have influenced 'Viking' warfare in general and the motivation to fight in particular. Possibly these differences are reflected in the use of the above-mentioned expression: 'feeding the beast of battle'. Jesch has highlighted a decisive disparity in how this concept was used in Old English and Eddaic poetry, compared to its use in scaldic verse (2001:247ff; 2002; in print). Whereas the former "emphasises the fear and distaste [of killing], /---/ the upbeat tone of scaldic verse reflects the training of warriors to suppress these feelings of fear and distaste, in order to become effective" (Jesch in print p7). Thus the concepts of war held by the Scandinavian pagan warrior and the Christian warrior on the Continent differed slightly. At the same

time the Scandinavian warriors probably were aware of and understood the rules of Christian warfare, but were not bound by them. Instead they could use them to their advantage, which may have been one of the keys to Viking success. To use forbidden stratagems and still hold onto your honour, appears to be a win-win situation. The rules of war can become the strength of those who do not follow them (cf. Halsall 1992; 1998:11f).

Warfare

Iron Age warfare is said to have been endemic and characterised by the relation between the leader and his military following. Endemic warfare was low intensive with emphasis on ritual and display; raiding and skirmishing were the dominant tactics. Waging war was a means of procuring loot and was the mainstay of early medieval politics (cf. Olausson 2000:140). Endemic warfare had a strong impact on society, with a constant presence of warfare, and young men were prepared for life by their warrior training. The Early Middle Ages marks the coming of something new in warfare and battle technique. New developments in arms and armour together with the extended use of horses in warfare, such as the introduction of the cavalry chock indicate a change both in warring technique and in society in general. Raiding and skirmishing were still the primary aspects of warfare and the graves show a use of weapons and horses as indicators of rank and status rather than suggestive of a warrior profession. But there is also something new: a more institutionalised form of warfare, incorporating new social structures and new categories of warriors and warfare organised on a larger scale. Michael Olausson stresses the importance of the relationship between chieftain and hird and between king and retainer when trying to understand the political/military changes taking place during the Later Iron Age and early medieval period (Olausson 2000:127). Halsall has discussed a similar change in the level of warfare in Anglo-Saxon England (1998). He associates it with the period of state formation when royal initiative grew stronger. The early English kings seem to have tried to limit the practices of feud and endemic warfare, even if eradication of these forms of violence was impossible and probably not desired: for a king they could be very useful both socially and politically. These limitations led to fundamental changes in warfare (Halsall 1998:167).

Early medieval warfare was conducted through set-piece battle rather than through siege. It incorporated the lining-up of warriors, psychological trials of strength, and eventually the clashing of arms. There was strength in the experience of the leader as well as of the warriors. Endurance and self-control were vital traits and success lay in keeping the battle-line. As long as close formation was maintained, the wall of shields facing the opponent would be almost impossible to break through. Breaking up the battle-line, whether due to fervour, rushing forth to meet the enemy, or uncontrolled flight, meant the same result: defeat would inevitably follow.

“Now the battle began, and the English horsemen rode down upon the Norwegians. They met hard resistance, for it was not easy for the English to ride down upon the Norwegians because of [the volley of] shots, so they rode in a circle around them. At first it was a fight at close quarters while the Norwegians held their order of battle. The English rode upon them fiercely, but retired when they could do nothing against them. But when the Norwegians saw what they conceived to be feeble attacks, they attacked in their turn and wished to pursue them; but when in so doing they broke up their shield castle, then the English rode down upon them from all sides with spear thrusts and arrow shots” (Snorri Sturluson *Heimskringla*, saga of Harald Sigurtharson chap. 92. Engl. transl .Hollander 1964).



Figure 3. War scene from the Bayeux tapestry showing English warriors in a tightly packed shieldwall. Please note the standard-bearer second from the front (drawing by K. R. Dixon, Underwood1999:128, fig. 72).

This 13th century version of the battle of Stamford Bridge (1066) gives a good picture of early medieval battle tactics when Norwegian King Harald Sigurtharson the Hard Ruler waged war on King Harold Godwinson of England. Tricking the opponents into breaking up their battle-line was a well-known tactic often used by the Northern warriors themselves, though this time it was turned against them. At Stamford Bridge the consequences were fatal for the Norwegian army as their king, filled with the rage of war, ran out in front of the scattered line, and while fighting fiercely without armour he was shot in the throat by an arrow.

By contrast with the common view that 'Viking' warriors were merely unorganised savage troublemakers, the evidence suggests these warriors were in fact exceedingly skilled in the tactics and strategies of set-piece battle. In contrast to vicious raiding (which also took place), campaigns were more usual and this was something they were exceptionally good at, or to cite Halsall: "particularly strategically adept /---/ with large agglomerations of warriors, kept in the field for years on end" (2003:154ff). This long-term campaigning strengthened their teamwork and encouraged close cooperation in the field. Another special trait of the Northern forces was their loose-knit and fluid structure. Different groups of warriors, each with their own leaders, would join forces during campaigns. Particular warriors acted as leaders and this short-term cooperation ended when the campaign or season was over, or when each agreed to go their separate ways (cf. Halsall 2003:113). This type of organisation must have contributed to the high mobility of the Northmen, an absolute strength in long-term campaigning, as it must have made logistics much simpler. Their common descent provided a basis for trust, which was essential for the type of warfare waged. The smaller units of experienced warriors seemed to be quite adaptive to new forms of weaponry as well as fighting techniques. This provided an advantage when fighting on different borders with different martial cultures.

The question of why?

I do not in any way aspire to answer the question of why war was waged and battles fought. Still there can be great interest in posing the question, even if it is merely to discuss different aspects of warfare and the motives behind warfare. The answer may lie in the statement on war presented by anthropologist Lawrence Keeley – no peaceful endeavour can equal its penalties for failure, and few can exceed its rewards for success (1996:3).

Perhaps the most obvious reason to wage war was gain: "to the victors go the spoils". When it came to the political economy, warfare was vital. Victory brought plunder that in turn could be distributed amongst the participants. As the participants in this kind of warfare were gathered from the highest levels of society, the distribution of plunder had political dimen-

sions. Warfare was a means of maintaining the social equilibrium. Peace was not always desired as it could well disturb the fragile balance. “An absence of warfare could cause considerable stress” (Halsall 2003:38). The acquisition and distribution of wealth for maintaining extensive power, required continuous plunder and tribute-collection. Tribute was institutionalised plunder, and as such provided a more regular income, although plundering remained no less important. Tribute was, to use historian Timothy Reuter’s words, the “gilt-edged income of the Franks from warfare” (Reuter 1985: - 76). Kings were seen as providers of opportunities for plunder rather than as distributors of loot (Reuter 1985:79). Professional warriors were paid by having their basic needs supplied, supplemented by rewards for their actions (*cf.* Blöndal 1978:27f). Their basic needs included food and lodging, and also arms and horses; their rewards consisted of luxury goods obtained by tribute and plunder. Warfare and campaigning also provided young men with opportunities to advance. Military prowess and success in battle formed an important base for further advancement in society and could in the end be a means of reaching the very top – i.e. becoming the chieftain. Warfare also functioned as a marker of social identity. When raising an army for an offensive war, the participants were selected from particular social groups. “Warfare presented opportunities for social and political advancement. It enabled the reaffirming of ties of friendship and of dependence that bound early medieval society” (Halsall 2003:35, 134).

EXPRESSING CULTURE AND IDENTITY

Martial culture is by tradition rich in symbols. Military organisation, affiliation and ranking systems, require particular but easily comprehended symbols able to be read and understood both by those inside the group and those on the outside. The contrast in the Garrison material between plain general equipment and a few homogeneously decorated items, points to the use of warrior-related symbols even in this Viking Age context. In papers II, III, IV and V, different types of symbols and aspects of style are studied and related to the Birka warrior. There is one motif in particular that is considered as the particular symbol of the Birka warrior – a stylised bird-of-prey referred to as the diving falcon (Strömberg 1951; Ambrosiani 2001; Edberg 2001; Lindberger 2001; Hedenstierna-Jonson in print). The distribution of chapes of this type, presented in paper III, stretches from Bretagne over to the Ukraine, which might well be interpreted as the geographical area in which these warriors were active.

Even other objects display representations that could be interpreted as symbols, thereby questioning the nature of the significance of symbols in the martial society of Birka. An elaborate symbolic language expressing symbols of rank and offices requires a number of things from the society in which the symbols are used. It must be capable of formulating and guaranteeing a uniform system and controlled manufacture; implementing a social control that ensured that only the right people used this symbols. This organised society, on a larger scale, would also been able to spread their system and its symbols throughout the region over which that society's power and/or interest was deemed to extend. In other words, symbols of this kind were expressions of complex societies and the deliberate use of special materials, objects and symbols has in this context been defined as 'great styles' (Earle 1990; cf. Hedenstierna-Jonson 2002:110). A parallel development, taking place at this time, was the uniform naming of places (Brink 1996; 1997). Together, these two developments indicate a centralised power-structure which was able not only to create an administrative and military organisation but also maintain and increase that organisation over a constantly expanding geographical area (Hedenstierna-Jonson 2002).

Defining style

Style and stylistic expression constitute a vital aspect of the manifestation of material culture. Defining style in archaeology is a multifaceted matter and much of the scholarly discussion has dealt with styles that are simple in design and presentation. There is a constitutional difference between linear patterns on a ceramic vessel and the complex symbolic composition of a Renaissance painting. Even if the latter does not qualify as an archaeological matter, many of the motifs and patterns on archaeological artefacts are almost as intricate and ambiguous in composition. Studies on style and theories about what style is and what style signifies, have formed an important part of the archaeological discourse both past and present. Despite this lively debate there is, according to anthropologist Michelle Hegmon, an agreement between archaeologists on two basic tenets: *that style is a way of doing something and that it involves a choice* (cf. Hegmon 1992:517f). This is also the common ground as well as starting point for disagreement. If we compare two scholars involved in recent disputes over style, this discrepancy becomes more explicit. James Sackett contends that style involves a choice between functionally equivalent alternatives and that style bears particularly on time-space systematics. An artefact may be regarded in terms of its diagnostic value for specifying a particular historical context. It has 'symptomatic' qualities in its precise form and design that can tell us about

its 'space-time locus' (Sackett 1977:370). Style resides in the learned or socially transmitted choices between variants that are equivalent in use. Sackett calls the result of such choices 'isochrestic variation' (Sackett 1985:72f; cf. Hegmon 1992:522). Sackett contrasts his *isobrestic* approach to Wiesse-ner's *iconological*. Polly Wiessner, whose polemic against Sackett is well known, asserts that the communicative function of style is fundamental (Wiessner 1983; 1985). The discussion of style as a means of communication was introduced by Martin Wobst in 1977. With the so-called information-exchange theory, Wobst nevertheless restricted the level of communication and specified that "only simple invariable and recurrent messages will normally be transmitted stylistically" (Wobst 1977:323). Wiessner draws on Wobst but expands his reasoning and argues that "style transmits information about personal and social identity" (Hegemon 1992:523). The standard definitions of the concepts 'iconography' and 'iconology' derive from the work of art historian Erwin Panofsky. In *Studies in Iconology*, Panofsky distinguishes three levels of meaning: natural, conventional and intrinsic, defining them as pre-iconographical, iconographical and iconological. Panofsky regards the former two as belonging to the descriptive process, while the latter constitutes the matter of synthesis (Panofsky 1939:14).

Iconography and iconology in archaeology

Iconological study of prehistoric material is a rediscovered field of research. The 'software' of style and stylistic interpretation was considered unscientific during the age of New Archaeology and out of date in the theorizing Post-Processual era that followed. The study of typical Northern ornamentation and design was initiated by the great names in archaeology in the late 19th and early 20th centuries (Müller 1880; Salin 1904; Shetelig 1917-1927), but style was then seen primarily as a means of chronological determining artefacts. Defining stylistic traits and dating different styles were the main aims of virtually all stylistic research until the 1990s. A forerunner in the field of archaeological iconographical research is Karl Hauck, whose studies on Migration period bracteates had already begun in the 1970s (e.g. Hauck 1970). In the 1990s an interest in iconography and iconology on archaeological material grew, and several papers were published on the interpretation of the ambiguous imagery of the Migration period (cf. Kristoffersen 1992; 1995; Magnus 1995; Hedenstierna-Jonson 1996; 1998). Style became an important parameter in Karen Høilund Nielsen's study *Centrum og periferi*, in which she showed how stylistic traits have diagnostic value when interpreting territories based on patterns of distribution (1991). This area of research is still relatively small but recent studies include interesting theories on the interpretation of Germanic styles in a martial context. For example,

Maria Domeij relates the interlace and knot-work of the designs to the meter of the scaldic verses and the paraphrasing of war and weapons by using words like binding (Domeij 2004; 2005). Tania Dickinson presents an interpretation of Migration period imagery on Anglo-Saxon shields deducing the presence of apotropaic qualities, constituting a parallel to the line of argument that I bring forward in paper V on the apotropaic qualities of the Borre style (Dickinson 2005). The aim of paper V – Borre in the material culture of the Birka warrior – is to propose a reading of the basic stylistic traits of the Borre style and thereby explain the ambiguous use of this style in the martial context. However the material in the present thesis has generally been subjected to the first two levels of Panofsky's process – it is described, identified and set in context.

The issue of identity

The concept of identity, including ethnicity, culture, gender, etc., have been defined and redefined a number of times since New Archaeology entered the stage in the 1960s. Needless to say terms like culture, ethnicity and identity constitute complex concepts with ambiguous meaning dependant on the context, discipline and scholar using the term. Material culture constitutes explicit symbols when expressing identity, but the defining role of material culture in ethnicity has been questioned. Citing Heinrich Härke, “ [everybody now] agrees with the concept of ‘active’ material culture but, at the same time, almost everybody is fashionably uneasy with the idea that it might actively signal ethnic identity” (Härke 2004:454; *cf.* Härke 1998 and the related discussion cited there). However I would like to maintain that material culture in a very apt way reflects groups of people (ethnic, cultural, political etc.) and their intercommunication with others. Trying to avoid the many pitfalls of the concept of identity, and probably ending up falling into the most obvious ones in the effort, I have tried to use the terminology and definitions given by Fredrik Barth (1969; 1969b), Thomas Hylland Eriksen (1995; 1996) and Siân Jones (1996; 1997). Considered to belong to the so-called subjectivists in ethnology, they all support the idea that ethnicity involves active processes of performance and interpretation in the objectification of cultural differences. As Barth stated in his oft-cited work from 1969, ethnicity consists of the subject boundaries created by the group (Barth 1969:15). In Jones' definition of ethnicity *vis à vis* culture, an ethnic group is any group of people who set themselves apart and/or are set apart from others with whom they interact or co-exist with on the basis of their perceptions of cultural differentiation and/or common descent (1997).

Edward Schortman notes that there is an archaeological use of what he calls ‘salient identities’ when studying patterns of distribution. Salient identities are the affiliations or sets of affiliations that are used more commonly than others and which render their members a strong feeling of common purpose and support (1989:54). Schortman presupposes that social identities must have an overt symbolic expression which enables us to recognize them in the distribution patterns of these symbols. He emphasizes that salient affiliations cannot alone explain the distribution of material patterns but that the salient-identity concept, by itself, raises important questions and helps to specify important new research directions (Schortman 1989:59).

DIFFERENCES IN EXPRESSION – THE GARRISON IN CONTRAST TO THE GRAVES

The study of weapon burials and the conclusions made with regard to military technique, equipment and martial society in general, usually rests upon the assumption that “weapons in graves reflect with sufficient accuracy the armament of the living”, which, in view of the often quite puzzling combination of weapons found in graves, hardly seems to be the case (Härke 1997:93, 94). The question of what the weapons in graves actually express, is problematic and much debated and a part of an ongoing discussion on the correct analysis and social interpretation of burials (cf. Steuer 1982 and Härke 2000 with references, providing a general overview of previous research in this field). Nevertheless the artefacts provided by burials constitute an extensive and important part of the archaeological material and require contexting. Heiko Steuer ignited the discourse in the late 1970s when he questioned the relevance of interpreting weapon-burials in terms of societal structure (1968). Steuer later became even more sceptical to the social implications of burials alone and promoted studies integrating the material from settlements and burials (1982). Influential work, following in Steuer’s wake, include Heinrich Härke’s *Angelsächsische Waffengräber des 5. bis 7. Jahrhunderts*, (1992), and Lars Jørgensen’s paper in *Acta Archaeologica* where he applies systematic grave analyses to Scandinavian archaeological material in order to discern family burial practices and inheritance systems (1987). Later, Anne Nørgård Jørgensen’s systematic transregional comparison of grave material *Waffen und Gräber* aimed to establish the level of martial organisation during the Scandinavian Iron Age (1999). However, and as shown by others including Härke, the weapon sets in burials are generally not the result of functional considerations and should be assessed with great caution when determining fighting technique, battle order or complete

weapons systems (Härke 1989; 1997). Instead they might, as e.g. Anne Pedersen has shown, be interpreted as the prerogatives of specific groups of men and possibly as symbols of office, status and rank (Pedersen 1997). In other words, the weaponry in a burial has a representational function.

Representation and consequence

When comparing the archaeological material from Birka's Garrison with that of Birka's graves, the discrepancies between theory and reality become clear. The weapons are mainly plain and functional, without ornament or inlays. There is a marked absence of what could be characterised as 'parade' weapons. Still, as Halsall notes, it is not really possible to divide weapons of this period into 'practical' and 'parade' weapons. Their use on the battlefield had as much to do with physical harm as with weakening morale and frightening the enemy (2003:175). The most significant difference is in the composition of weapons and weapon-types, which seem to some extent to be standardised, yet at the same time show a greater variety of types than might perhaps be expected. An illustrative example can be studied in the composition of arrowheads according to the functional typology proposed by Erik Wegraeus (1971; 1973; 1986). Whereas the arrows from the graves almost exclusively have heads of the 'battle' type, the Garrison displays arrowheads suitable for both hunting and fighting (cf. Lundström 2006).

While the weapons emphasise the practical side of things, the evidence of dress points to the opposite. The many disparate bronze mounts and dress fittings discussed in paper IV recall the elaborate dress of Eastern type, with caftan-like coats, composite belts, and Magyar sabretaches. Dress of this sort has been found in the wealthiest burials in Birka and those of chamber-grave type. Another disparate feature is the evidence of protective armour, absent from the grave material. The archaeological material from the Garrison suggests a much wider use of protective armour than implied by the graves.

There are several possible reasons behind the differences between the Garrison and the graves, one of course being that the warriors from the Garrison were not buried in Birka at all. The question of who was buried in Birka is complex and does not fit within the framework of this thesis. I would however like to point out that the results of the dietary analysis presented in paper VI, show that the individuals in the graves did not originate from one and the same place. Another complication is that the finds in the Garrison to a large extent derive from one particular incident and do not necessarily provide an insight into the standard everyday equipment even of these warriors.

While highlighting the difficulties and the levels of uncertainty here, I believe the decisive reasons behind such differences are cognitive in character and closely relate to funeral practices and perceptions of a burial's purpose. The grave provided an arranged and idealised image of how the warrior ought to be, reflecting his self-image and contemporary society's perception of the warrior and his role. Thus the graves represent a cognitive reality, but cannot be read as reflections of everyday life. The weaponry in the graves should therefore accordingly be interpreted as a *representation* of the role and status of the interred while living, providing an idealised image of how the deceased should be when entering the next world. In contrast, the weaponry found in the Garrison is the result of the particular circumstances in field and reflects an actual situation. These were the weapons available at the time of battle, and though perhaps not fully matching the ideal, they were used in *consequence* of the prevailing situation.

3. ARTEFACT, CONTEXT AND DISTRIBUTION

The basic methods used in this study accord to three different levels of investigation from *the study of the individual object to the overriding cultural implications*. Starting with the *artefact*, my study of particular traits has led on to an understanding of complex networks of intercommunication and influences by considering the *geographical distribution* of these artefacts at large. In this process my own participation in most stages of the research process, from excavation and reporting through find conservation, has proven a great advantage, as it has allowed me to gain a good overview of the site context as a whole, together with detailed knowledge of each particular artefact.

As stated in the introduction, a starting premise of this study has been that cultural groups, contacts and loyalties are reflected in the geographical distribution of certain types of archaeological artefacts. There are a number of possible explanations for certain distributions of artefacts: e.g. travel and trade, war booty, intermarriages and diplomatic contacts (cf. Daim 2000; 2001). Discerning the particular history of each individual find is of course not possible, but there is always room for well-founded assessments and a discussion based on what can be gleaned about a broader context.

PARTICULAR DESIGN AND PATTERNS OF DISTRIBUTION

Specific objects showing particular designs are in this thesis regarded as communicators reflecting political and diplomatic contacts. In this context it is the particular design that is vital. Plain and ordinary objects may be too universal for establishing distribution patterns or other further interpretation. If, on the other hand, the objects are few in number per type and display an intricate design and detailed iconography, they become diagnostic tools. Stylistic and iconographical analysis constitutes the foundation for my further studies of the archaeological artefacts from the Garrison.

Firstly, the type of artefact is defined and determined. The present study is based on a number of different types of artefacts where the common denominator is shared function, affiliation or target group. Secondly, the artefacts are assessed on stylistic and iconographical grounds and thereafter categorised or grouped and finally interpreted. Traditional art-historical methodology and archaeological typology are followed, aided by scientific archaeological methods i.e. metal conservation, laser-scanner surface structure analysis, and scanning electron microscope and isotope examination.

In order to understand how and by whom the artefacts were used, it is of vital importance to *consider their site context*, i.e. the circumstances surrounding the finds and their relation to other objects and structures in the field. By considering the site circumstances of the finds and their relation to other artefacts, it is possible to conceptualize the context in which the wearer or user of the objects acted. At this stage, excavation, excavation-reports and archive studies, all constitute important source material. The ongoing excavations at Birka have constantly provided new material to work with and to analyse, making this thesis-writing dynamic and variable. The rich range of material has also been a valuable source of reference when considering finds from other sites. Trying to create a more complete image combining individual finds, context and patterns of distribution, is an attempt to reach further towards a fuller understanding of the role of Birka and its warriors during the 10th century.

In this context there are several advantages to studying the material culture related to a martial society. The warrior as the object for such a study is advantageous, as he belonged to a limited group of individuals and usually upheld a chosen position in society. His artefacts, being particular in design, formed a unique expression of a material culture where incitements to express group standing, loyalty and affiliation were exceptionally strongly felt. The prominence with which this was expressed might to discernable from the archaeological remains. To consider archaeological material as a part of a context with wider connotations than exhibited by the actual finds is not new, but this point needs perhaps to be especially emphasised when studying weapons: *Weapons should be considered as part of a weapon system, designed to function in battle and in accordance with a strategic plan.*

The active use of symbols of material culture in the form of decorated objects is the topic in papers II and III, both of which are concerned with the symbolic meaning and value of sword chapes (Hedenstierna-Jonson 2002; in print). The scarcity in numbers, the particular but limited range of motifs and the widespread but significant distribution of sword chapes make them an ideal subject for examining symbol use. As my studies have shown, sword chapes do not necessarily represent the one kind of symbol and I

suggest they constitute in turn, symbols of office or military affiliation. However in both cases there are political connotations, as both indicate affiliation to a leader, ruler or king. An important difference between the two groups is their archaeological context. As far as the falcon-motif chapes are concerned these have been found mainly in graves, as a part of the equipment of a warrior. On several sites more than one specimen of the type have been found. In contrast, the sword chapes decorated with the figure of the bound Christ, only appear as solitaires and generally in contexts other than graves, i.e. depositions or single occurrences on settlements.

Hence, the triple combination of object, symbol and context, can convey messages that it might be possible for us to at least partly glean from the archaeological material; displaying that diagnostic quality defined by Sackett though on a more complex level, including the iconological qualities defined by Wiessner. It is also possible to distinguish different types of symbols and the aim of their use.

Material culture in the light of archaeological science

The use of archaeological scientific analyses has been of vital importance at various stages of this study. Some of these techniques will be described in more detail below. I would like to emphasise that archaeological science is not limited to the use of scientific methods on archaeological material, but constitutes a way of thinking, structuring, planning and analysing. It is an ongoing process that must be carried through from preparatory planning, through excavation and analysis, to research studies; a process where science continuously plays a natural part. It is inherently interdisciplinary in its character, and aims to solve archaeological problems by integrating scientific and technical methods with traditional archaeology. In the borderland between disciplines a scholarly discussion emerges that invites new questions not possible to answer using merely traditional archaeological methods. The potentials can be quite seductive and it is important to emphasise that if the new facts received by scientific methods are to be of any value, analysis must be based on articulate and archaeologically relevant problems. Technique in itself can never increase the intrinsic value of the source-material (cf. Isaksson 2005).

The groundwork of archaeology and archaeological science lies in excavation. It is on the archaeological site that the actions have taken place and the artefacts used – this is their natural environment. In archaeological science, even material evidence is usually disposed of, such as soil, is considered an archaeological artefact. Without the foundation of archaeological context, the finds and subsequent laboratory analysis lose an important

part of their purpose and meaning. It is beneficial to consider as early as in the planning stage which scientific and technical analysis might be interesting to perform. Several of the laboratory analyses that can be made involve materials that would otherwise not be taken care of, or not treated in the correct manner. Many of the results from the excavation of Birka's Garrison have only been possible to attain with careful advance planning of which samples to take and how to treat them from the moment they have been collected.

Find treatment before conservation is a good example of a process that must begin during fieldwork. Delicate bronzes, as well as organic material must, from the moment they are taken from the soil, be treated in accordance with future conservation processes. Knowledge about the composition of the soil and the substances creating deterioration is important in order to preserve the finds until true conservation can be undertaken. Preparatory treatment during field-work can be labelled field-conservation. When full conservation takes place in the laboratory at a later stage, the close collaboration between archaeologist and find conservator is highly beneficial (cf. Trotzic & Klockhoff 2004:171f). "The conservation of a metal object is designed on the one hand to stabilize the metal and reverse the corrosion process, and on the other, to expose the correct form of the object and reveal its surface detail" (Klockhoff 2006). These surface details may include gilding, decoration in relief or inlays of another material, but also evidence of manufacture and tool marks. The optimum for correctly exposing such evidence is a continuous dialogue and close cooperation between conservator and researcher. The artefacts from the 1997–2002 excavations of Birka's Garrison were conserved by the EDTA method, which has proven most suitable for the conservation of fragile bronzes and decorated objects (Klockhoff 1989; 1993; Brunskog 1992).

When working with archaeological material, the demands of some of the analysing methods can be hard to follow, as there usually are restrictions on how the material can be handled. Destructive methods are in general banned. In this context, analyses conducted by scanning electron microscope (SEM) are most informative as they provide data on the chemical content of metal without harming the analysed object. In turn, the chemical content may help to determine the process and place of production. In the present thesis, SEM-analysis has been carried out on the material presented in papers IV and V. In paper IV the results of this analysis indicated a correlation between belt mounts from the Garrison and a corresponding set from Gnëzdovo, Smolensk in Russia (Hedenstierna-Jonson & Holmquist Olausson 2006:45; Wojnar Johansson 2006). In paper V comparative analyses were performed on artefacts more likely to have been produced locally. The

results show that the metal composition differs among these artefacts, and that the objects estimated to be most elaborate in craftsmanship also are purer in metal, almost without any alloys (Wojnar Johansson 2006b).

Surface structure analysis using laser scanner equipment

Paper I comprises a methodological study on the use of laser scanner surveys on decoration in archaeological material. The method of mapping the surface of an archaeological object using a laser scanner was developed by Henry Freij and Birgit Arrhenius at the Archaeological Research Laboratory (Arrhenius & Freij 1992). The aim was to obtain impartial data for further processing with regard to the interpretation of tool marks and decoration on archaeological material. The method has successfully been used on rune stones and has aided in the identification of particular carvers by their individual cutting techniques (Kitzler Åhfeldt 2002). When working with archaeological relief images the recorded measurements are processed as topographical data and converted into a contour map showing the surface structure. In this way traces of decoration may stand out by their relatively controlled formation, whereas features due to corrosion produce a more unplanned or rugged impression. While the naked eye tends to smoothen out this ruggedness and interpret it as man-made, the mechanical measuring of the laser scanner records every feature and displays it more clearly. When using the laser scanner technique, it is necessary to compare the results presented in the topographical surface map against the actual artefact. By pairing the mapped contour features with for example visual examination of the object surface by optical microscope, potential traces of ornament can be detected. These traces are difficult or impossible to interpret without consulting comparative material, and a representation increases the possibility to draw conclusions. This method of analysing a damaged surface using the laser scanner technique must be undertaken with great caution, but can however prove beneficial. One limitation of the method is of course the importance for comparison between the measured data and the object itself. The method is still new and in need of refinement to function at its best. Refined, the method could prove very useful when working with corroded or otherwise damaged relief imagery. In its present form the method nevertheless constitutes a valuable contribution to the process of reading and interpreting ornamentation on archaeological material (Hedenstierna-Jonson 1998; Ericsson 1999; Westerholm 2001). Paper I shows the potential of the method in its present unrefined state. Methodological refinement has however not been the aim of the present thesis and the method in its limited form has also been used on a number of artefacts as a supplementary source of information in especially papers II and IV.

Isotope analysis

To catch the individual in archaeology is always something of a challenge. The context of a grave in some way echoes the buried individual, such as in terms of rank and status in society, but as observed above, a grave also presents an idealised image that does not necessarily reflect the real life of the individual. The use of archaeological scientific methods can offer valuable insights into the life of the individual, and with the analysis of stable isotopes on skeletal material, it is possible to gain information on personal diet. Whereas analyses of the stable isotopes of carbon ($\delta^{13}\text{C}$) and nitrogen ($\delta^{15}\text{N}$) provide knowledge on protein intake, the analysis of the stable isotope of sulphur ($\delta^{34}\text{S}$) can give an indication of where the consumed food came from geologically (Chisholm 1989; Ambrose 1993; Lidén et al. 1997; Richards & Hedges 1999; Richards et al. 2001, Richards et al. 2003; Muldner & Richards 2005). The present thesis includes a study of some skeletal material from Birka's graves. As no human bones were retrieved from the Garrison, it was not possible to conduct a dietary analysis specific to the warrior. The relation between the men buried in the grave-field and those active in the Garrison is at present not possible to determine the distinction between warriors and weapon-burials is a complex matter as observed above. Bearing this in mind, the divergence in diet indicated by differences in $\delta^{13}\text{C}$ between the men buried with weapons and those without any, begs further discussion. There are even significant differences in $\delta^{34}\text{S}$ values between the men and women, indicating different places of origin or habitat. Interpreting the results of the study, it can be suggested that the men buried with weapons had a deviant diet and distinguish themselves even with regard to provenance.

4. ON THE MARTIAL SIDE OF BIRKA

Birka is one of the most renowned prehistoric sites in Sweden and for many is a symbol of the Viking Age. Earlier studies of the site have concentrated on the extensive burial grounds and the town area (Svarta Jorden – the Black Earth) (fig. 4). Limited sections of the town-rampart were excavated by Holger Arbman in the 1930s, but not for the sake of investigating the martial character of the fortifications. Though highlighted in a survey made by archaeologist Gustaf Hallström in the 1920s (reported in 1925), the martial aspects of Birka were left unstudied until the launching in 1995 of the project *Birka's fortifications*, led by Lena Holmquist Olausson of the Archaeological Research Laboratory, Stockholm University.

The archaeological investigations carried out within this project uncovered a unique material relating to the martial aspects of Birka (Holmquist Olausson 1993; Kitzler 1997; Hedenstierna-Jonson et al. 1998; Fennö Muyingo 1998; 2000; Hedenstierna-Jonson 2000; Holmquist Olausson & Kitzler Åhfeldt 2002). In time these excavations became a part of the project *Strongholds and Fortifications* and were thus placed in a wider context including a number of fortified structures around the inlets to Lake Mälaren which are thought to have constituted the outer defence-line of Birka, and its underlying power structure (cf. Holmquist Olausson 2002:165; Deckel 2002; Olausson & Lindström 2003). Within the scope of both projects, *Birka's Fortifications* and *Strongholds and Fortifications*, all known land-based fortifications at Birka have been studied: i.e. the town rampart, the hillfort and the so-called 'Garrison'. Martial culture and the warrior are primarily visible in the context of the Garrison, the material from which in particular begs the question of whether the role and function of the warrior needs to be reappraised. The diversity and quantity of the finds enable new questions to be asked concerning the organisation, influences and affiliations of the Birka warriors. Weapons and warfare technique are closely bound to cultural spheres and according to John Carman there was a reluctance to try out new weapons and techniques, even if they had proved successful to others (1999:50 and references cited therein).

The military equipment retrieved from Birka, and in particular from the Garrison indicates a deviant situation and therefore poses the question whether these objects were used in accordance with their original context, or if they should be regarded as loot or prestigious goods, lacking their initial meaning and function?

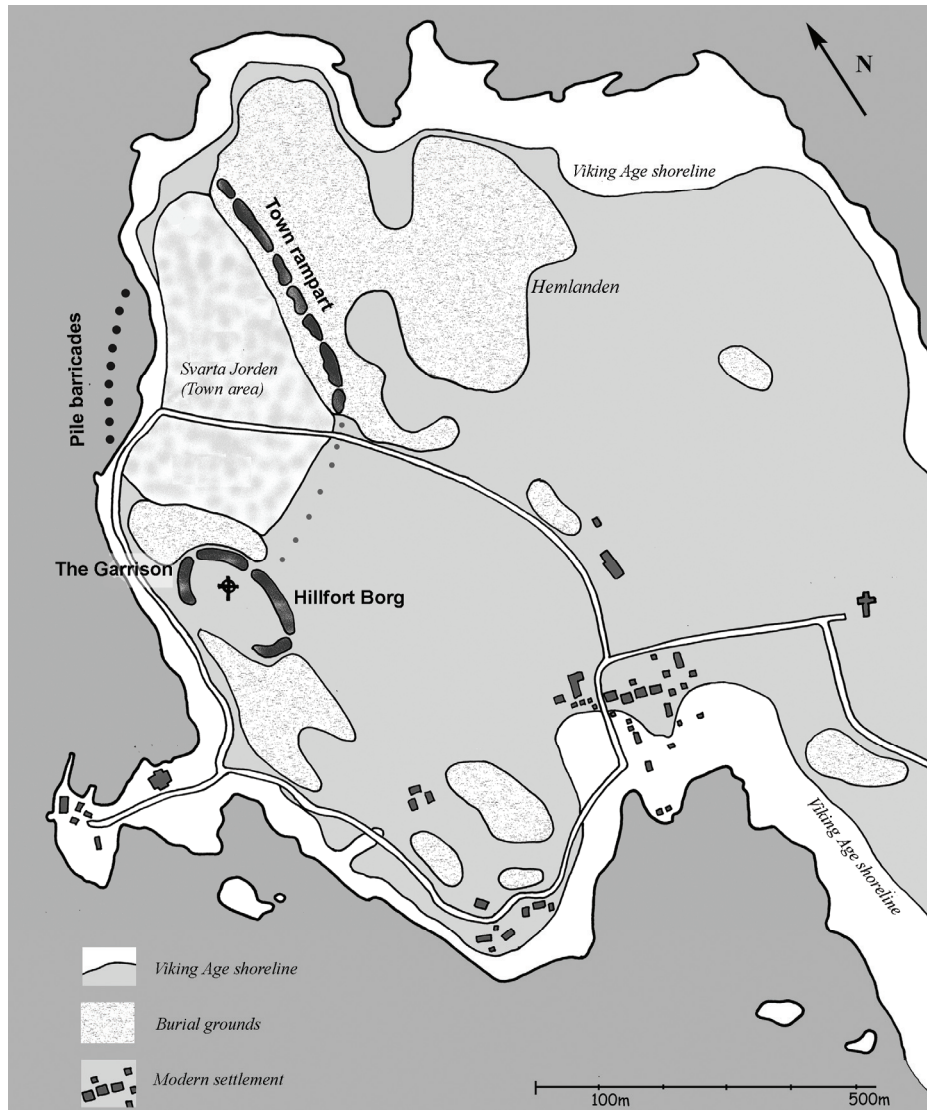


Figure 4. Birka/Björkö with its fortified structures (map by C. Hedenstierna-Jonson).

FORTIFICATIONS

Lena Holmquist Olausson has characterised the fortification of Birka as an interaction between land and water (2002). The strategic location of the island of Björkö at the intersection of important waterways and the small size of the island itself, presupposes that the threat of attack came from the water (the Mälar was at this time an inlet of the Baltic sea) and that set-piece battle was not fought on land on the island. The fortifications, constructed in accordance with the anticipated type of threat, were made up of three main components: the town rampart, pile barricades in the water closest to the town area, and most significantly the hillfort with its adjoining garrison (fig. 4).

The town rampart

The rampart which encompasses the town area was in its original extension *c.* 700 meters long. The surviving rampart is *c.* 450 meters in extent, of a stone and earth construction and divided into seven segments by six openings or gates. It was most likely linked to the now only partly surviving pile-works stretching out into the water, and together these formed a fortified construction that surrounded the town and its harbour. Hjalmar Stolpe investigated approximately 50 possible grave-structures in the rampart and also discovered what he interpreted to be a barricade built of old boats (cf. Holmquist Olausson 1993:69). In 1932, Holger Arbman undertook a minor archaeological excavation of the actual rampart and the prolongation of its visible remains, with the aim to see if the structure was similarly constructed in its different segments and further to date it and define its original full extent. The results show that the rampart was not uniformly constructed but had been strengthened in the 10th century (Arbman 1933). Fifty years later, further excavations were undertaken by Lena Holmquist Olausson, focusing on the rampart and its chronological relation to the terraces that lie in the immediate vicinity. Holmquist Olausson's results show that the rampart was built in several stages with a dating that spans the entire Birka Period. The final stage of construction can be dated to the late 9th century. Holmquist Olausson's investigations also show that the activities taking place on the terraces by the town rampart had changed in accordance with the different phases of the rampart structure. Initially a dwelling place associated with the higher stratum of society, the terraces gradually developed into an area supporting activities of trading and manufacture (Holmquist Olausson 1993, chap 6).

An important addition to our knowledge of the relation between the town rampart and the adjacent hillfort, was the detection of the continuation of the rampart so that it connects up with the hillfort. The missing section of the rampart had been ploughed away during centuries of cultivation but was retraced by phosphate analysis and electromagnetic surveys (Wählander 1998).

Borg

The most prominent feature of Birka's fortified structures is the hillfort called Borg (Sw. *borg* = fort). There is an unexplained discontinuity between the construction of hillforts and other later medieval fortifications. Hillforts are frequent during previous periods, especially the Migration period, but in the 6th century they virtually disappear (cf. Olausson 2000:127f). An exception is Birka's Borg. This hillfort consists of a semicircular rampart, bound on the southwest by the rock cliff that drops steeply into Lake Mälär. Its rampart measures approximately 350 meters in length and varies between two and three meters in height. It contains three entrances (gates). Excavations have shown that the rampart was constructed in the 'shell-wall' technique (stone-faced rubble walls) and that it was erected in two phases. Both phases yielded evidence for wooden constructions crowning the rampart, interpreted as super-structures and battlements. The oldest phase of the rampart was, according to radiocarbon dating, in use between the mid 8th century and, at most, early 9th century, when it was burnt down. The rampart was then rebuilt and strengthened considerably, increasing approximately 1 meter in height. Even this phase ended in destruction by fire in the late 10th century or early 11th century (Fennö Muyingo 1998; 2000; Holmquist Olausson 2002:162; 2002b:160f). The excavations of the rampart yielded a very interesting discovery: the first phase of construction incorporated an underlying burial, marked by a raised stone. This *bauta*-like stone had been accommodated into the final stage of the construction and was thus a visible feature in the battlement of the 10th century. The burial, dated to the first half of the 8th century, contained a man and a horse in a shaft grave, bearing resemblance to the chamber-graves of later date. There were no weapons among the retrieved grave-goods, but fragments of high-quality textiles including the possibly earliest known piece of silk on Birka, together with a horse, indicate a man of high social standing (Fennö Muyingo 2000; Holmquist Olausson 2002:162).

The use of the hillfort in spite of excavation is still indefinite. Stolpe excavated a number of graves during his investigations, but the results are somewhat ambiguous and allow for other interpretations, such as sooty cultural layers. In search of better knowledge of the use of the area inside the hillfort, new investigations were initiated in the summer of 1998 and continued the following year. The results from these investigations produced more graves, though of a slightly odd character, and no evidence of other activities (Hedenstierna-Jonson 2000).

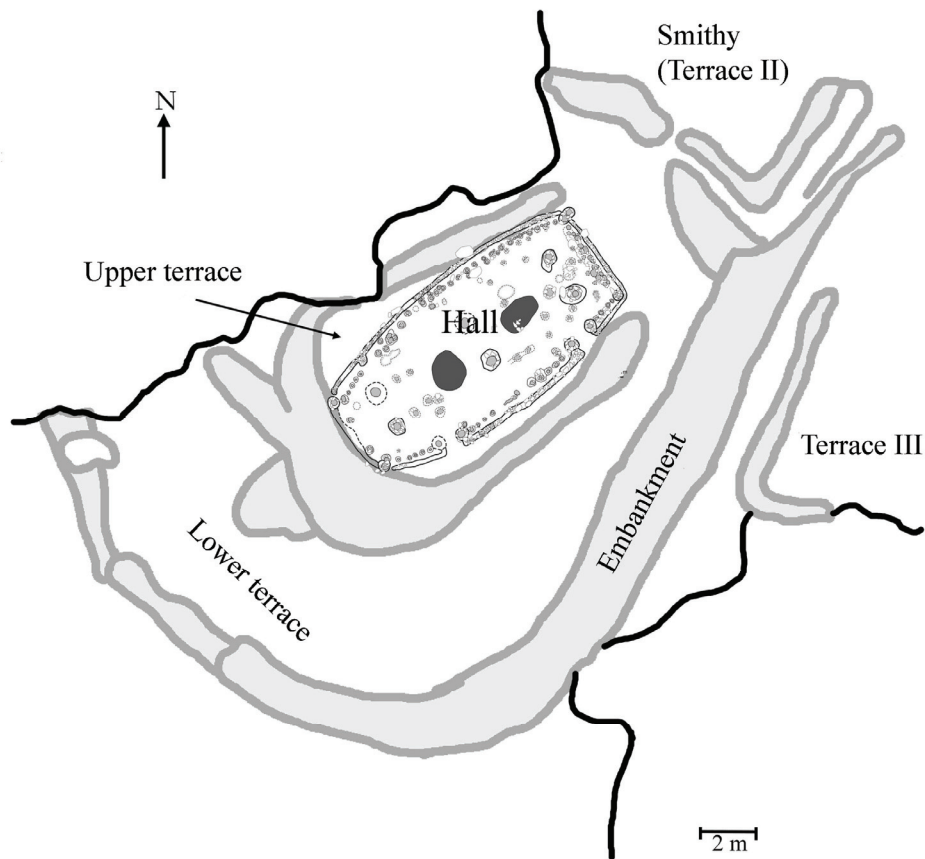


Figure 5. Overall view over the Garrison (map by M. Olausson & L. Kitzler Åhfeldt).

The Garrison

In close proximity to the hillfort, just outside the entrance designated the 'King's Gate', the Garrison was situated in a steep slope leading down to the waterfront. The area had been levelled by several stone-set terraces, but the remaining slope is still considerable. The strategic location of the Garrison blocks the direct path from the water up to the hillfort and while the buildings in this garrison area were protected between two rock cliffs, just a few steps up the hillfort side commands a good view of the surrounding waters and of the town area.

In addition to the rock cliffs, the Garrison-area was enclosed by a rampart crowned with a wooden structure, commencing facing the waterfront and continuing up the slope almost the full length of the garrison area. To the north, the Garrison area borders one of Birka's wealthiest grave fields, containing several of the islands chamber-graves. Out of the five visible terraces, four have been excavated, each displaying remnants of wooden buildings and constructions (fig. 5). The settlement was dense but well planned producing wooden lined drains, wooden boardwalks and a cistern. The accompanying smithy contained at least four forges where activity seems to have been intense. The main tasks probably included repair of weaponry (e.g. chain-mail) and the archaeological material indicates the production of iron Thor's-hammer amulets and knives (Arvidsson 2003). Of special interest is the production of padlocks that has taken place (Gustafsson 2003). Below the settlement, outside the rampart, a connecting jetty construction extended out into the water (Kitzler 1997; Hedenstierna-Jonson et al. 1998; Holmquist Olausson & Kitzler Åhfeldt 2002).

The warrior's hall

The most extensive terrace held the remains of a great building with the character of a hall or assembly building (cf. Brink 1999:21ff). Measuring 19 x 9 meters, the dimensions are not fully consistent with Iron Age hall-buildings, something that at least partly may be explained by the limited area in which it was built (fig. 5). The roof rested on three pairs of stout posts creating a large open room inside. Analyses of soil-samples taken from the layer identified as floor and the distribution of finds indicates a spatial division of the interior, even though there are no remaining traces of inner walls (cf. Bengtson 2001). The seat of honour was situated in the northwest, defined by a concentration of high-status finds. The eastern part of the house served for storage, with extensive finds of weapons and other objects. The reoccurring finds of padlocks and coffer-mounts along the inner walls of the building have been interpreted as the remains of storage-boxes or chests. Weapons were also found lined up against or hanging from the walls –

shields, spears and lances. The hall was built according to a thousand-year-old longhouse tradition that ceased towards the end of the 10th century. The archaic tradition of construction was adopted as a deliberate link to former ways and to pre-Christian religion (Hedenstierna-Jonson & Holmquist Olausson 2006:12).

Based on the find-material, the hall-building, as well as the rest of the Garrison, has been dated to the second half of the 10th century. The remains of an older building were found underneath the hall, distinctly separated from each other by constructional layers of clay, sand, gravel and stones. The older building contained a few finds, mainly fragmented animal bones and a couple of potsherds (Holmquist Olausson & Kitzler Åhfeldt 2002). As with the other parts of Birka's fortified structures, the Garrison was constructed and used over more than one phase. The earliest remains are dated to the second part of the 8th century. Even here, the structures were enlarged and strengthened at least once and the latest phase is represented by the hall building which was constructed during the second part of the 10th century (Holmquist Olausson 2001).

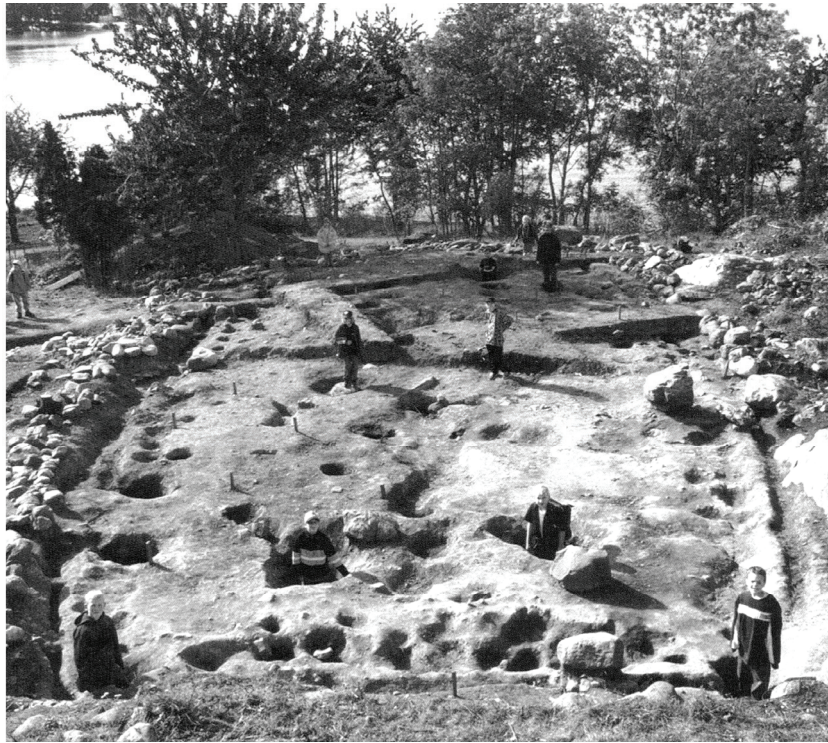


Figure 6. *The excavated warrior's hall in the Garrison (photo Hedenstierna-Jonson).*

WORK AND WORLD VIEW OF THE WARRIORS

It is well known that Birka was closely associated with the Eastern trade-routes during the 10th century and it is therefore not surprising that such contact is also reflected in the material world of the warrior (Jansson 1987; 1997; Stalsberg 1988; Melnikova 1996; Hedenstierna-Jonson 2001; in print; Duczko 2004; Gustin 2004). What is noteworthy is that these Eastern martial influences already show up in eastern Scandinavia at a much earlier date. The employment of a garrison may in fact be the result of a long continuous tradition going back to the Migration period. During the Migration and Vendel periods of Scandinavian history, cultural influences from the Franks were considerable, especially during the late Vendel period when the Franks advanced to the foreland of Jutland. As these cultural influences were considerable, one might expect them to have dominated the martial world of eastern Scandinavia as well. The Vendel chieftains and their equipment were however more influenced by the Roman Graeco-Hellenistic and Persian-Oriental cavalry traditions (Lindbom 1995; 1997; 1997b; Engström 1997:-249).

With regard to the Vendel period chieftains, Johan Engström notes that they “could of course, have fought battle on foot, but their weaponry does not suggest such an interpretation” (1997:254). This is a very important statement as it indicates that weapons often are treated as separate finds with functions that are not linked to actual usage, i.e. battle. When studying the warrior at Birka, it becomes clear that what were mere influences before, have now become a fully functional life style. The weapons were used in a fighting order, which in turn indicates training, drilling and the ability to give and take orders. Hence weapons should be regarded as belonging to systems, intentionally put together to function as effectively as possible in a fighting situation. Therefore they should be studied not as single artefacts but as aspects of a well-structured, composite, whole.

Personal and professional

Not many items in the Garrison can be defined as personal, and even when personal items are identified, they cannot, due to the context of the site, be linked to any one individual. Instead they act as representatives of the individual warrior and his everyday life and work. Such objects include glass beads and coin clippings, both of which probably should be regarded as means of payment. Gaming pieces of antler hint at leisure time and the many small-sized whetstones, suitable for carrying in the belt, and thus essential personal items of the dress, reflect the number of men living in the

Garrison. Another category of object, closely connected to the belt and even more indicative of the number of warriors in the Garrison, is the antler comb and its comb case. The encased comb is considered to be part of the warrior's equipment and the simple patterns with which they were decorated may reflect discrete expressions of the individual (cf. Thunmark-Nylén 1991:124f). Combs and comb cases have been retrieved from several contexts in the Garrison, but vital for estimating the number of warriors, is one particular deposition of objects which will be discussed further below. The comb-case fragments from this particular deposit have been estimated to derive from approximately 40 cases, possibly reflecting the number of warriors present in the Garrison. This estimate is based also on the presence of a number of chests or coffers placed along the inside wall of the main hall-building in the Garrison. The archaeological material is here interpreted as suggesting that each warrior kept some of his equipment in a personal chest, locked with a padlock, the key for which exhibited the warrior group's symbol – the falcon.

An extensive part of the weaponry of the Garrison warriors was found along the walls inside the hall-building and could probably be used by any warrior, hence the weaponry was also communal in character (cf. Kitzler 2000; Krusten 2001; Stjerna in print). Communal weaponry indicates that the weapons were provided in some way, in turn implying a certain level of professionalism. In spite of this, the weaponry shows great diversity when it comes to types. The arrows, the largest group of weapons from the Garrison (knives excluded), constitute a good example of this diversity. According to Erik Wegraeus' typology, arrows can be divided into war-arrows and hunting-arrows. But when applied to the material from the actual battleground of the Garrison, such war-arrows are surprisingly scarce (Wegraeus 1971; 1973; 1986; Lundström 2006).

The Dress and equipment of the Birka warrior

Dress has always been an effective medium for the communication of social standing. Not only rank, but even marital status, descent and affiliation could be displayed by dress. Foreign influences could reflect ideological and political standing in quite a visible way, even if such are not always easy to interpret. Doubts have been expressed about the existence of rank-marking costumes at this time (cf. e.g. Larsson 2003). Though there is every reason to believe such existed at the end of the Viking Age, little is known about what this signified or how it was regulated.

One item of equipment that was especially linked to the concepts of rank and status was the warrior's belt. In the kingdoms of western Europe as well as in the nomadic societies of the Eurasian steppes, the belt signified coming of age, social standing and military achievement. In the West the belt together with the sword constituted the badge of the nobility – *cingulum militiae* (cf. Le Jan 2000:286). In the nomadic warrior cultures of the East, the belt symbolised coming of age and together with the composite bow served as symbols of male maturity, ability and high social standing. Though displayed in slightly different fashions in the East and West, the decorations and design of the belt symbolised both inherited and merited status and rank. In paper IV the composite belt of Eastern origin is established as an expression of warrior rank and status, since within all documented contexts there are clear indications that the belt figured as part of a rank-designating system (Hedenstierna-Jonson & Holmquist Olausson 2006).

The weaponry in Birka's garrison was functional. The types are simple, yet effective and the complete set gives the impression of professionalism, not display. The offensive weapons consisted of spearheads (for both javelins and lances), arrowheads, axes, swords and a seax. The defensive weapons consisted of shields, chain mail and lamellar armour. Possibly there are also parts of a helmet. The Russian researcher Michael Gorelik describes a grave in Birka, with contents typical for the nomadic steppe-warrior culture, namely lamellar armour (Gorelik 2002:145). This grave however does not in fact exist. This is a misunderstanding probably based on misinterpretation of the excavator Hjalmar Stolpe's description of his material in the late 19th century. Nevertheless the material Gorelik lists corresponds well with the finds from the garrison rather than the graves; especially when the recent excavation finds are included. Dress fittings of Eastern type have also been recovered, including bronze buttons and mount for buttoning dress, shoes or boots. A complete belt set of Volga Bulgarian origin underlines the clearly Eastern character of the Garrison material.

Blade weapons and shields

Fighting at close range involved weapons such as swords, axes, battle-knives (seaxes) and shields, all of which are represented in the material from the Garrison. The find context of the shields allows for an interpretation that they had been hung on or lined up along the wall in the warrior's hall. Shield-bosses and shield mounts have also been found, both whole and in fragmented form and spread over the entire area, reflecting the fierceness of the final battle. The shield served not only for protection but could, skilfully handled, also be used as an effective offensive weapon. Another weapon demanding skill and experience was the axe, which could be used for cutting

and crushing, and also as a missile weapon. The axe was the distinguishing weapon of the Varangian guard in Byzantium and has become a symbol of the Northern warrior. Five axes of varying types have been identified in the material from Birka's Garrison (Wallgren 2005). Two of these could be categorised as tools (Type C according to the typology by Petersen 1919), though the distinction between a battleaxe and an axe tool is purely hypothetical. The versatile character of the axe indicates that such a distinction was not relevant. One of the axes is of Petersen type A, a type sometimes referred to as a warrior's axe (cf. Enoksen 2004:144).

The seax, an approximately 50 cm long knife, was a rare and prestigious weapon, occurring in some of the wealthier Birka graves where it usually appears together with its leather-sheath, adorned with a chape and mounts in bronze. One blade and several bronze mounts have been recovered in the Garrison (cf. Stjerna 2001:39; in print). There are no complete swords found on site, but two pommels (Petersen type H–I and an unusual model possibly of the so-called separate type) retrieved in the context of the final activities of the Garrison, prove the use of swords and bear evidence of the ferocity of the final battle.

Bows and arrows

The missile weapon with longest range and incomparable accuracy was the bow and arrow. This was perhaps the most important and strategic weapon for fighting under the conditions seen in Birka. Apart from their metal arrowheads, the traditional Northern archery equipment contained organic parts which are therefore absent from the archaeological material. The arrowheads found in the Garrison show that traditional Northern archery predominated. This would not usually be worth emphasising but for the material remains of other types of archery equipment in this context which opens the door for a remarkable interpretation: according to a recent study, there are finds belonging to the equipment of the Eastern archer among the material from the Garrison (Lundström 2006).

The Composite bow and closed quiver

The traces of archery equipment of Eastern type include a number of special mounts deriving from so-called closed quivers, a characteristic of the equipment of the Eastern archer. These mounts indicate that four to seven quivers of this type were used by the Birka warriors. Among the arrowheads found, there are types that are usually linked to the composite bow (Lundström 2006). In contrast to the rather simple design of the traditional bow, the Eastern bow was made of several parts, of different materials. A skilled archer could probably use the composite bow without further training,

though with less precision. The quiver, on the other hand, required long training.

An important parallel to the archery equipment in the Garrison has been found in Birka grave Bj1125b. This chamber grave contained the inhumated remains of an individual and a horse. The rare composition of grave contents suggests the interpretation that the interred was a mounted archer of Eastern type. The grave goods include a bundle of arrows, very specific mounts from an Eastern so called closed quiver, and a button of a type usually associated with the caftan or oriental-style dress.

The presence of such a grave in Birka supports the idea that there could have been accomplished Eastern type archers active in the defence of Birka.

The character of the bow was slightly ambiguous in Western Europe. It was relatively simple to manufacture, and with training was possible to master even for a person of lower rank. On the battlefield it was a very powerful and dangerous weapon if used adequately, and it challenged the rules of warfare as it made it possible for a person of no consequence but with good aim to wound or even kill a lord or king. This has been documented in contemporary sources and a number of well-known historical profiles have died in this way. In Scandinavia, as among the steppe-nomadic tribes, the situation was different. The bow, and thus the archer, rested upon tradition, as recounted in the saga-material, and the art of archery was highly regarded even in the upper stratum of society (for a detailed compilation of attitudes to the archer, see Bradbury 1985 chap 1).

Spears, javelins and lances

Spears, javelins and lances can be difficult to separate in the archaeological material, even though they played quite different parts in the context of battle. While spears and lances were primarily used as thrust weapons, the javelin was a missile weapon. The significance and symbolic value of these different types most likely varied, which is important to bear in mind when stating that one or the other of this category of weapons is the most common weapon found in graves. Weapons of this type are usually designated spears and for reasons of simplification I will also use this term. The spear was a weapon of great symbolic value – both in connection to the war god Odin and as the symbol of the armed, free man.

As is the case with most of the weapons found in the Garrison, the spearheads there differ from their counterparts in the graves. The Garrison shows a great diversity in its set of spearheads and there are hardly two of the same types. According to a recent study on the spearheads found in the Lake Mälaren region it is possible that the model referred to as Petersen's type E was manufactured in Birka (Arrhenius 2005; Thålin Bergman 2005). Even

though the bulk of the spear-material from the Garrison has been difficult to type cast, there are at least three spearheads of this type. Among the other types found there are examples of rare models considered to be of more Eastern origin (Krusten 2001).

Armour

Viking Age armour, i.e. chain-mail shirts, helmets, etc., have one particular feature in common – though illustrated in a number of depictions of warriors, they are rare to virtually non-existent in the grave material. The reasons for this have been partly discussed above in the comparison between weapon-graves and the material from the Garrison since fragments of armour have been found in archaeological context at the Garrison.

The most frequent finds of protective armour are fragments of chain mail that can have belonged to mail-shirts (*birnie* and *hauberk*), neck-guards (*aventails*) and mail hoods. It has not been possible to determine the exact function of the chain mail from the Garrison, but the variations in size and thickness of the individual rings are greater than in chain-mail material from other parts of Sweden (Ehlton 2003).

Even more spectacular are the finds of iron lamellae deriving from lamellar-armour. At least eight different types of lamellae have been found in the Garrison context and it is highly probable that these derive from separate armour. These lamellae are without direct parallel in their time-period, at least not in the neighbouring regions. In the mass-graves of *Korsbetningen* from the 14th century battle of Visby, lamellar-armour has been retrieved that are considered a fair parallel to those from the Garrison. The origin of the Garrison armour has not yet been affirmed, and both Byzantium and Central Asia are proposed as places of manufacture (Thordeman 1939; 1940; Dawson 2002; Stjerna 2004).

The final piece of armour to be discussed, and possibly the most elusive during the Viking Age, is the helmet. Though no actual fragments of helmets have been identified in the archaeological material, a number of mounts have been found that have been interpreted as deriving from a helmet (or helmets) possibly of a pointed composite type typical for the Kiev area (Holmquist Olausson & Petrovski in print).

Thus, in spite of the image of the warrior presented by the grave material, at least the Birka warriors of the Garrison used protective armour, to some extent.

The standard – a symbol of battle

The symbol of battle above all others, was the standard. As Lawrence Keeley observes, soldiers exhibit an extraordinary preoccupation with protecting their own and seizing their enemy's symbols (1996:62). The standard played a decisive role in the actual battle, as the fighting was most fearsome closest to the standard (fig. 3). It was the symbol of resistance – the troops would fight as long as the banner or standard was flying. The loss of the standard was associated with great dishonour, yet this symbol was flaunted in the very front of the battle-line. The standard also functioned as the point where men rallied round “in hand-to-hand fighting to re-form a compact unit” (Verbruggen 1997:85). To carry the banner was an especially honourable task, probably reserved for an experienced warrior. Well into the Middle Ages, we hear of numerous rules connected to the banner. The office of Royal standard-bearer was even of hereditary character (Prestwich 1996:175; cf. Törnquist 1993:33). The material remains of standards or flags from the Scandinavian Viking Age are understandably few or non-existent, and their mention in the scaldic verses appears rather late (Jesch 2001:253). Even though there are no written accounts, there are other indications that the use of standards was firmly established in Viking period northern society, as shown by Laila Kitzler Åhfeldt (2000).

When they appear in the scaldic corpus, the banners personify battle, setting standards for how the battle should be fought and won. The truly heroic leader was supposed to fight ahead of the banner or in the vanguard and the expression “pressing banners” suggests a particularly fierce attack (Jesch 2001:253). In the previously cited saga of Harald Sigurtharson, Harald considers his most valuable possession to be his banner, the *‘Land-Destroyer’*, on account of a prophesy saying “that victory would be his before whom this banner was borne” (Snorri Sturluson *Heimskringla*, saga of Harald Sigurtharson chap. 22). In the same saga there is an account of a battle at the gates of a stronghold featuring attacking Varangians. Harald and his men came to fight in support of the Varangians but on arrival, his standard bearer fell. Harald ordered his man Halldór “you take up the banner!” and Halldór, challenging his leader answered “Who would bear your standard if you do your part so timidly as you have been doing?” (Snorri Sturluson *Heimskringla*, saga of Harald Sigurtharson chap. 9).

A particular type of banner, the *Dracones*, is of special interest in the context of the Rus' warrior and Birka's Garrison. Originating from the Roman army, the Dracones-type banner survived Antiquity and is represented in the 9th century Golden Psalter of Saint-Gall (e.g. Eggenberger 1987) as well as in the 11th century Bayeux tapestry (fig. 7). The dragon banner, borne in front of the warriors, consisted of a head made of metal or some

other stiff material, to which a textile tube or cornet was attached, giving the illusion of a snaking body when fluttering in the wind. The actual size of these dragon heads is not known, but the depictions from both Roman and later times show both smaller and larger versions. Even if the scale shown in these pictures not should be taken at face value, they still do not rule out the possibility of interpreting the small metal dragon head found in the Garrison as such an object (fig 7). Dragon heads of this type have been found on a number of sites, including Hedeby and Novgorod and the pattern of their distribution roughly corresponds to that of sword-chapes of the types found in the Garrison (Nosov 1990:157; Hedenstierna-Jonson 2002; Gräslund 2005). Used as dress-pins, the dragon heads most likely signalled a special status and function, and viewed in the context of the Dracones they were possibly the dress-pin of the standard bearer.

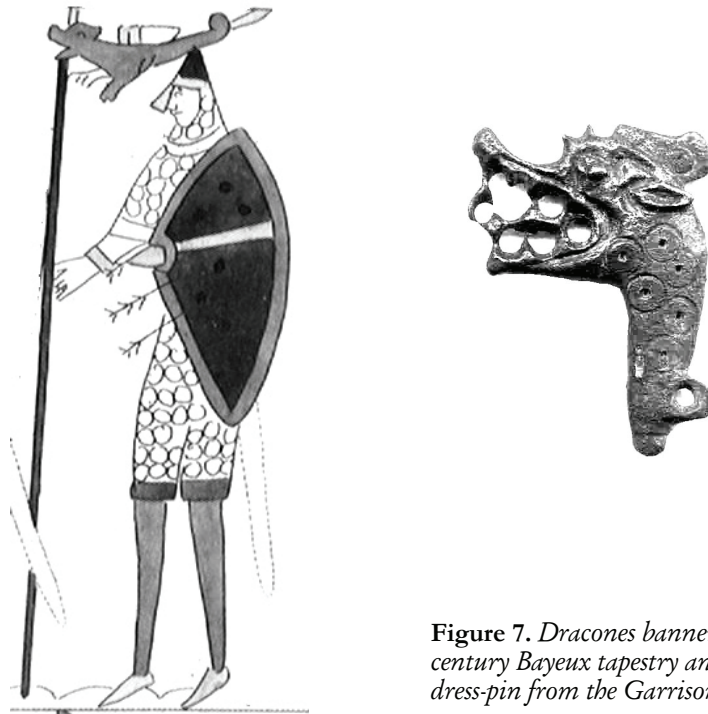


Figure 7. *Dracones banner from the 11th century Bayeux tapestry and Dragon head dress-pin from the Garrison.*

Organisation and training

Based on the archaeological evidence, in particular what in this study have been designated personal items, the size of the permanent troop in the Garrison has been estimated to approximately 40 men. Together with the osteological material, finds indicate that these men lived in the Garrison-area all year round and were thus to some extent professional warriors. This suggested number of stationed men in the Garrison corresponds to the size of the garrisons of 12th century English castles, which according to Michael Prestwich (2001), and based on the information given in the cotemporary *Exchequer Pip Rolls*, ranged between 20 and 60 men. Including evidence from even later sections of the Mmedieval period in England, this number ranged between 50 and 100 men during the Later Middle Ages. The warriors were at times systematically organised into groups, each serving for a limited time period. (Prestwich 2001:186f, 190, 191f). A system that might well be applicable to earlier periods and to the situation in Birka.

In the context of medieval castles, there is a noted difference between the knights, mounted sergeants and foot-soldiers (Prestwich 2001). Differences in rank and function are also notable in the Garrison. Together with artefacts of rank-indicating type such as the warrior's belt, there is a spatial aspect in the hall-building that reflects internal group differences in rank and status (Olausson 2001; Hedenstierna-Jonson & Holmquist Olausson 2006:66). Such a ranking-order and a system of command, was necessary when fighting in the type of close formations as used by the contemporary troops abroad. To judge from weaponry finds and contemporary written sources, it is obvious that the northern warriors appeared in battle order, with the men grouped in small tactical units, probably in wedge-shaped formations (Engström 1997:248). The only effective way to fight was to learn by drilling in battle order, led by the military chiefs, prior to battle.

The Late Viking Age also sees the creation of a warrior ideal, something that reflects the encouragement and training of the warrior collective (Jesch in print). In a spicy late 12th century account on the military training of the sons of Henry II, Roger Howden the king's royal clerk states – "No athlete can fight tenaciously who has never received any blows: he must see his blood flow and hear his teeth crack under the fist of his adversary" (cited from Verbruggen 1997:29). Military training and strategy is a prerequisite for the kind of warfare implied by the archaeological material in the Garrison. The high level of competence visible in the archaeological remains from the Garrison clearly shows that these warriors were thoroughly trained. The question is by whom? Who provided the knowledge of advanced forms of archery, tactics and strategy? As in later medieval times, warriors seem to have received their training in the retinue or the household of a lord. This

would account for most of the warfare techniques visible in the Garrison, but not all. The advanced technique of the Eastern archer especially that of using the closed quiver, required years of training. There are few, if any finds of composite bows and closed quivers in Scandinavia during this time, apart from those found in the Garrison and Birka grave Bj1125b.

Traces of combat are obvious in the archaeological material and we can assume that active duty as a warrior included both the defence of Birka as well as campaigning and waging war in other places. But what can be said about daily life, apart from warfare, when examining the archaeological material? Objects connected with writing such as runic inscriptions, styli and fragments of a possible writing tablet, point towards a certain level of literacy among the warriors. The manufacture of padlocks and possibly even keys in the smithy indicate that the warriors had certain controlling functions (cf. Gustafsson 2003). The garrison warriors were a part of the higher levels of society and their spare time was probably passed accordingly. Gaming pieces, glass vessels and mounts from drinking horns tell of gambling and feasting. According to the saga-material, poetry and recitation also constituted an important part of the warrior's life. Most likely these warriors were also engaged in hunting and jousting, both provided valuable training for actual battle.

On food

Even with regard to diet there are differences between what the archaeological evidence in the graves and what dietary studies on the human bones show was actually eaten. Food also constituted an important aspect in the signalling of rank and status (cf. Isaksson 2000; Eriksson 2003). The dominance of meat in the diet of the 'Vikings' has been showed to be a myth, even though the Northmen themselves cultivated this myth as a cultural image: "The significance of meat was more a religious and social characteristic, than a dietary disposition" (Isaksson 1998; 2000:55). According to the same misconception, their warriors were supposed to be the greatest meat-eaters of all. The Garrison however displays a different picture. The food remains from the Garrison show significant contrast to evidence from the town-area. The most visible divergence is in the bone-material in that the Garrison shows a greater quantity of cattle and lesser amounts of pig (Wigh 2001b fig.64). There are even some differences to be noted in the carbonised organic concretions interpreted as bread or porridge, and another significant feature is that remains of food storage, e.g. pots and vessels etc., are remarkably sparse, suggesting that the warriors were provided with their food from elsewhere (Wigh 2001; Ahlsén 2004; cf. also Hansson 1997 & Frostne 2002). In a forthcoming study, Sven Isaksson discerns that when

comparing domestic animal bone deposits in the surrounding region, the Garrison accords with a local contemporary aristocratic farm (Granby-Hyppinge), and is more closely in accord with rural evidence than to some of the earliest urban sites (Isaksson in print). An interpretation of these results could be that the Garrison had a food supplier other than Birka town.

A dietary analysis presented in paper VI was conducted on skeletal material from a number of Birka's graves. As the relation between the people in the graves and the warriors from the Garrison is quite uncertain, these analyses can only give indirect indications of the dietary status and differences between individuals in Birka. The results, bearing all uncertainties in mind, however show that the men in the weapon graves show a divergent dietary pattern, both in respect of intake of proteins and the geological origin of their food. In other words, the men buried with weapons, the possible warriors of Birka, ate other foods and had another pattern of movement than the other analysed individuals from Birka's graves. This general picture accords with the divergent dietary pattern indicated for the Garrison on the basis of osteological and macrofossil analyses.

Communal feasting and drinking

Another aspect suggested by the large amount of cattle bone in the hall building is that of sacrificial sacrifice. There is an over-representation of skeletal material from animal skulls and jaws, indicating that a type of sacrificial feasting took place (Wigh 2001; cf. Näsström 2002 chap. 11). Ritual slaughter and feasting in the hall building was an important part of the cult of Odin – the warrior's god *par preference*. During ritual slaughtering, the head of the animal was separated from the body and the blood was collected in a bowl. The head and blood were sacrificed to the gods while the meat was cooked and distributed to the participants (Dillman 1997; Nordberg 2003:182f). When institutionalised in the form of feasting, food becomes an aspect of power that is closely connected to the societal structure of lord and hird/king and retainer (Isaksson 2000:59). The character of early medieval battle, whereby the warrior was dependent on those who stood beside him in battle, enhanced the importance of communal feasting and drinking in order to bond the group together. The feasting, boasting and storytelling carried out in the hall of the warriors, as recounted in the saga material, can be interpreted as a need to express this 'martial reliability' (Halsall 2003:34).

Religion

Another aspect of motivation and reinforcement of the group is to be found in the beliefs and rituals of religion. There was a strong presence of paganism in the Garrison, and compared to other archaeological contexts in Birka it was expressively pagan. A number of amulets and other symbols of the Norse gods and mythology have been found, and there was a production of Thor's hammer rings in the smithy. These religious objects have been found in three separate archaeological contexts: depositions, manufacture and in the accumulated layers of the hall building – perhaps traces of everyday use. The latter include a number of simple iron Thor's hammers and an amulet ring with miniature sickles.

The spears of Odin

One of the most fascinating features with religious connotations in the Garrison is the spearheads that were deposited in different parts of the construction of the Garrison. Underneath the enclosing rampart as well as in different sections of the hall building, depositions were made of spearheads, both as single offerings and as part of an assorted deposition (Kitzler 2000; Arvidsson 2003; Nordberg 2003). Interpreted as symbols of Odin, these spearheads indicate that the whole area was consecrated to the warrior god. This interpretation is rather interesting as there are further implications in communicating with Odin than the obvious securing of protection and success in warfare. The strong presence of Odin's symbols in a warrior's hall alludes to the *einherjar* – the god's fallen warriors. These fallen heroes, though opponents in their earthly lives, on death became fellow fighters in the army of Odin, where they were expected to be loyal to each other, regardless of the past. According to Andreas Norberg, this perception could have its origin in real laws of conduct regulating the conditions in warrior societies. The warriors in the group should treat each others as brothers, taking an oath when entering the society never to raise arms against another member of the group (Norberg 2003:215 and references cited therein).

Ritual depositions in the hall building

At the central pair of roof-bearing posts in the warrior's hall, depositions were made during the construction phase of the hall building. The northern deposition is somewhat ambivalent archaeologically, as it was primarily excavated by Stolpe who did not her record any specific notes on the find-context. The traces of Stolpe's excavations were nonetheless easily detectable during later investigations when the soil was found to still carry quite a number of finds. The combined results of these investigations indicate a deposition by this post which also included a number of Islamic silver coins. The second deposition was undisturbed by later activity and presented an

interesting combination of objects representing both the individual warrior and the group, reflecting the activities of the Garrison (cf. Carlie 2004:174). An extensive amount of antler comb-case fragments, deliberately ruined before deposition are among the more puzzling artefacts in the deposition as there are no comb-fragments among them. As explained elsewhere, the cases have been interpreted as symbols of the individual warrior and their number approximated to 40, giving an indication of the standing troop of the Garrison (Olausson 2001:22f; Gustafsson 2003:15).

An Islamic coin dated to AD 922/923 provides deposition, and thus the building phase, with an approximate date in the middle of the 10th century (Rispling 1998). The overall impression of the deposit is however given by the varying types of religious symbols. The presence of Thor is seen in a small, simply decorated antler hammer, Odin is symbolised by two spear-heads, and an exclusive bronze sword-chape displays the Crucifixion-scene in a version adapted to a Northern public (Hedenstierna-Jonson 2002).

This strong religious presence could be interpreted as a wish to secure the help of different gods for the warriors and the Garrison itself. There is however an interesting twist to the particular representation on the sword-chape, and it is possible that its presence in the deposition should be interpreted in totally different terms. In paper II this sword chape has been interpreted as a symbol of office linked to the Danish court thus further increasing the symbolic connotations of the find. The mid to late 10th century constitutes a period in Birka when relations with South Scandinavia were on the decline, possibly due to political conflicts. Contacts with western trading posts decreased significantly in lieu of an increasingly dominant eastward expansion. Yet, during this period of declining contacts or even conflicts, a symbol of the Danish realm is deposited in the hall-building of the warriors of Birka. This was clearly a deliberate statement with an ambiguous interpretation. The fact that it was found in a deposition containing symbolic offerings from the individuals in the Garrison, could indicate that the warriors in some way were connected to the Danish realm of power. The depiction of a figure of Christ on the chape makes the chape a symbol of yet another religious power that may have been helpful in securing the Garrison area. On the other hand, the strong heathen expression in the Garrison, and the total lack of other objects related to the Danish kingdom, point to another line of interpretation. Perhaps the manifestation of heathen fervour should be seen as an expression of resistance against the rise of Christianity, an expression that did not require complete polarization away from all aspects of the new religion (for a recent contribution on early Christianity in Birka see Trotzig 2004). The Birka warriors distanced themselves from some group of Christians for political rather than religious reasons. The deposition of a symbol

of the Danish power realm and its Christian king Harald Bluetooth could thus be interpreted as a sign of defiance against it and possibly constituted an attempt to render that power harmless. Deposited together with symbols of the active warriors, the chape may be interpreted as neutralised and without power (Hedenstierna-Jonson 2002; Hedenstierna-Jonson & Holmquist Olausson 2006).

FIGHTING TECHNIQUES IN RELATION TO THE FORTIFICATIONS OF BIRKA

Dominance and defence

Birka was situated in an ideal position to control the waterways, the fortifications on the island were built as an integral part of the settlement right from the start and developed as the town expanded. Even though the first fortifying structure was smaller in scale and weaker than the surviving remains suggest, its existence was an absolute prerequisite for trade at Birka (cf. Gustin 2004:264). The fortifications signified that well-equipped and well-trained warriors lived at Birka in addition to the civilian inhabitants. The presence of professional warriors represented organised power and a strong ruler inserting a level of trust in the trading-activities in the town. In early medieval Europe, fortifications constituted vital elements in the conquest and pacification of new lands located in border zones where tribute and plunder from conquests were the backbone of the economy (Leyser 1982:49, 88ff; 1994:33). These strongholds acted mainly as bases from which attacks were launched rather than as defensive structures.

The dominant impression from the martial structures at Birka is, as noted, fortification. Their strategic role has hitherto evoked scepticism, as they seem to have been difficult to defend. The many openings and the length of the town rampart have been considered severe weaknesses in their defensive function.. The strategic location of the Garrison, in the steep slope leading up from the water to the hillfort, has also been a subject of discussion. The root of this problem I think is in regarding the fortified structures as primarily defensive. Instead, and in correlation to contemporary strongholds and fortifications in Europe, they should be regarded as tactical bases for offensive warfare.

In the historiography of western European warfare, the Northmen were renowned for their ability to build and use fortifications and fortified bases in a manner characterised by military historians as 'elastic'. The strongholds

and defended camps could be used to hamper or provoke the opponent into unwise tactics, awaiting the right moment to launch a counter-attack. There are even accounts of when fortifications were used as traps as the Northmen lured their opponents into penetrating the defences at which time they were surrounded and killed (Halsall 2003:156, 206f; cf. Christiansen 2002). The importance of fortified structures in 'Viking' warfare has led Eric Christiansen to include the spade when enumerating the keys to their success. Christiansen maintains that the skill of the Northmen rested on a long and impressive tradition of hillfort construction, a tradition that was supplemented by a younger tradition of linear fortification, i.e. ramparts (Christiansen 2002:177f). The most renowned rampart erected during Viking Age is the impressive *Danevirke*, situated in northern modern Germany. But there are other examples. The battle of Repton in Derbyshire, England, is said to be the result of an occupation of a Danish army in AD 873–4 and has left two quite visible traces in the terrain, a large burial mound and a rampart. The rampart encloses a space between the river Trent and an Anglo-Saxon church, and has been identified as the *wintersetl* of their campaign (Biddle & Kjølbye-Biddle 1997).

The active use of fortifications by the Northmen shown in Continental contexts is strangely absent in domestic contexts, and one of the major aims of the project *Strongholds and Fortifications* was to explain this lack of Viking Age fortified rather than defensive structures. There are however some few examples of fortifications which were formerly overlooked, including a rampart of some measure, the longwall *Götaverket* (3 km) in Östergötland, Sweden. This has been excavated within the scope of the above project (Stjerna 1999). The rampart has been set in context with pile-works that hindered free passage from the Baltic into Östergötland's inland. Together, these structures were part of a large-scale political and military effort aimed at controlling East – West communications during the Viking Age (Olausson 2000:144ff). A similar large-scale fortified structure has been proposed with regard to Birka, where an outer line of defence has been identified controlling the southern inlet of Lake Mälaren (Olausson & Lindström 2003). When the focus is lifted from the immediate context of the island of Björkö, the aptness of Birka's fortifications becomes clearer. It is in this wider discussion of offence and defence, that the warriors of the Garrison and their weaponry and fighting technique should be viewed.

Archery and horses

Archery was perhaps one of the most important warfaring techniques in the active defence of Birka. The long range of the bow and the impact of repeated showers of arrows, filled many of the needs in the type of warfare that probably took place in Birka and around the island of Björkö. Archers placed in ships and on the battlements could commence the attack or defence. The extensive amounts of arrows in the latest stage of the Garrison prove the importance of archery. The construction of the battlements and parapet of the hillfort also indicates that strategic planning included archers and that these could be deployed facing towards the outside or inside, in accordance with those tactics recorded as used by the Northmen, whereby attackers were allowed to fight their way through the defences within which they were then trapped and killed (Halsall 2003:206f). This type of war tactic highly motivated the use of the composite bow, even if not from a mounted warrior as originally intended: the accuracy and swiftness of this Eastern archery technique provided a useful addition to traditional Northern archery in battles of this kind.

Thus the composite bow and the oriental mounts found in the Garrison have been characterised as key evidence in the question of the identity and cultural affiliations of Birka's warriors (Hedenstierna-Jonson & Holmquist Olausson 2006). Together with the rest of the weapons and equipment, the mounts help to define the complete attire of an Eastern warrior, thus revealing a close connection with the mounted warrior of the steppe nomads (cf. Gorelik 2002:145). The complexity and repetitiveness of the panoplies (complete sets of armour) found in the Garrison indicate that their equipment at least to some extent was in accordance with the fighting technique of the mounted nomadic warriors. The use of the composite bow as suggested above supports this assumption. Still, there were obvious differences – in culture and way of living. The itinerant lifestyle of the nomads was replaced by a more stationary life and there is a great difference concerning the most important symbol of all of nomadic life – the horse.

A classical example of nomadic warfare technique is described by the Islamic historian Al-Masudi in his vivid account of the battle between the Magyars and the allied Bulgarian-Byzantine army in 934. “*The Hungarian mounted troops attacked the main Byzantine army and showered them with arrows ... Not for a moment did they cease to shoot vigorously with their arrows, and all the while the mounted troops kept circling them as a mill-wheel*” (Al-Masudi § 496 1962:178f; Engl. transl. Hidán 1996:42). By continuous showers of arrows, the enemy was forced into a disorganised charge and when they thus opened their flanks they were surrounded by the nomadic troops that extinguished them with their incessant shooting.

Another stratagem of steppe nomadic origin, and practised by medieval forces in western Europe, was the well-known trick of feigned flight (Hidán 1996; Nithard describes the feigned flight performed in the battle at Worms in 842; Halsall 2003:118, 189). These distinct forms of warfare technique, both required extensive training, but also suitable terrain, and though the Birka warriors surely were accustomed to the tactic of the feigned flight in both theory and practice, they could probably not, for other reasons, use the more advanced forms of nomadic mounted warfare.

In the particular case of the composite bow, it is highly probable that the warriors from Birka's Garrison could utilize it when mounted, and even if horses not were employed in the battle of the Garrison, these warriors were trained in the art of mounted warfare and accustomed to the use of cavalry in a battle situation. At the time of the Birka warrior, the Northmen rested upon a long and continuous tradition of mounted warfare, and according to Erik Nylén and Bertil Almgren there was knowledge and even use of the composite bow ever since the 5th century, when they came in contact with the Huns (Almgren 1963; Gamber 1968; Nylén 1982; Nylén & Schönback 1994; Engström 1994; 1997; 2001).

The Gruesome end

The archaeological context of the Garrison shows that it came to a gruesome end in the late 10th century. The area was attacked from the water, several rounds of arrows were fired, including incinerating arrowheads setting the hall building on fire. The finds and their distribution indicate that fighting was fierce at least in the Garrison area. The hillfort does not display the same amount of discarded weaponry but the battlements of the rampart were burnt down, possibly on the same occasion.

A reoccurring question has been why so much was left behind on the site. Why it was not scavenged directly after battle. Different theories have been presented. Andreas Nordberg discusses the taboo of the battleground and the transformation after battle of the area into sacred ground (Nordberg 2003).

I find it most likely that the place was scavenged, in likeness to many of the burials, and that what is left is only a fragment of what once was. Only the broken shreds were left, and the objects too small for scavengers to find in the debris of the burnt-down building. Casualties were removed and buried elsewhere as no human skeletal remains have been found in this context.

It is not possible to discern if the weapons and equipment left on the site belonged to the warriors from the Garrison or the attackers. The expressively eastern influence is nonetheless present even in the accumulated archaeological contexts, indicating that at least some of the weapons derive

from the Birka warriors. The belt set of Volga-Bulgarian origin was most likely something that belonged to an occupant of the Garrison indicating that the other isolated Oriental style mounts were also part of Garrison warrior dress.

5. RUS', VARANGIANS AND NORTHMEN

So far, this study has concentrated on the material manifestations of a particular and definite group of people – the warriors from Birka's Garrison – in their closest context, the trading post of Birka. Undisputedly these warriors acted in a broader context than that of this particular trading post. In order to understand the role, function and context of Birka's warriors it is necessary to step aside from the site of the Garrison and try to attain a wider perspective. The wider perspective in this case involves a number of difficulties as the closest analogies are geographically dispersed sites not representing homogenous communities with established history and traditions, but newly founded societies based on warfare and trade.

BIRKA AS AN ANOMALY – AND ANALOGY

As stated in the Introduction, the people of the Scandinavian peninsulas shared a common (Northern) culture and as a group could be regarded as Northmen or people from the North. It is equally clear according to Alfred Smyth, that contemporary Northmen recognised differences between, and divisions within, their own cultural and political sphere (Smyth 1998:27). In order to advance in our interpretation and understanding of the Northmen and their geographical expansion during the Viking Age, we need to recognise these differences, which they themselves were well aware of, and to study their activities “subdivided into separate geographical zones, each with its own chronological subdivision” (Näsman 2000:1). This is important to emphasise in the context of the settlements linked together by trade, and particularly relevant in the comparison between Birka and Hedeby.

Hedeby and the Danish ring fortresses

Situated in the borderland between Northern Germany and Denmark, the trading post of Hedeby (Haithabu) has been characterised as the gateway to western Europe. Sometimes regarded as the larger sister of Birka, Hedeby was comparable in structure, with a town-area situated by the waterfront

and enclosed by a semi-circular rampart supplemented by pile-works in the water. Nearby, the hillfort *Hochburg* overlooks the town, like its counterpart in Birka containing graves but lacking traces of settlement. So far the two settlement-sites seem parallel, but there are also differences, underlining divergent functions and divergent chronological development. Hedeby must be seen in context with the great fortified structure the *Danevirke* and the fact that the area it lay in constituted a point of conflict, being a border zone between the Danish and Saxon power-realms. Regional political turmoil placed the trading-post in the hands of different powers during the 10th century and it seems to be at this late date that the settlement was fortified (Jankuhn 1984:198ff). The development of Birka where the fortifications were built simultaneously with the foundation of the settlement and strengthened in the late 9th to early 10th century is not paralleled by the development of Hedeby. While the fortified structures at Hedeby seem to be in answer to continuous power-political conflicts, the Birka construct reflects a different threat that in my opinion was to more related to the internal activities of Birka.

There are even some differences obvious in the grave material. The burial customs in both Birka and Hedeby include chamber-graves with inhumation burials, but whereas these burials in Birka were uncommonly rich with many foreign objects among the grave-goods, their Hedeby counterparts mainly contained spear and shield (Jankuhn 1986:109f).

Some of the most notable military structures of the 10th century, are the Danish ring fortresses. With striking consistency, these fortifications were built according to a geometrical plan, forming an exactly circular fortress with one opening in each of the cardinal points of the compass. Dated by dendrochronology to the years AD 980–981, they have been ascribed to the rule of king Harald as an expression of his intensification of centralised power (for different interpretations of the function of se fortresses see Weibull 1974; Olsen & Schmidt 1977; Roesdahl 1987; Skaaning1992).

The Danish ring fortresses are, like Birka's fortified structures, an expression of the power-political situation during the second half of the 10th century. But while the ring fortresses reflect the growing power of a centralised state, possibly ridden by civil war, or arming for the conquest of other lands, Birka's fortified structures are directly linked to the activities and contacts of a trading-post.

It is noteworthy that there was a connection, or rather a disconnection, to the Danish realm present in the Garrison and in Birka during the 10th century. One clear example is the symbolic action of the deposited sword chape but there is also a general absence of artefacts that could be linked to the Danish (see also below). An important role in the development of great

styles, as mentioned above and further discussed in paper II, was played by the highly skilled craftsman who in the service of a ruler or king improved and reinterpreted stylistic traits, thereby creating a signet for this ruler. An example of this is the so-called Hiddensee style which has been considered a house style of the Danish court in the late 10th and 11th centuries. This highly refined style has been linked to the Jellinge kings, around whom a centralised power emerged displaying forceful military and political expressions of power. Hiddensee is not actually a particular style but rather a manifestation of advanced craftsmanship interpreting a number of Late Viking Age styles. Founded on the traits of the Jellinge and Mammen styles predominant in southern Scandinavia, Hiddensee also incorporated typical Borre-animals, proving that craftsmen used a wider array of patterns and stylistic expressions than the traditional studies on style suggest. Objects decorated in Hiddensee style have been retrieved from the fortifications of Trelleborg and Fyrkat, but also from the extravagant grave-goods of King Gorm's grave in Jelling, and in the grave of the Mammen chieftain. There are no examples of Hiddensee in Birka, emphasising the breach in relations between the Danish realm and eastern Sweden during the late 10th century. In eastern central Sweden, the occurrence of South-Scandinavian styles is continually scarce, with the exception of a small number of objects in Hiddensee retrieved in Sigtuna – possibly indicating renewed political contacts (Karlsson 1983; Jansson 1991; Wilson 1995).

A comparison in numbers

The unique character of the Garrison becomes especially clear when comparing the find material to that of similar fortification-contexts such as the ring fortresses. The finds from the Garrison stand out somewhat in character but first and foremost in the sheer quantity of objects. In the case of the ring fortress of Fyrkat, the scarcity of finds, in combination with the complete lack of dirt and refuse, has even been interpreted as signs of 'army drill'. The one major find category, apart from potsherds, was whetstones, something that has been interpreted as remains of "military occupational therapy" (Olsen & Schmidt 1977:100, 219). The find material from the ring fortress of Trelleborg is more extensive than that of Fyrkat and includes weaponry as well as tools for farming, textile crafts and female dress (Nørlund 1948). The excavated area of Trelleborg is approximately seven times that of the Garrison, and keeping this in mind, the comparison even further emphasises the unique character of the latter. The comparable types of weapons are those accounted for in Poul Nørlund's report on the Trelleborg excavations (1948). Nørlund notes that the finds are typical for a set-

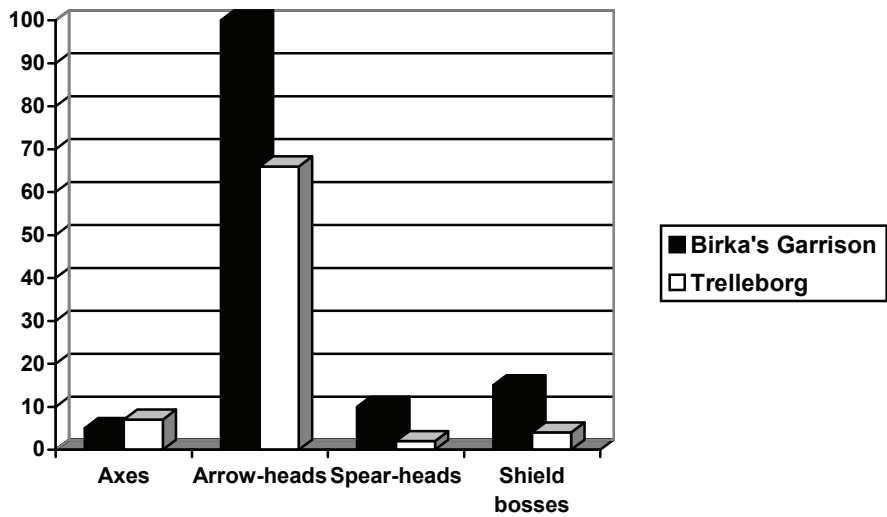


Fig 8. A comparison of weapons in absolute numbers between Birka's Garrison and the ring fortress of Trelleborg in Denmark. (Based on Nørlund 1948 and Kitzler 1997, Hedenstierna-Jonson et al. 1998, Holmquist Olausson & Kitzler Åbfeldt 2002 and unpublished data from the excavations of Birka's Garrison 2000–2004.)

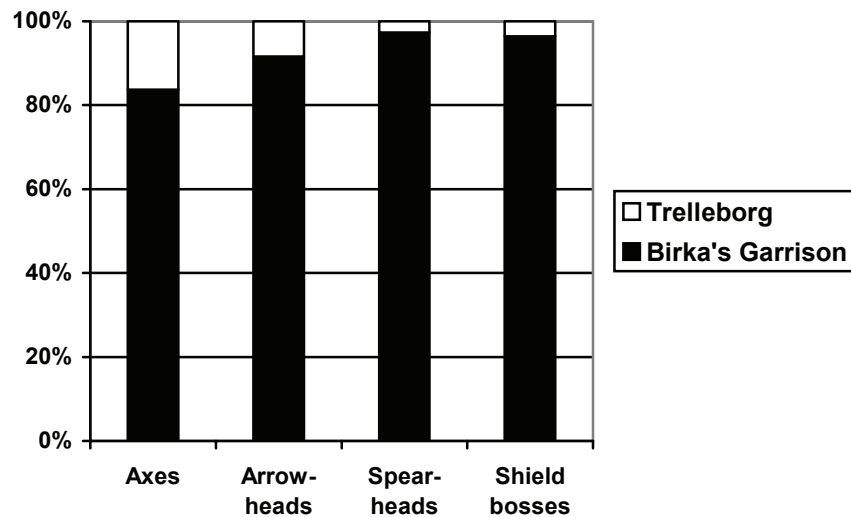


Fig 9. Weapons in absolute numbers weighted/m². (Based on Nørlund 1948 and Kitzler 1997, Hedenstierna-Jonson et al. 1998, Holmquist Olausson & Kitzler Åbfeldt 2002 and not yet published data from the excavations of Birka's Garrison 2000–2004.)

tlement context and show that agriculture was carried out from the fort. The “typically feminine articles” also show that the fortress was not inhabited only by men (1948:279f). The Garrison on the other hand shows no indication of typical female activity or any female presence. The find material points to the martial sphere and the large extent of this material is proof of the intensity of the activities that took place on the site (fig. 8 & 9).

Eastern analogies

There was a significant change in Birka’s trading contacts sometime in the late 9th century. During Birka’s earlier phases, the town’s interests and contacts were directed towards Dorestad, western Europe, and the areas south of the Baltic. But the late 9th century saw the arrival of something new. There was a sudden decrease in western European imported goods and an equally drastic increase in East European artefacts (Ambrosiani 2002:228; 2002b; cf. Gustin 2004:194f). There were two main routes of trade through the area of Ancient Russia. The route following the river Volga, which attracted the Northmen’s interest at first and led by way of the Volga Bulgars to the Caspian Sea and the Islamic world. Turning south in the late 9th century, the Northmen followed the river Dnjepr to the Black Sea and the great Byzantine city of Constantinople. Along both routes, settlements emerged displaying a number of significant similarities. They were all more or less fortified settlements with many Northern features and a considerable military presence. Travelling by way of the Gulf of Finland, the first settlement to be met, and the one with the first signs of Northern activity, was Staraja Ladoga. Other places of interest were Rjurikovo Gorodišće, Timerëvo and Sarskoe Gorodišće on the Volga route which display relevant parallels to Birka, both in material culture and in structure (fig. 10). As interest was in part redirected to the Dnjepr route during the second half of the 9th century, the settlements of Gnëzdovo, Šestovica, Cernigov and Kiev developed even closer parallels to Birka and perhaps more particularly the Garrison and its warriors (Hedenstierna-Jonson in print and references cited therein). Emphasising the uniformity with which these trading posts were conceived, they were all referred to as *Garðar* in old Norse. Hence *Garðar* was not one particular site but several “multi-ethnic trading and handicraft centres” (Noonan 1997:144f) and the word *Garðar* was also used in reference to the whole region in which these trading posts were situated (cf. Jesch 2001:94).

In paper III the distinct similarities of some of these settlements are discussed within the context of the strong military aspects of these sites. A connection is illustrated by the distribution of falcon sword chapes which, as earlier mentioned, have been linked to Birka and its warriors (Strömberg

1951; Ambrosiani 2001). The drive behind this eastward expansion is much debated and there are two prevailing lines of opinion, one emphasising agriculture and colonisation, the other trade and the search for silver (Jansson 1987; 1997; Nosov 1993; 1998; Callmer 2000; cf. Gustin 2004:74ff). It is quite possible that the character of these settlements along the rivers of Ancient Rus' was multifaceted, and recently the Russian scholar Valerij Sedykh has argued for a transformation of the site of Timerëvo from an agricultural settlement to trading-post, early in the 10th century (Sedykh 2000; Sedykh 2006). There are indications of an increase in movements along the riverways and an intensification of trade, starting in the end of the 9th century which coincides with an account in the Primary Chronicle reporting strife between different Rus' leaders (Russian Primary Chronicle, *sub anno* 862). Even if this account should not be treated as an actual fact, the archaeological evidence does seem to provide signs of turbulence during this period. Staraja Ladoga, which in a way constituted the entrance to the river-route, was fortified and the fortified settlement of Sara (Sarskoe) was enlarged with a garrison displaying several parallels to the Birka Garrison in terms of martial material culture (cf. Noonan 1997:144f; Kazanski et al. (eds.) 2000; Hedenstierna-Jonson in print).

Sites such as Birka, Gnëzdovo, Rjurikovo Gorodišće and Timerëvo grew outmoded when a new political structure developed that was better anchored in the local region – a development that is related to and contemporary with the introduction of Christianity. This change took place at the turn of the first millenium and resulted in the emergence of new centres of power, administration and trade, with clear Christian connotations, e.g. Sigtuna, Smolensk, Novgorod and Jaroslavl' (cf. Nosov 1994:192; Androshchuk 2000; 2001; Hedenstierna-Jonson in print; for a short synthesis on opposing views see compilation made by Jansson 1997:25f).

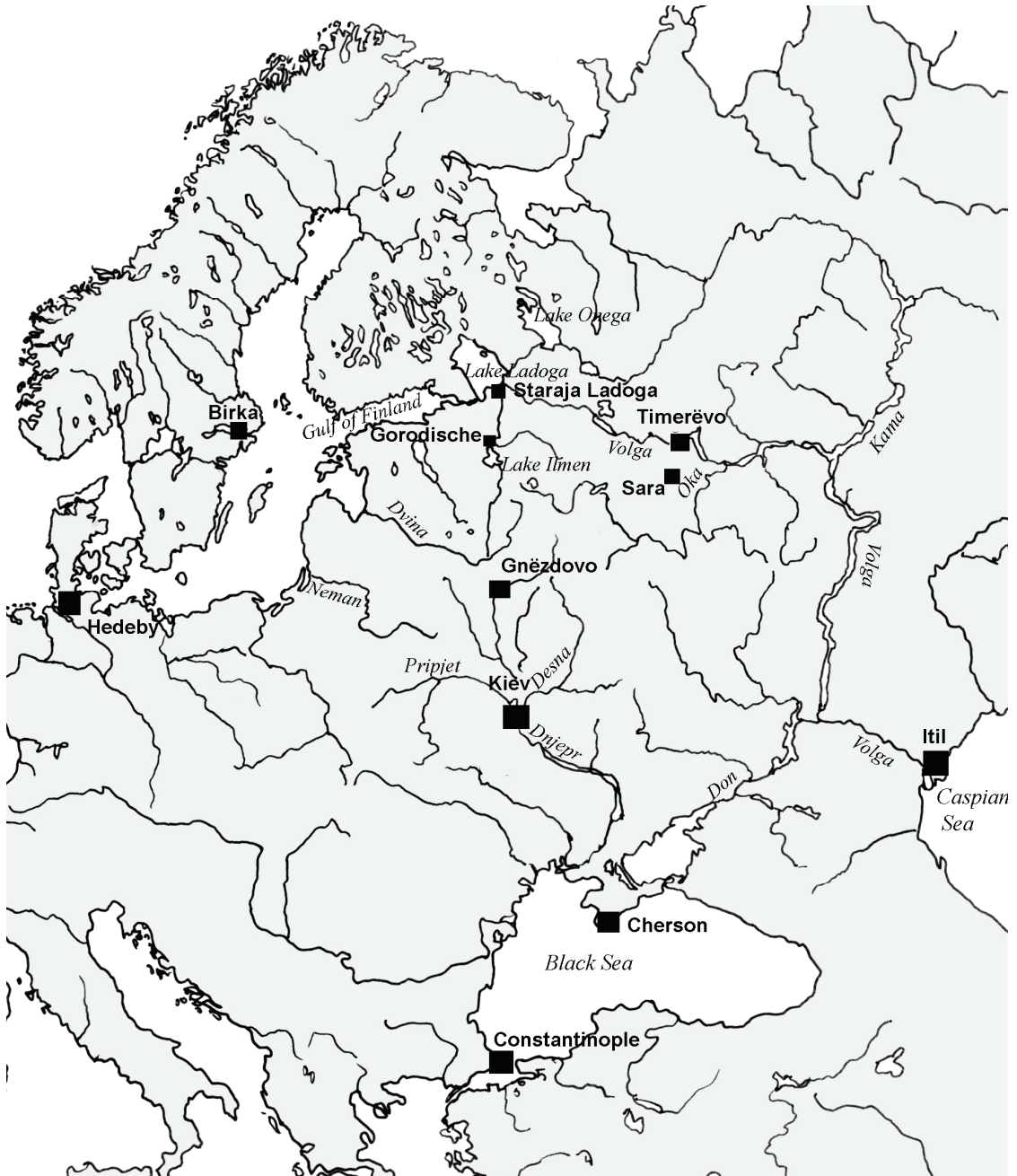


Figure 10. The Eastern trade route in the Early Middle Ages (map by C. Hedenstierna-Jonson).

RUS' IDENTITY

The contemporary Islamic writers made a clear distinction between the Rus' and the neighbouring Slavs in every respect "from clothing to lifestyle and activities". There are descriptions of the elaborate dress of the Rus', with caftan-like coats and wide trousers, while Slavs are said to have worn linen shirts and leather boots (Androshechuk 2004:37). Dress is and has been a bearer of identity, and even if the extravagant outfits of the Rus' perhaps were not for everyday use, this group of people nevertheless distinguished themselves by forming a particular identity. The Rus' identity is the subject of Simon Franklin's paper "The Invention of Rus(sia)" (1998). Defining Rus' identity, according to Franklin, is also about defining what Rus' identity was not. He delivers three statements on the issue: Firstly, the Land of the Rus' was, in a sense, not "medieval" as the "Middle Ages" incorporates their beginning. The Rus' were a new people. Secondly, no common ancestry defined "the new people". There was no ethnic exclusivity. On the contrary, the freshly contrived identity was explicitly synthetic, designed to assimilate originally heterogeneous components. Thirdly, the Land of the Rus' was not necessarily defined by a fixed geography (Franklin 1998:187). In accordance with Barth, I consider the common identity among the Rus' to be based on shared values and judgements and that Rus' identity was reconciled and validated through the performance of accepted modes of behaviour (Barth 1969b:120ff). Though consisting of individuals from different ethnic groups with varying cultural backgrounds, there was a concept of a Rus' society. However disparate in origin, together, they formed a society with a strong sense of 'us'.

Varangians

An ambiguous and often slovenly use of the designations Rus' and Varangian has created a confused terminology, often equating the two. Already in the Russian Primary Chronicle there was reference to both without further distinction. In an effort to use the terms in a stringent way, at least within the limitations of the present thesis, my definitions are based on accounts given in the Islamic sources where Varangians and Rus' are portrayed as two different groups within Northern eastern martial society (Al-Masudi §460;). While the Rus' consisted of men, women and children and formed a community built on warfare and trade, the Varangians were groups of warriors serving in the retinues of different princes and rulers, even the emperor of Byzantium. Sigfús Blöndal has interpreted the term Varangians as "men who plight each other troth, who enter a fellowship" (Blöndal 1978:4). The famous Varangian guard of the Byzantine emperor was formed by Emperor

Basil II the Bulgar-Slayer (AD 963–1025), though there is even earlier mentioning of the Rus' serving in Byzantine military operations (Treadgold 1992: 112; 1995:79).

An 11th century account of what I would define as Varangian warriors is that of Byzantine ambassador Michael Psellus. Psellus distinguishes their skills and abilities when giving an eye-witness account of Frankish and Varangian warriors in the service of rebel general Isaac Comnenus. While both groups are portrayed as “men of fearful appearance, dressed in fearful garb, both alike glaring fiercely about them”, Psellus also stresses the differences in noting that the Franks painted themselves and plucked their eyebrows while the Varangians preserved their natural colour. There were also differences in their way of fighting. The Franks “made their attacks as the spirit moved them, were impetuous and led by impulse /---/ their first onslaught were irresistible, but they quickly lost their ardour”. The Varangians on the other hand were “mad with fury /---/ less impatient, but fought with unsparing devotion and complete disregard for wounds” (*Chronographia*, trans. Sewter using Shepard's additional explanatory comments from 1992:-292, though Shepard uses the term Rus').

Birka warriors

If we accept Franklin's statements on what constitutes Rus' identity, in what way does this apply to the warriors from Birka's Garrison? The answer is in the full picture, in the complexity and at the same time homogeneity of the material culture. The Garrison displays a material culture that was intended for use and as such it was predisposed to be functional. The warriors in the Garrison were not mere receivers of imported prestigious goods that held the function of being exotic or high status symbols. They were very discriminating users of these goods, and well aware of both the functional use and the symbolic value of the objects. This suggests that the warriors in Birka's Garrison actually identified themselves with Rus' culture, something that however does not automatically mean that they were of a different geographical or even cultural origin than the other inhabitants of the area. The differences between the warriors in Birka and the people living in the Mälär Valley region and other parts of eastern Sweden, may not have been cultural but, as Siân Jones puts it, “rather a consciousness of difference reproduced in the context of ongoing social interaction” (Jones 1996:71). In other words and in accordance with Jones' definition, the Rus' formed an ethnic group and set themselves apart from the people they interacted with in that region. In the absence of actual cultural or geographical differences, the Rus' identity had to be expressed in their material culture, in which they could manifest their particularity.

Seen in the light of the military organisation of early Kievan Rus', there is a resemblance between Birka's warriors and the warriors of the Druzhina. They are both closely connected to their lord, prince or king, and even though they were quite mobile, they probably did not live the itinerant lifestyle of the mercenary or Varangian. Their close connection to a specific ruler or lord is an important factor, but so too was the fact that there was a society connected with the warriors, a community with families and other functions than warfare. It is highly unlikely that the Birka warrior was modelled on the Druzhina. The Druzhina developed during the later part of the 10th century, as did the Birka warrior of the Garrison. They are both expressions of late 10th century military structures, equal in their own right, and with roots in an older Northern military system. During the later part of the 11th century and into the 12th, the Varangians became more closely knit to the prince of Kiev, and were also in service in Byzantium. A small number of 11th century runic inscriptions tell of men who died in battle East in Garðar, and to quote Judith Jesch "it is very likely that the men commemorated in these inscriptions were active as mercenaries for the rulers of Novgorod and Kiev" (Jesch 2001:96). Men who died in the land of the Greeks or among Greeks, i.e. in Byzantium, are more often referred to in the runic material, reflecting the continuous wars against Byzantium during the 11th century. Even if the activities of these men rarely are specified, they most likely served in the renowned Varangian guard of the Byzantine emperor (cf. Lindkvist 1988:43f and Jesch 2001:99). The many accounts of warriors on the runic stones have led Mats G. Larsson to contemplate that "central Sweden's most important export during the 11th century was battle-worthy men" (Larsson 1990:133).

The network of Rus' trading posts inhabited essentially by people from the North and sharing a common culture, facilitated travel along the eastern trade-routes. The loose-knit character of the Northern martial organisation would have enabled a high level of mobility even for the warriors. The lord of the Birka warriors may well have been the Svear king, but it is not unlikely that their fluid organisation allowed the warriors to take commissions for a limited period of time, acting as an armed guard for groups of merchants engaged in long-distance trading expeditions. To serve as an armed guard or convoy aimed at trading in the Volga Bulgar areas or even as far as Constantinople, would have provided the opportunity to see 'action' and gain both reputation and riches. In a trading network like that of the Ancient Rus', finding new assignments along the way or on the return route, would not have been a problem.

To provide travellers with armed escorts was a task given to local officials by the Norman rulers of Regno in the early 14th century. In return, the local officials were authorised to collect tolls (Spufford 2002:219). The medieval organisation of the Hansa is even said to have similar roots, the term Hansa being suggested as having its original meaning as “armed convoy” (Dillard 1967:24; Lopez 1971:114).

In some support of this, mention should be made of a runic inscription found in the Ukraine. The inscription tells of Grane, who had the memorial (*hvalf*) made after Karl his fellow (*fēlagi*). The term *fēlagi* has often been generalised to friend/comrade but the actual meaning is rather ‘joint property’. Thus the term has been interpreted as both fellow-in-arms and fellow-in-trade, the exact meaning conditioned by each individual inscription (*Danmarks runeindskrifter* 1942:649 *fēlagi*; Peterson 1989:14 *fēlagi*). This, the only runic stone in eastern Europe, was found on the island of Berezan, an important stop on the trade route from Scandinavia to Constantinople (Arne 1914b; Jansson 1963:63f; Jansson 1992:309).

CREATING A CULTURAL EXPRESSION

The cultural identity of the Rus’ and their relations to the geographical region within which they moved, are of great importance for further understanding the network of trade and political alliances that stretched from Birka to Kiev or Constantinople. The Rus’ culture was based on trade, travel and warfare, where warfare created an ideological superstructure that affected all, warrior or not. This ideology became the foundation for the world of ideas, morals, expressions, etc. of this society. This cultural expression was maintained throughout a vast area by exceptionally close-woven contacts, which was not necessarily unproblematic.

The manipulation of cultural behaviour, symbols, and material culture, is one of the many mechanisms used by societies to distinguish themselves *vis à vis* others. In the formation process of a new society, symbols were chosen and altered to represent the desired self image of the members of that society. The thesis delivered by Michèle Hayeur Smith related to the Icelandic *landnám*, concludes that “ultimately with time it was the selection of symbols of identity that led them [the settlers] to define themselves as Icelanders”. That situation bears a strong resemblance to the situation during the eastward expansion. Roughly contemporary, the Icelandic *landnám* constitutes an interesting comparison when studying the use and reinterpretation of material culture by a newly establishing society. The one category of symbols particularly studied by Hayeur Smith is dress and adornment

(Hayeur Smith 2004:21). The overall resemblance between the material from 10th century Birka, especially the Garrison context, and the material from ports of trade in Ancient Rus' begs the question of a shared identity and cultural affiliation among the inhabitants of these settlements.

A typical Rus' stylistic expression?

As Barth has stated in his oft-cited work from 1969, ethnicity consists of the subject boundaries created by the group (Barth 1969:15). Identity is a projection of the individual's self-image and the image of the group. The need to stand out is especially strong when the group is newly formed, heterogeneous in composition and geographically dispersed. Art is a medium, negotiating cultural boundaries, constituting visual indicators specific to each culture, and when a group of people need to relate to another group or culture the use of ornamentation increases (Lager 2004:147, 150f).

The Rus' as a group, developed an expression of their own adapting the material culture of other groups in new contexts and combinations. A mix of styles and objects merged together, forming a Rus' material culture. The combination of objects and styles from different cultures and geographical areas was redefined and further developed in the workshops of the Rus' trading posts. What motivated the choices of the different elements that form the entirety? The aim most likely was to express an image of what was considered powerful, successful, and highly desired, possibly spiced with a touch of the exotic.

The Oriental style

One feature of Rus' expression, and the main topic of paper IV, is the so-called 'Oriental style' found in Ancient Rus' as well as in Birka. Usually the term Oriental style alludes to the stylistic complex based on palmettes and scrolls designed in concordance with art from Islamic areas. It constitutes a foreign element in northern art and style during the Viking Age and is regarded as an import from eastern territories. While the name derives from Ture Arne and his important work on Sweden and the Orient (1911; 1914) there is no actual consensus as to place of oriental origin. The issue has been dominated by the discussion concerning the origin of Birka's oriental dress customs. Inga Hägg considers the silk and metal braids found in Birka's graves to be evidence of an oriental court dress related to the Byzantine Empire (Hägg 1983; 2002; 2003). Ingmar Jansson instead emphasises the steppe nomadic and Persian impact on Birka dress, reflecting a generalized oriental cultural influence (Jansson 1977:391; 1988:605). This cultural influence was not limited to the import of prestigious objects but, according

to the results of paper IV, included a certain degree of intake of ideas and values as well. The oriental style is a composite style including ornaments, dress, equipment, weaponry and possibly ideals and practices (Hedenstierna-Jonson & Holmquist Olausson 2006). To my mind, this style which integrates Persian, Islamic and steppe nomadic traits, originated and developed in the trading posts along the rivers of Ancient Rus' during the late 9th and 10th centuries. The oriental style developed the image and allure of the exotic and reflected the need for a cultural expression exclusive to the inhabitants of these geographically dispersed trading posts. It is not only ornaments that exhibit these orientalist features, but even dress and military equipment. It is possible to interpret this as the will of the Rus' to identify themselves with a warrior ideal and martial organisation inspired by the successful steppe nomads and the superior Byzantine army.

Borre – the Northern contribution

The main Northern contribution to the Rus' style complex, was the great Viking Age style, called Borre. The style was widely dispersed throughout the geographical area wherever the Northmen acted and Birka has been suggested as one of the main centres of manufacture (Wilson 1995). The style was actively used during a time period ranging from the middle of the 9th century to the end of Birka time and can be found on a number of different categories of objects. The use of the Borre style in the material culture of the warriors comprises the main topic of paper V, where it is suggested that the ornamentation has apotropaic qualities applicable to martial contexts. There are other connections between Borre and the warrior in that the ribbons and knot-work that form vital elements in the style can be interpreted as alluding to binding as a metaphor for killing and death (Domeij 2004; Hedenstierna-Jonson accepted).

The emphasised role of stylistic expression and symbols representing Scandinavia, most likely played an important part in the Eastern expansion, as marked differences in behaviour, according to Barth, constitute a means to persist as a significant unit (Barth 1969). Particularly interesting is the ambiguity with which the Rus' treated the Northern stylistic traits. While extremely open to new influences and incomparably adaptive, they were at the same time carefully preserving the Northern expression, possibly as a symbol of the Northern way of life. Borre represents the last period of pagan Norse art, and when change came at the turn of the century 10th/11th century, Borre was replaced by other Christian influenced Northern art-forms in Scandinavia, and Christian art in Ancient Rus'. Even this could be interpreted as an articulated choice, emphasising Northern values and way of life in comparison to the new religion and its expressions.

Byzantine reflections

Birka in general and the Garrison in particular, hold surprisingly many objects displaying Byzantine traits. That these features are present even in the settlements in Ancient Rus' is perhaps less surprising as there was a well-known and closer documented connection between e.g. Kiev and Constantinople. But how is this material to be interpreted in Birka? Is it a result of contacts or influences direct from the powerful Byzantine Empire or mere reflections, sifted through a series of other cultures and contacts? The objects showing the most certain Byzantine origin are the copper coins minted during Emperor Theophilus' reign (829–842). Out of the 20 Byzantine copper coins that have been found in Swedish Viking Age contexts only six are from the reign of Theophilus. Three of these were retrieved in the Garrison and one in Birka grave Bj632 (Arne 1946; Jonsson 2001:30; Hedenstierna-Jonson & Holmquist Olausson 2006:19). These coins constitutes a thought-provoking link to the written sources, as the first evidence of direct contact between the Rus' and the Byzantine Empire occurs in St Bertins' account for AD 839, in the context of just Emperor Theophilus (*Annals of St Bertin, sub anno* 839; Hedenstierna-Jonson & Holmquist Olausson 2006:9). The circumstances surrounding the Theophilus coins are highly uncertain and the coins were more than one hundred years old when they ended up in the Garrison. Still they provide a sign of continuous contact with the eastern Roman Empire, something that has left other traces in Birka and in the Garrison material.

The heart of the discussion concerning Byzantine influences concerns certain elements of dress that according to Inga Hägg indicate knowledge of the Byzantine model of hierarchy and of the detailed dress code that came with it (Hägg 2002; 2003). With the helmet-mounts and the lamellae finds from the Garrison excavations, the question is once again brought to the fore. Lena Holmquist Olausson and Slavica Petrovski (in print) have shown that even though there is a clear Byzantine influence visible in the decoration of the helmet mounts, they were not manufactured in an imperial Byzantine workshop. As for the lamellar armour, both Byzantine and central Asian provenience have been claimed. Consequently much effort has been put in trying to establish the exact point of origin of the Byzantine elements found in Birka. This may well prove an impossible task as there might not be only one original place of manufacture.

Byzantium made frequent use of mercenaries, allies and auxiliaries in the border-zones of the Empire. A piece of lamellar armour in a Byzantine context might well have been of steppe nomadic origin, worn by a steppe nomadic horseman, in the (temporary) service of the Byzantine army. In the interface between different cultural groups, influences developed into new

forms of tactics, weaponry and equipment. Ada Bruhn Hoffmeyer emphasises the influence of the Turkic nomadic tribes on Byzantine warfare, especially in the border-zones neighbouring on the Asiatic people and notes that this was not limited to tactics but included dress as well (Bruhn Hoffmeyer 1966:69).

Traces of Byzantine Diplomacy?

How then are these various objects that link up with the Byzantine Empire to be interpreted? In dealing with much the same problem concerning Byzantine objects in Avar territory, Falko Daim (2001) presents three possible explanations: the objects have reached Avar territory as trade goods or loot or they are proof of diplomatic relations. Daim further argues that the fact that the belts concerned in his study constituted part of the Byzantine official dress, made them suitable as diplomatic gifts and they could have reached Avar territory in the course of diplomatic missions. Diplomatic gifts from the Byzantine Empire could consist of material objects, but also of titles and rank. There was even a detailed code stating which materials and qualities of fabrication were suitable for whom (Daim 2001:155f; The Primary Chronicle sub anno 945). “Diplomacy is the formalized management of ritualized exchanges between two (not necessarily equal) power bases” (Smythe 1992:305). Possibly the Byzantine material in Birka should be seen in the same light as its counterpart in other barbarian contexts, e.g. the Pechenegs, the Bulgars and the Magyars. Paul Stephenson has, in a most enlightening way, described the Byzantine tactics presented in the works of Emperor Constantine Porphyrogenitus’ *De Administrando Imperio*, in dealing with Barbarian groups. It was an expressed strategy to extend the Order of the Empire to the non-Byzantine world that included a combination of utilitarian and ceremonial devices. The barbarian chieftains received titles, tribute payments and trade, etc. (Stephenson 2004:33ff, 45). These tactics could well be reflected in the treaties concerning conditions of everyday trade that Byzantium signed with the Rus’ in the first part of the 10th century (The Russian Primary Chronicle *sub anno* 907 and 912; Hedenstierna-Jonson in print).

If Birka was considered a part of an extensive but close-knit Rus’ network, focus is redirected to what interest Byzantium had in late 10th century Rus’. Trade was well-established even if it would become more extensive in the decades to come. The emerging Kiev state posed a military threat on Constantinople. Trade and warfare were most likely the foundations of these contacts, but there was yet another aspect – that of the imperial guards. In the 11th and 12th centuries historians record the presence of barbarian axe-bearing imperial bodyguards in Byzantine diplomatic exchanges,

whose role was to give added legitimacy to the Byzantine emperor (cf. Smythe 1992). Byzantium had a primarily defensive policy when dealing with the barbarians north of the Black Sea. One main aspect was maintaining a balance of weakness between the different barbarian groups. “Since Byzantium could not itself intervene militarily in the south Russian steppe, it had to rely on others to fight its battles against both real and potential enemies” (Noonan 1992:118). Thus being dependant upon proxies, the diplomatic system required “gifts, bribes, and subsidies directed by Byzantine agents into the hands of various allies” (Noonan 1992:119). In 966 the governor of Cherson was dispatched to Kiev where he paid Prince Sviatoslav over 450 kg of gold to attack the Danubian Bulgars (Vernadsky 1948:44f). The ideal for the Byzantine emperor was a group of allies that would fight wherever he needed them. This was seldom realised and since good intelligence and generous payments did not guarantee success, secondary policies were used; e.g. religion and commerce (Noonan 1992:120f).

6. THE WARRIORS AND THE BIRKA CONSTRUCT IN THE 10TH CENTURY

With the aim of identifying and characterising the Birka warrior, this study has focused on the material culture of these warriors preserved in the unique context of Birka's Garrison. Case studies on what are considered diagnostic artefacts and particular stylistic expressions of the warriors, suggest a pattern of movements and contacts. Together with the character and development of Birka's fortified structures, and the implied impact of martial society, this study of the warriors is deemed to be an indication of Birka's role and function in a wider power-political context during the 10th century. Distribution patterns distributions that reveal contacts and power structures are the focus of papers II and III – showing two different aspects of these contacts and discussing symbols of office and affiliation. Paper IV is concerned with a rather different aspect of distribution – patterns, dealing with a type rather than particular artefact, whose presence also indicates different levels in the ideological framework as well as the extent to which the individuals have adapted to these ideas.

In the process of analysing style and iconography, and in the discourse on places of manufacture and origin, the supplementary information provided by scientific analysis methods has been of great importance, increasing the amount of basic data for further comparative studies. In papers I; II and IV the use of laser scanner techniques in the process of producing basic data for further studies have proven beneficial and in papers IV and V analyses of the metal composition of the studied objects have enabled more accurate assumptions on the process of manufacture and places of origin.

The analysis of the material culture have shown that the Birka warriors most likely were not only on the receiving end, and aspects of both contributions and adaptations, indicating the mobility of the warriors are discussed in papers IV and V. The uses of advanced non-Northern fighting technique, as discussed in paper IV, presupposes thorough training by or with warriors from other cultures and thus indicates lengthy stays in foreign places – and campaigning. These interpretations are further strengthened by the outcome of the dietary analyses of paper VI, even though only indirectly

concerned with the warrior, that study still implies significant differences not only in the diet of warriors but even in their mobility.

The case studies all indicate contacts and cultural exchange on different levels. There is even an emerging picture of the creation of something new in the stylistic expressions of the martial material culture, following the same network of contacts as seen in the distribution of the individual artefacts. With the supposition that material culture reflects cultural groups, contacts and loyalties, it is my belief that this new composite form of stylistic expression is linked to the community of the Rus'. All in all – what then are the implications of the case studies and their conclusions respecting the wider context of the Birka construct and its warriors during the 10th century?

AT CLOSE RANGE

Birka

During the end of the 9th century, the focus of Birka's trading interests turn from West to East and the archaeological material from the 10th century shows close contacts with the trading posts of Ancient Rus'. On a martial note, the fortifications of Birka, though initially erected in the founding stage of the trading post, were strengthened during this period. The hillfort rampart was enlarged and crowned with a wooden super-structure, making it in all an imposing 5 meters in height. Marking the end of this general martial expansion, a Garrison was established, in the mid 10th century. This development reflects a change in external threat, but also a redirection of interest and an intensification of Eastern trade contacts. Though not within the actual framework of this study, mention might be made of the appearance of the elaborate chamber-graves during the 10th century as this supposedly was related to this developmental trend.

Without claiming that the structure of society during previous Birka periods was much different, the impact of martial life was nevertheless strong during the 10th century. As with many other early medieval communities, martial ideals and structures penetrated every aspect of life. This did not imply that everyone in society was a warrior, though they most likely considered themselves as part of the martial construct. The recruiting ground was wide as most free young men were prepared through training and education to become active warriors. The retinue-system provided the means of training and affiliation, and also supplied a structure for when it was acceptable to leave service and even form a military following of one's own. While

the retinue-system was a general trait of the time, the situation in Birka and particularly in the Garrison was something slightly different. Trade was most likely a very violent business and a trading-post of Birka's magnitude must have been an attractive target. Its central and accessible location, at the junction of the routes on Lake Mälaren, made it even more exposed to the general insecurity of the Later Iron Age/early medieval period. This advanced form of trade, recently studied in depth by Ingrid Gustin, required an established system of trust and security to attract the merchants and goods of the quality visible in the archaeological material (Gustin 2004). That Birka was considered a fairly secure place for trade is recorded by Adam of Bremen in his 11th century account of the then abandoned settlement (Adam of Bremen 2002:52).

The warriors

An important aspect of the warriors' role when on the island of Björkö/-Birka would have been their function as guarantors, defending trust and security in trade. The military structures of Birka were a prerequisite for the activities in the town. Though in fact a part of the military following of the Svea king, the Birka warriors, I have suggested, at times could take on assignments serving in armed convoys for organised groups of merchants. This was possible due to the fluid structure of their organisation and the fact that they were not part of the king's personal guard that followed him in his itinerant exercise of power. Stationed at Birka's Garrison, their primary loyalties were to their military leader and their duties and functions differed from that of the king's following.

As Birka should be regarded as the central point of a greater complex of fortified structures incorporating water-traffic barricades and possibly other structures laid out in strategic locations in the Lake Mälaren region, it is likely that the warriors at times circulated around other positions within the complex. Apart from their martial activities, the warriors' daily life included activities typical for men of high social standing. Within the Garrison area there was a controlled production of keys, locks and bronzed weights, indicating a control-function that possibly could even be extended to water supply.

To regard the warriors of the Garrison as a stationary troop with the sole function of guarding and defending Birka town, would be to diminish their scope and field of activities. They should be seen in the same light as their contemporary Northern counterparts elsewhere, as evident in the written sources. This means long-term campaigning, strategic and tactical knowledge, and an order of command and system of rank. They were well-trained,

functionally equipped, skilled warriors and the strong foreign influences in the material culture point to long-running foreign influences and experiences. The weaponry and equipment show contacts with both western and eastern military cultures, and the warriors seems to have adapted their fighting technique to warfare on different fronts.

Summarising what this study has established about the Birka Garrison warriors, it is possible to conclude that the archaeological material reveals a standing troop of approximately 40 warriors. The Garrison was manned all year round, but there are also signs of long-term campaigning abroad, and knowledge of extensive contacts with warriors of other cultures. The Birka warriors worked somewhere in the border-zone between honour and profession, standing with one foot in the fervour and motivation of the warrior and the other in the professionalism and standardisation of the soldier. The communal character of weaponry implies a general supplier of equipment, but the diversity of types indicates that this was not sufficient all the way. The strong religious presence and the indications of ritual feasting imply a warrior ideal manifesting in the group, providing motivation and mentally preparing the warriors for battle. The archaic structure of the warrior's hall building and the emphasis on pagan values reflected in the depositions and the manufacture of amulets, indicates a positioning against Christianity and possibly against the political power which the new religion represented.

Rus'

To be Rus', according to this study, involved a shared identity among the people in the trading posts along the eastern trade-route. The Northmen, even though in the majority in the beginning, were not the only cultural group represented. Slavs in particular were an important part of this conglomerate, and possibly also people from the eastern Baltic region. Together they formed a new cultural mix, by design, creating a cultural expression of their own. The people from the North, although not solitary, contributed with some form of organisation and administration and adapted to new types of weaponry and warfare technique and possibly even to the intrinsic meaning of the design, composition and ranking systems of other martial cultures. Among the most prominent of these new impulses, were borrowings from the steppe nomadic tribes who waged war from horseback and excelled in archery and riding. Other strong impulses naturally came from the great Byzantine Empire and its border-zones where the Rus' came into contact with the advanced and superior Byzantine military organisation, as well as its complicated diplomatic system.

The presence of an Eastern or oriental type of warrior in Birka has been questioned, and admittedly the presence of full-blood eastern warriors in Birka's Garrison is thought-provoking indeed. Yet such scepticism must rest on firm ground and not on idle speculation. The assumption that the Garrison warrior had Rus' affiliations finds strong support in the find-material. The Birka warriors from the late 10th century could very likely have defined themselves as being part of the Rus' community, even though they were born in the Mälär region. The Rus' material culture is not fixed to a certain place or region and consists of a mixture of objects from different ethnic groups and cultures. If it is possible to talk about a homogenous mix of cultures, this is what the Rus' material culture display in the trading posts along the rivers of Ancient Rus', and in late 10th century Birka.

Though situated at great distances from each other, and within a wide-ranging geographical area, the heterogeneous group of inhabitants in the trading posts along the rivers of Ancient Rus' to my mind considered themselves as part of the same ethnic group. They may have been born locally, but their self-image was that of a Rus'. In support of this contention we find that the composition and development of material culture runs in parallel throughout the sites in question. The appearance of new influences seems to arrive at the same time in Birka as in Gnëzdovo, and their artefacts are treated in a similar manner. An eloquent example is that of the oriental style mounts studied in depth in paper IV.

THE WIDER CONTEXT

Placing Birka on the power-political map

The many analogies with the fortified trading posts of the Eastern trade-route emphasises Birka's place in a trading network that conveyed contacts with steppe nomads, Volga Bulgars, Byzantine Greeks and Arabs, among others. By comparison, Birka had a political and economical standing equal to that of its counterparts in Ancient Rus'. The occurrence of foreign objects and their treatment and use in their new context is a parallel phenomena in Birka and places like Gnëzdovo, as has been highlighted in paper IV with regard to the oriental mounts. These new influences reached Birka by the same means and at the same time as they reached the trading posts in Ancient Rus', even if these were so to say closer to the source. That Birka stands out as a solitaire in its hinterland in this respect is also clear as the

occurrence and treatment of oriental mounts in the whole of the Mälär region show significant differences to Birka's.

With a well-established position in the Eastern trade network, Birka's relations with its Western counterparts seems to have taken a turn for the worse in the 10th century. A significant decline in western European goods, signals a breach in the contacts between Birka and the trade south and west of the Baltic, a region partly dominated by the Danish king. While taking a stand against the Danish power realm, there are indications that a much greater power had interests in Birka during the 10th century – Byzantium. Whether the occurrence of Byzantine artefacts and dress-details are interpreted as diplomatic gifts or as expressions of established contacts with the Byzantine Empire, the Birka construct must have been seen as of power-political importance.

A change in power-structure

It is my belief that the changes in the Birka construct taking place in the end of the 9th and beginning of the 10th century reflect a change in power-structure. What initially had been an expression of the Svear royal supremacy and interests, became an element in a network of trade-based centres of power. The role played by the Svear king in this new context is not clear, but it is obvious that the focus turned abruptly from West to East and that the welfare of Birka now was dependent on the success of its counterpart sites along the eastern trade-route. The authority of the king was in this context reduced to one of dependency on others. This change in the formation of power is reflected in the remodelling and expansion of the military structures on Birka, as also in the developments within corresponding trading posts in Ancient Rus'. The construction of the Garrison in the mid 10th century can thus be seen as a further expression of this new power-structure.

The parallel development of Birka and places like Sarskoe, Gnëzdovo and Šestovica, and the correspondence in archaeological material within these sites indicate that these places should be treated as being part of the same context. That these places interacted is clear, but the analogous find material and the equivalent expansion of politico-military power indicate something more. If these places were dependent on each other this would indicate that they were not in fact part of a peer polity system. Instead I would like to pose the question if they participated in a 'Hanseatic-like' network? It is important to emphasise that the system of trade during this time cannot in any way be compared to that of the Hanseatic federation. The likeness drawn upon here is rather that of the formation of a close-knit yet

geographically dispersed cultural structure linked to the activities of the trading-post rather than to the surrounding geographical region. These sites were autonomous in their existence and did not grow out of their hinterland but rather began to create economic hinterlands of their own. The lack of a strong central power developed a need for other means of ensuring security in trade and travel; the strong military presence and assignment of armed convoys were examples of this.

The End

The stand against the Danish power-realm should be seen as a statement of power politics that in all probability even was related to the Christianisation process and the consequential fundamental changes in values and world-view. The end of Birka should, in my view be seen as a continuation of this evolution as there was a gradual displacement of authority leading towards a new formation of power, rooted in the emergence of the hinterlands and led by a Christian ruler. Though especially apparent along the eastern trade-route, these changes even took place in other parts of northern Europe. The warriors from the Garrison and the Birka construct of the 10th century represent the losers in this process. How this development actually is reflected in the archaeological remains of the last battle of the Garrison is not possible to discern. The context does not allow for an interpretation of the identity of the attackers or if this in fact was the decisive moment of Birka's fall. But despite the outcome of that particular attack, this is when the Birka construct came to an end.

This change, as we have seen, was not unique for Birka, but rather part of a greater process symbolically marked by an actual change in geographical location that can be seen in most of the settlements that were active components in the trade on the Birka – Rus' route.

The warriors of Birka, despite the devastating last battle of the Garrison, could still have served a well-defined role even after the decline of Birka. It is tempting to see them reflected in the increasing numbers of Varangians or Northmen participating in the military activities of the Kiev princes and of the Byzantine Emperors during the 11th century.

7. SUMMARY

THE BIRKA WARRIOR – the material culture of a martial society

Introduction

This thesis deals with the early medieval warriors of the Viking Age trading post of Birka in the Lake Mälaren region of Central Sweden. As a part of the Eastern trade network during the end of the 9th and 10th centuries, Birka developed in a slightly divergent fashion from its western counterparts, e.g. Hedeby. The Eastern focus is clearly visible in the find-material, and the material culture of the warriors is no exception to this. The extensive archaeological remains deriving from recent years' excavations of Birka's Garrison display a multitude of artefacts of various origins, but with strong Eastern connotations. This material and its archaeological context constitute the basis of the present study.

The two main aims of this thesis are (1.) *to establish the role, function and affiliation of the Birka warrior*, and (2.) *thereby place Birka on the power-political map of the 10th century*. In order to establish this, I have studied the material culture of the Garrison of Birka and related it to the fortified structures of the trading post and to its counterparts in Ancient Rus'.

The sources availed of in this dissertation consist of the extensive results of the recent excavations of the fortified structures at Birka, in particular the Garrison. The find-material and its archaeological context are compared to similar sites, mainly in Ancient Rus'. The study has further been enhanced by a critical use of contemporary written sources of the period, in order to obtain a more nuanced picture.

Special groups of artefacts, rendered as diagnostic on account of their iconographical and stylistic composition, have been the subject of case studies and are as such presented in the six papers of the thesis. These papers deal with questions of symbols of rank and office (*papers II, III, IV*), distri-

bution patterns conveying political and diplomatic contacts (*papers II, III & IV*), affiliation, travel and exchange (*papers III, IV & VI*), as well as questions of style and iconography (*papers II, III, IV & V*). They also include methodological studies (*papers I & VI*). In the synthesis the case studies are assimilated into the broader significance to of the 'Birka construct' during the 10th century.

Conceptual outline and theoretical framework

The study of warfare and violence in prehistoric societies has recently been restored as a valid research topic after a long period of virtual silence. In order to place the present study in a wider context and provide a conceptual outline, a brief *Stand der Forschung* is presented. It is stated that our knowledge of early medieval Scandinavia will be biased if aspects of warfare and violence are not added to the research agenda. The theoretical framework is based on the assumption that the impact of warfare and martial life was of great importance in the structure and organisation of early medieval societies. In order to understand the Viking Age, the aspect of violence and warfare is treated as one of its most important characteristics.

The Birka construct and its warriors is said to be part of a militarised structure which is based on a number of prerequisites that all follow the theme not making any distinction between martial and civilian life. Its impact on everyday life, determining norms and values etc even incorporates women and children. Prerequisites for being an honourable warrior, and the organisational formula of retainer and mercenary, are discussed as is the role of the Northmen in early medieval warfare. During this period a more institutionalised form of warfare developed, incorporating new social structures and new categories of warriors and warfare, organised on a larger scale. These changes in the structure of martial society and warring technique required a certain level of societal development, something that is even reflected in the organised form of symbolic language incorporating symbols of rank and office. In analysing symbols, style and stylistic expression are vital, and the iconographical aspect of style is considered most important. Apart from identifying particular objects as deliberate symbols, it is also maintained that material culture reflects groupings of people, leading to the problematic issue of group identity and ethnicity. I have acceded in this thesis to the subjectivists in ethnology who state that ethnicity involves an active process of creating boundaries and defining 'us' as a group against 'them'.

Methods used

The basic methods used in this study can be ordered into three different levels, starting with the individual object and, reaching by routes of distribution, to the overriding context. In all three levels, traditional archaeology is combined with archaeological science, complemented by archaeological scientific analyses. Special attention is paid to surface structure analysis by laser scanner equipment when considering iconographical issues, and isotope analysis for dietary studies. The value of the close collaboration between archaeologist and finds conservator is also emphasised. By using scientific analysing methods, new knowledge and new perspectives on the material can be achieved. The necessity for the conclusions to be firmly rooted in the archaeological context is however stressed.

The study is based on a number of different types of artefacts with function, affiliation or target group as their common denominator. It is stated that the combination of object, symbol and context can convey messages of power-political character. Stylistic and iconographical analyses are made in order to establish patterns of distribution and complimented by the find context, indicating contacts and affiliations of Birka and its warriors. As martial culture is of tradition rich in symbols, the archaeological finds from the Garrison have proven a particularly rich material to work with.

Archaeological context and find-material

The fortifications of the trading post of Birka are characterised as an interaction between land and sea, and a prerequisite for the activities of the trading post. A general overview of the different parts of the fortified structures is provided, with special focus on the Garrison and the warrior's hall. Constituting the object of this study, the warriors of the Garrison are examined with reference to their work and world view, including training and organisation, attitude to food and religion. The extensive remains of their material culture are presented and discussed in terms of personal and professional. This in-detail analysis of the warriors and fortifications ends in a discussion on the fighting techniques employed at Birka. It is stated that the scepticism which scholars have applied to the importance of the fortifications of Birka, in terms of the site not being possible to defend, is rooted in the miscomprehension that these structures were primarily defensive. Instead they should be regarded as forming a tactical base in offensive warfare.

Stylistic expression and Eastern analogies

In order to attain a wider perspective, Birka's martial aspects are compared to those of contemporary sites in both eastern and western Europe. Using the tool of establishing distribution patterns by tracing diagnostic designs,

the closest parallels to 10th century Birka and especially to the Garrison, is located to a number of trading posts on the great rivers in the territory of Ancient Rus'. It is stated that these Rus' trading posts, essentially inhabited by Northmen, shared a common culture – a possible Rus' identity, maintained throughout a vast area by means of exceptionally close contacts which put their imprint on their shared cultural expression. I point to the creation of a Rus' stylistic expression discernable in the archaeological material both in Birka and in Ancient Rus' which integrates Norse, Steppe nomadic, Islamic, Byzantine and other traits. The so-called Oriental style is suggested to be a particular Rus' style. The thesis also maintains that the cultural identity of the Rus', together with their relations to the greater geographical sphere within which they acted, are of great importance for the further understanding of this Eastern network of trade and political alliances.

Conclusions and results

With the study of the material culture of the Birka warrior, this thesis has shown that the warriors from Birka's Garrison had an equal part in the martial development in contemporary Europe but with their own particular traits, which included the use of advanced non-Scandinavian fighting techniques and symbols of rank and status deriving from the cultural sphere of the Steppe nomads. When stationed in Birka's Garrison, the warriors were part of a greater fortified structure controlling access to the Lake Mälaren region and providing the security in trade which was a prerequisite for attracting long-distance traders and skilled craftsmen to Birka. The loose-knit structure and character of their martial organisation would however have encouraged a high level of mobility for the warriors, clearly reflected in the material culture of the Garrison where influences from a range of cultural regions and power-realms are represented. Close relations with the Eastern trade route and contact with the powerful Byzantine Empire were maintained. As a pointer for future research, the question is posed which organisational form the close-knit structure of the Rus' trading posts actually took, glancing ahead to the subsequent guild system of medieval Europe.

The end of the Birka warrior, spectacularly staged in a final battle of the Garrison, corresponds to local changes due to the firmer establishment of Christianity in the region and a redirection of trade-interests towards the western trade route. Birka loses its role as an important trading post and disappears at the end of the 10th century. This change was not limited to Central Sweden but part of a greater process where a new political structure was developing, better anchored in the local region with trading posts and settlements of its own.

REFERENCES

- Abdel-Malek, A. 1988. Foundations – and Fundamentalisms. *Die Welt des Islams*, New Ser., Bd. 28, Nr. 1/4. 25–37.
- Abels, R. 1988. *Lordship and Military Obligation in Anglo-Saxon England*. London.
- Adam of Bremen. *History of the Archbishops of Hamburg-Bremen*. Engl. transl. F. J. Tschan. Introduction by T. Reuter. 2002. New York.
- Ahlsén, M. 2004. *Brödet i Birka. Analys av organiskt material från Garnisonen och Svarta Jordan på Björkö*. CD-uppsats i laborativ arkeologi 2003/2004. Arkeologiska forskningslaboratoriet, Stockholms universitet. MA-thesis.
- Al-Masudi. övers. 1962. *Les prairies d'or* I. Traduction Française de B. De Meynard & P. De Courteille. Revue et corrigée par C. Pellat. Paris.
- Almgren, B. 1963. Vikingatågens höjdpunkt och slut. Skepp, hästar och befästningar. *TOR* vol. IX. Uppsala. 215–250.
- Ambrose, S. H. 1993. Isotopic Analysis of Paleodiets – Methodological and Interpretive Considerations. *Investigations of Ancient Human Tissue – Chemical Analyses in Anthropology*. M. K. Sanford (ed.). Philadelphia. 1-37.
- Ambrosiani, B. 2001. The Birka Falcon. *Eastern Connections Part One: The Falcon Motif. Birka Studies* V. B. Ambrosiani (ed.). Stockholm. 11–27.
- Ambrosiani, B. 2002. Birka im 10. Jahrhundert unter besonderer Berücksichtigung der Ostverbindungen. *Europa im 10. Jahrhundert. Archäologie einer Aufbruchzeit*. J. Henning (Hrsg.). Main am Rhein. 227–235.
- Ambrosiani, B. 2002b. Osten und Westen im Osthandel zur Wikingerzeit. *Haithabu und die frühe Stadtentwicklung im nördlichen Europa*. K. Brandt, M. Müller-Wille, C. Radtke (Hrsg.). Neumünster. 339–348.
- Androschuk, F. 2001. Kung, makt och krigare – om Birka och liknande platser i Östeuropa. *Birkas krigare*. M. Olausson (ed.). Stockholm. 59–64.

- Androshchuk, F. 2002. Černigov et Šestovica, Birka et Hovgården: le modèle urbain Scandinave vu de l'Est. *Les centres proto-urbains russes entre Scandinavie, Byzance et Orient*. M. Kazanski, A. Necessian & C. Zuckerman (eds.). Paris. 257–266.
- Androshchuk, F. 2004. Vikings – the Rus – Varangians. *Olga och Ingegerd. Historiska nyheter 2004–2005*. Stockholm. 36–39.
- Anglo-Saxon Chronicles*. Engl. transl. A. Savage. 1997. Godalming.
- The Annals of St Bertin*. Engl. transl. J. L. Nelson 1991. Manchester.
- Arbman, H. 1933. Rapport rörande undersökningarna på Björkö den 12–29 juli 1932. ATA Inv. 20300.
- Arbman, H. 1939. *Birka*. Stockholm.
- Arbman, H. 1940. *Birka I. Die Gräber*. Tafeln. Stockholm.
- Arbman, H. 1943. *Birka I. Die Gräber*. Text. Stockholm.
- Arne, T. J. 1911. Sveriges förbindelser med Östern under vikingatiden. *Fornvännen* 1911. *Journal of Swedish Antiquarian Research*. Stockholm.
- Arne, T. J. 1914. *La Suède et l'Orient*. Uppsala.
- Arne, T. J. 1914b. Den svenska runstenen från ön Berezanij utanför Dnjeprmynningen. *Fornvännen* 1914. *Journal of Swedish Antiquarian Research*. Stockholm.
- Arne, T. J. 1946. Birkagraven nr 632 och kejsar Theophilus' mynt. *Fornvännen* 1946:4. *Journal of Swedish Antiquarian Research*. Stockholm. 216–232.
- Arrhenius, B. 2005. The State of the Art. Introduction. *Excavations at Helgö XV. Weapon Investigations*. L. Thålin Bergman & B. Arrhenius (eds.). Stockholm. 9–12.
- Arrhenius, B. & Freij, H. 1992. "Pressbleck"-fragments from the east mound in Old Uppsala analyzed with a laser scanner. *Laborativ arkeologi* 6. Stockholm. pp 75–110.
- Arvidsson, K. 2003. *Smedjan i Birkas Garnison*. CD-uppsats i laborativ arkeologi 2002/2003. Arkeologiska forskningslaboratoriet, Stockholms universitet. MA-thesis.

- Asad, T. 1980. Short notice on Orientalism. *The English Historical Review*, Vol. 95, No. 376. 648–649.
- Barth, F. 1969. Introduction. *Ethnic Groups and Boundaries*. F. Barth (ed.). Oslo. 9–38.
- Barth, F. 1969b. Pathan identity and its maintenance. *Ethnic Groups and Boundaries*. F. Barth (ed.). Oslo. 117–134.
- Bazelmans, J. 1999. *By Weapons Made Worthy*. Amsterdam.
- Bengtson, I. 2001. *En funktionsanalys av Garnisonshuset på Björkö*. CD-uppsats i laborativ arkeologi 2000/2001. Arkeologiska forskningslaboratoriet, Stockholms universitet. MA-thesis.
- Biddle, M. & Kjølbye-Biddle. 1997. Repton and the 'great heathen army', 873–4. *Vikings and the Danelaw*. Viking Congress 13. J. Graham-Campbell, R. Hall, J. Jesch & D. N. Parsons (eds.). 45–96.
- Birkeland, H. 1954. *Nordens historie i middelalderen etter arabiske kilder*. Oslo.
- Blöndal, S. 1978. *The Varangians of Byzantium*. Cambridge.
- Bradbury, J. 1985. *The Medieval Archer*. Woodbridge.
- Bradbury, J (ed.). 2004. *The Routledge Companion to Medieval Warfare*. New York.
- Brandenburg, N. E. 1895. *Kurgany zuzerago priladozja*. *MAR* 18. St. Petersburg.
- Brink, S. 1996. Political and Social Structures in Early Scandinavia. A Settlement-historical Pre-study of the Central Place. *TOR* vol. XXVIII. Uppsala. 235–281.
- Brink, S. 1997. Political and Social Structures in Early Scandinavia II. *TOR* vol. XXIX. Uppsala. 389–437.
- Brink, S. 1999. Fornskandinavisk religion – förhistoriskt samhälle. En bösättningshistorisk studie av centralorter i Norden. *Religion och samhälle i det förkristna Norden: ett symposium*. U. Drobin & J. P. Schjødt (eds.). Odense. 11–55.
- Bruhn Hoffmeyer, A. 1966. Military Equipment in the Byzantine Manuscript of Scylitzes in Bibliotheca Nacional in Madrid. *Gladius* V (1966). Granada.

- Brunskog, M. 1992. *Nytt ljus över gammal rost. Att bevara kulturföremål av järn*. Handböcker från Nordiska Museet 3. Stockholm.
- Callmer, J. 2000. The archaeology of the early Rus' c. A.D. 500–900. *Medieval Scandinavia* 13. 7–63.
- Carlie, A. 2004. *Forntida byggnadskult*. Malmö.
- Carlsson, A. 1997. Birkas kungsgård på Adelsö och Svearnas Fornsigstuna – två aristokratiska miljöer i Mälardalen. "...*Gick Grendel att söka i det höga huset...*". J. Callmer & E. Rosengren (eds.). Hallands läns museer. 83–88.
- Carman, J. 1999. Beyond the Western Way of War: Ancient Battlefields in Comparative Perspective. *Ancient Warfare*. J. Carman & A. Harding (eds.). Sutton Publishing. 39–55.
- Carman, J. & Harding A. (eds.) 1999. *Ancient Warfare. Archaeological Perspectives*. United Kingdom: Sutton Publishing.
- Chisholm, B. S. 1989. Variation in diet reconstructions based on stable Carbon isotopic evidence. *The chemistry of prehistoric human bone*. T. D. Price (ed.). Cambridge. 10–37.
- Christiansen, E. 2002. *The Norsemen in the Viking Age*. Blackwell Publishers.
- von Clausewitz, C. *On War*. Engl. transl. J. J. Graham. 1997. Hertfordshire.
- Constantine Porphyrogenitus. *De Administrando Imperio*. G. Moravcsik (ed.). Engl. transl. R. Jenkins. 1949. Budapest.
- Daim, F. 2000. "Byzantinisch" Gürtelgarnituren des 8. Jahrhunderts. *Die Awaren am Rand der byzantinischen Welt*. F. Daim (ed.). Vienna.
- Daim, F. 2001. Byzantine belts and Avar birds. *The Transformations of Frontiers*. W. Pohl, I. Wood & H. Reimitz (eds.). Leiden. 143–188.
- Danmarks runeindskrifter*. 1942. Text. L. Jacobsen & E. Moltke (eds.). Copenhagen.
- Dawson, D. 1996. *The Origins of Western Warfare*. Oxford.
- Dawson, T. 2002. Suntagma Hoplôn: The Equipment of Regular Byzantine Troops, c. 950 to c. 1204. *Companion to Medieval Arms and Armour*. D. Nicolle (ed.). Woodbridge. 81–90.

- Deckel, P. 2002. Strategies in a coastal landscape. *Maritime Warfare in Northern Europe. Technology, organisation, logistics and administration 500 BC – 1500 AD*. A. Nørgård Jørgensen, J. Pind, L. Jørgensen & B. Clausen (eds.). PNM 6. Copenhagen. 209–215.
- Degoev, V. V. (ed.). 2003. *Antinormanizm. Sbornik russkogo istorieskogo obscestva*. No 8. Moskva.
- Dhouda. *Handbook for William*. Engl. transl. C. Neel. 1991. Washington D.C.
- Dickinson, T. 2005. Symbols of Protection: The Significance of Animal-ornamented Shields in Early Anglo-Saxon England. *Medieval Archaeology*, Vol. XLIX 2005. 109–163.
- Dillard, D. 1967. *Västeuropas och Förenta staternas ekonomiska historia*. Lund.
- Dillman, F-X. 1997. Kring de rituella gästabuden i fornskandinavisk religion. *Uppsala och Adam av Bremen*. A. Hultgård (ed.). Lund. 51–73.
- Domeij, M. 2004. Det bundna – djurornamentiken och skaldediktningen I övergången mellan förkristen och Kristen tid. *Gotländskt arkiv* 76, 2004. Visby
- Domeij, M. 2005. Women and animal ornamentation. Seminar paper. Violence, Coercion, and Warfare. Dialogues with the Past. The Nordic Graduate School in Archaeology 2005.
- Duby, G. 1985. *William Marshal. The Flower of Chivalry*. Engl. transl. R. Howard. New York.
- Duczko, W. 2004. *Viking Rus. Studies on the Presence of Scandinavians in Eastern Europe*. Leiden.
- Earle, T. Style and iconography as legitimation in complex chiefdoms. *The Uses of Style in Archaeology*. M. Conkey & C. Hastorf (eds.). Cambridge. 73–81.
- Edberg, R. 2001. Rurik, Jaroslav den vise oh Djingis khan. *META* 2001:3. Lund. 3–18.
- Eggenberger, C. 1987. *Psalterium aureum Sancti Galli : mittelalterliche Psalterillustration im Kloster St. Gallen*. Sigmaringen
- Ehlton, F. 2003. *Ringväv från Birkas Garnison*. CD-uppsats i laborativ arkeologi 2002/2003. Arkeologiska forskningslaboratoriet, Stockholms universitet. MA-thesis.

- Engström, J. 1994. Det vendeltida rytteriet. *Meddelanden 54 Armémuseum. Årsbok 1994*. Stockholm. 9–34.
- Engström, J. 1997. The Vendel Chieftains a study of military tactics. *Military Aspects of Scandinavian Society*. PNM vol. 2. A. Nørgård Jørgensen & B. L. Clausen (eds.). Köpenhamn. 248–255.
- Engström, J. 2001. Vikingatida krigsväsen. *Birkas krigare*. M. Olausson (ed.). Stockholm. 47–52.
- Enoksen, L. M. 2004. *Vikingarnas stridskonst*. Lund.
- Ericsson, V. 1999. Ryggknappsspännen och entrelacornamentik: En ikonografisk analys med hjälp av laserscanner. *CD-uppsatser i laborativ arkeologi 98/99*. Stockholm. MA thesis.
- Eriksson, G. 2003. *Norm and difference. Stone Age dietary practice in the Baltic region*. Diss. Stockholm.
- Fennö Muyingo, H. 1998. *Borgvallen*. Arkeologisk undersökning 1996. Birkas Befästning 2. Rapport. Stockholms universitet.
- Fennö Muyingo, H. 2000. *Borgvallen II*. Utvidgad undersökning av Borgvallen och underliggande grav 1997. Arkeologisk undersökning 1997. Birkas Befästning 3. Rapport. Stockholms universitet.
- Franklin, S. 1998. The Invention of Rus(sia)(s): Some Remarks on Medieval and Modern Perceptions of Continuity and Discontinuity. *Medieval Europeans*. A. P. Smyth (ed.). New York. 180–195.
- Franklin, S. & Shepard, J. 1996. *The Emergence of Rus 750–1200*. London.
- Fritz, B. 2006. När makten blev synlig i södra Dalarna – synpunkter på arkeologisk historieskrivning. *Fornvännen* 101:1. *Journal of Swedish Antiquarian Research*. Stockholm. 35–37.
- Frostne, J. 2002. Krukskärvorna från Birka berättar. *C/D-uppsats Arkeologiska forskningslaboratoriet, Stockholms universitet 2001/2002*. Stockholm. Archaeological Research Laboratory, Stockholm University. MA thesis.
- Gamber, O. 1968. Kataphrakten, clibanarier, normannenreiter. *Jahrbuch der kunsthistorischen Sammlungen in Wien*. Band 64 (Neue folge Band XXVIII). Wien. 7–44.
- Gardīdī. *Orientalische Berichte über die Völker Osteuropas und Zentralasiens im Mittelalter : die Gayhani-Tradition* (Ibn Rusta, Gardizi, Hudud al-`Alam, al-Bakri und al-Marwazi) 2001. H. Göckenjan & I. Zimonyi (eds.). Wiesbaden.

- Gorelik, M. 2002. Arms and Armour in South-Eastern Europe in the Second Half of the First Millennium AD. *A Companion to Medieval Arms and Armour*. D. Nicolle (ed.). Woodbridge. 127–147
- Gräslund, A-S. 2003. Drakar i Uppåkra. *Fler fynd i centrum. Uppåkrastudier* 9. B. Hårdh (ed.). Lund. 179–188.
- Gustafsson, N. B. 2003. *Bultlås från Birkas Garnison – analys och rekonstruktionsförslag*. CD-uppsats i laborativ arkeologi 2002/2003. Arkeologiska forskningslaboratoriet, Stockholms universitet. MA-thesis.
- Gustin, I. 2004. Mellan gåva och marknad. Handel, tillit och materiell kultur under vikingatid. Diss. Lund.
- Hallström, G. 1925. Till riksantikvarien med iakttagelser rörande befästningar och huslämningar på Björkö samt med förslag till kommande fältarbeten därstädes. ATA. Dnr. 2978/25.
- Halsall, G. 1989. Anthropology and the Study of Pre-Conquest Warfare and Society: The Ritual War in Anglo-Saxon England. *Weapons and Warfare in Anglo-Saxon England*. S. Chadwick Hawkes (ed.). Oxford. 155–177.
- Halsall, G. 1992. Playing by whose rules? A further look at Viking atrocity in the ninth century. *Medieval History* Vol. 2, No. 2. 2–12.
- Halsall, G. 1998. Violence and society in the early medieval west: an introductory survey. *Violence and Society in the early medieval West*. G. Halsall (ed.). Woodbridge. 1–45.
- Halsall, G. 2003. *Warfare and Society in the Barbarian West, 450–900*. London.
- Hansson, A.M. 1997. *On Plant Food in the Scandinavian Peninsula in early medieval Times*. Diss. Stockholm.
- Hauck, K. 1970. *Goldbrakteaten aus Sievern : spätantike Amulett-Bilder der "Dania Saxonica" und die Sachsen-"origo" bei Widukind von Corvey*. München.
- Hayeur Smith, M. 2004. Draupnir's Sweat and Mardöll's Tears. An Archaeology of Jewellery, Gender and Identity in Viking Age Iceland. *BAR International Series* 1276. Oxford.
- Hedenstierna-Jonson, C. 1996. *Mannen mellan odjuret: en alternativ tolkning av ett mångtusenårigt motiv*. MA-thesis. Department of Art History. Stockholm University.

- Hedenstierna-Jonson, C. 1998. Oden och kvinnorna. Spår av Odens kvinnliga aspekter i det folkvandringstida bildmaterialet. *Rökringar*. C. Hedenstierna-Jonson, C. Jacobsson & T. Svensson (eds.). Visby. 123–131.
- Hedenstierna-Jonson, C. 1998b. The study of three mounts from Vendel using laser scanning technique and surface structure analysis. *Laborativ arkeologi* 10–11. Stockholm. 81–84.
- Hedenstierna-Jonson, C. 2000. *Borg*. *Arkeologisk undersökning* 1998/1999. Borgar och befästningsverk i Mellansverige 400–1100 e.Kr. Rapport 2. Stockholms universitet.
- Hedenstierna-Jonson, C. 2001. Befästa handelsstäder, garnisoner och professionella krigare. *Birkas krigare*. M. Olausson (ed.). Stockholm. 65–72.
- Hedenstierna-Jonson, C. 2002. A group of Viking Age sword chapes reflecting the political geography of the time. *JONAS. Journal of Nordic Archaeological Science* 13. Stockholm. 103–112.
- Hedenstierna-Jonson, C. In print. Rus, Varangians and Birka Warriors. *The Martial Society, Aspects on Warriors, Fortifications and Social Change from the Bronze Age to the 18th Century*. L. Holmquist Olausson & M. Olausson (eds.). Stockholm
- Hedenstierna-Jonson, C. Accepted. Borre style metalwork in the material culture of the Birka warriors. An apotropaic symbol. *Fornvännen* 101. *Journal of Swedish Antiquarian Research*. Stockholm.
- Hedenstierna-Jonson, C. & Holmquist Olausson, L. 2006. *The Oriental Mounts from Birka's Garrison*. Antikvariskt arkiv 81. Stockholm
- Hedenstierna-Jonson, C., Kitzler, L. & Stjerna, N. 1998. *Garnisonen II*. *Arkeologisk undersökning* 1998. Rapport. Stockholms universitet.
- Hegmon, M. 1992. Archaeological Research on Style. *Annual Review of Anthropology*, Vol. 21. 517–536.
- Hidán, C. 1996. The Military Tactics of the Ancient Hungarians. *Between East and West. Everyday Life in the Hungarian Conquest Period*. C. Siklódi (ed.). Budapest. 39–67.
- Holmquist Olausson, L. 1993. *Aspects on Birka*. Investigations and surveys 1976–1989. Diss. Stockholm.
- Holmquist Olausson, L. 2001. Birkas befästningsverk – resultatet från de senaste årens utgrävningar. *Birkas krigare*. M. Olausson (ed.). Stockholm. 9–15.

- Holmquist Olausson, L. 2002. The fortification of Birka. *Maritime warfare in Northern Europe. Technology, organisation, logistics and administration 500 BC–1500 AD*. A. Nørgård Jørgensen, J. Pind, L. Jørgensen & B. Clausen (eds.). PNM. Vol. 6. Copenhagen. 159–167.
- Holmquist Olausson, L. 2002b. Patterns of settlement and defence at the Proto-town of Birka, Lake Mälaren, Eastern Sweden. *The Scandinavians from the Vendel Period to the tenth century. An ethnographic Perspective*. J. Jesch (ed.). San Marino. 153–167.
- Holmquist Olausson, L. & Kitzler Åhfeldt, L. 2002. *Krigarnas hus*. Arkeologisk undersökning av ett hallhus i Birkas Garnison. Borgar och Befästningsverk i Mellansverige 400–1100 e.Kr. Rapport 4. Stockholms universitet.
- Holmquist Olausson, L. & Petrovski, S. in print. Curious birds – two helmet (+) mounts with a Christian motif from Birka's Garrison. *Festschrift to Ingmar Jansson*.
- Hudud al-'Alam*. The Regions of the World: a Persian geography 372 A. H. – 928 A. D. Engl. transl. and expl. V. Minorsky. 1937. London
- Hyenstrand, E. 1991. "Teckn till Datzens grund" – om undersökningar i Björkö's Svarta jord. *Fornvännen* 86:3. *Journal of Swedish Antiquarian Research*. Stockholm. 169–181.
- Hylland Eriksen, T. 1995. We and Us: Two Modes of Group Identification. *Journal of Peace Research*, Vol. 32, No. 4. 427–436.
- Hylland Eriksen, T. 1996. *Historia, myt och identitet*. Övers. S. Sem-Sandberg.
- Hägg, I. 1983. Birkas orientalistiska praktplagg. *Fornvännen* 78:3–4. *Journal of Swedish Antiquarian Research*. Stockholm. 204–223.
- Hägg, I. 2002. Aussagen der Textilfunde zu den gesellschaftlichen und wirtschaftlichen Verhältnissen frühstädtischer Zentren in Nordeuropa – die Beispiele Haithabu und Birka. *Haithabu und die frühe Stadtentwicklung im nördlichen Europa*. K. Brandt, M. Müller-Wille, C. Radtke (Hrsg.). Neumünster. 181–218.
- Hägg, I. 2003. Härskarsymbolik i Birkadräkten. *Dragt og magt*. Köpenhamn. 14–27.
- Härke, H. 1989. Early Saxon weapon burials: frequencies, distributions and weapon combinations. *Weapons and Warfare in Anglo-Saxon England*. S. Chadwick Hawkes (ed.). Oxford. 49–61.

- Härke, H. 1992. *Angelsächsische Waffengräber des 5. bis 7. Jahrhunderts*. Köln.
- Härke, H. 1997. Early Anglo-Saxon military organisation: an archaeological perspective. *Military Aspects of Scandinavian Society*. PNM vol. 2. A. Nørgård Jørgensen & B. L. Clausen (eds.). Copenhagen. 93–101.
- Härke, H. 1998. Archaeologists and Migrations: A Problem of Attitude? *Current Anthropology*, Vol. 39, No. 1. 19–45.
- Härke, H. 2000. Social Analysis of Mortuary Evidence in German Protohistoric Archaeology. *Journal of Anthropological Archaeology* 19. 369–384.
- Härke, H. 2004. The debate on migration and identity in Europe. *Antiquity* 78. 453–456.
- Høilund Nielsen, K. 1991. Centrum og periferi I 6. – 8. århundradet. *Fra stamme til stat. 2. Høvdingesamfund og kongemakt*. P. Mortensen & B. M. Rasmussen (eds.). Arkæologisk Selskabs Skrifter XXII:2. Aarhus. 127–152.
- Ibn Fadlan. English translation J. E. Montgomery 2000. *Journal of Arabic and Islamic Studies*, vol.III 2000. Edinburgh. 1–25.
- Ibn Hurdadbih. Norwegian translation H. Birkeland. 1954. *Nordens historie i middelalderen etter arabiska kilder*. Oslo. 10–11.
- Ibn Rusta. Norwegian translation H. Birkeland. 1954. *Nordens historie i middelalderen etter arabiska kilder*. Oslo. 14–17.
- Isaksson, S. 1998. A kitchen entrance to the aristocracy – analysis of lipid biomarkers in cultural layers. *Laborativ Arkeologi* 10–11. Stockholm. 43–53.
- Isaksson, S. 2000. *Food and Rank in early medieval Time*. Diss. Stockholm.
- Isaksson, S. 2005. Arkeologins Laborativa Metoder – applikationer och problem. Arkeologiska Forskningslaboratoriet. Stockholms Universitet.
- Isaksson, S. in print. From feasting freebooters to fasting friars? Continuity and change in the food culture during the transition from Late Iron Age to the early medieval Period in Sweden. *Festschrift to Ingmar Jansson*.
- James, E. 1997. The militarization of Roman society, 400–700. *Military Aspects of Scandinavian Society in a European Perspective, AD 1–1300*. PNM 2. Copenhagen. 19–24.

- Jankuhn, H. 1984. Die Befestigungen um Haithabu. *Archäologische und naturwissenschaftliche Untersuchungen an Siedlungen im deutschen Küstengebiet. Band 2. Handelsplätze des frühen und hohen Mittelalters.* H. Jankuhn, K. Schietzel & H. Reichstein (Hrsg.). Weinheim. 198–207.
- Jankuhn, H. 1986. *Haithabu. Ein Handelsplatz der Wikingerzeit.* Neumünster.
- Jansson, I. 1977. Ett rembeslag av orientalsk typ funnet på Island. Vikingatidens orientalska bälten och deras euroasiska sammanhang. *TOR XVII* 1975–77. Uppsala. 383–421.
- Jansson, I. 1987. Communications between Scandinavia and Eastern Europe in the Viking Age. *Untersuchungen zu Handel und Verkehr der vor- und frühgeschichtlichen Zeit in Mittel- und Nordeuropa.* Teil IV. K. Düwel, H. Jankuhn, H. Siems & P. Timpe (Hrsg.). Göttingen. 773–807
- Jansson, I. 1988. Wikingerzeitlicher orientalscher Import in Skandinavien. *Oldenburg – Wolin – Staraja Ladoga – Novgorod – Kiev. Handel und Handelsverbindungen im südlichen und östlichen Ostseeraum während des frühen Mittelalters.* Bericht der Römisch-Germanischen Kommission 69. Mainz. 564–647.
- Jansson, I. 1991. År 970/971 och vikingatidens kronologi. *Mammen: grav, kunst og samfund i vikingetid.* Jysk Arkæologisk Selskabs skrifter 28. M. Iversen, U. Näsman & J. Vellev (eds.). Højbjerg. 267–284.
- Jansson, I. 1992. Runstenen från Berezan. Katalog Nr. 312. *Viking og Hvidekrist.* E. Roesdahl (ed.). Copenhagen. 309.
- Jansson, I. 1997. Warfare, trade or colonisation? *The Rural Viking in Russia and Sweden.* Lectures. P. Hansson (ed.). Örebro. 9–64.
- Jansson, S. B. F. 1963. *Runinskrifter i Sverige.* Stockholm.
- Jesch, J. 2001. Ships and Men in the Late Viking Age. Woodbridge.
- Jesch, J. 2002. Eagles, Ravens and Wolves: Beasts of Battle, Symbols of Victory and Death. *The Scandinavians from the Vendel Period to the tenth century. An ethnographic Perspective.* J. Jesch (ed.). San Marino. 251–271.
- Jesch, J. In print. The warrior ideal in the late Viking Age. *The Martial Society, Aspects on Warriors, Fortifications and Social Change from the Bronze Age to the 18th Century.* L. Holmquist Olausson & M. Olausson (eds.). Stockholm

- Jones, S. 1980. 'Institutions of violence'. *Not Work Alone: A cross-cultural View of Activities Superfluous to Survival*. J. Chafas & R. Lewin (eds.). London. 98–111.
- Jones, S. 1996. Discourses of identity in the interpretation of the past. *Cultural Identity and Archaeology*. P. Graves-Brown, S. Jones & C. Gamble (eds.). London. 62–80.
- Jones, S. 1997. *The Archaeology of Ethnicity*. London.
- Jonsson, K. 2001. Mynten – en fyndkategori som speglar birkakrigarnas internationella kontakter. *Birkas krigare*. M. Olausson (ed.). Stockholm. 29–33.
- Jørgensen, L. 1987. Family burial practices and inheritance systems. The development of an Iron Age society from 500 BC to AD 1000 on Bornholm. *Acta Archaeologica* 58. Copenhagen. 17–53.
- Kahle, S. 2006. Edward Said hade kulturellt dubbelseende. Under strecket. *Svenska Dagbladet* 23 februari 2006.
(www.svd.se/dynamiskt/kultur/did_11920354.asp)
- Karlsson, L. 1983. *Nordisk Form*. Stockholm.
- Kazanski, M., Necessian, A. & Zuckerman, C. (eds.). 2000. *Les centres proto-urbains russes entre Scandinavie, Byzance et Orient*. Paris.
- Keegan, J. 1993. *A History of Warfare*. London
- Keeley, L. 1996. *War Before Civilization*. New York.
- Keen, M (ed.). 1999. *Medieval Warfare*. Oxford.
- Kitzler, L. 1997. *Rapport från utgrävningen av Garnisonen på Björkö* 1997. Rapport. Stockholms universitet.
- Kitzler, L. 2000. Odenssymbolik i Birkas garnison. *Fornvännen* 95. *Journal of Swedish Antiquarian Research*. Stockholm. 13–21.
- Kitzler Åhfeldt, L. 2000. The Sparlösa Monument and its Three Carvers. *Lund Archaeological Review* 6 (2000). Lund. 99–121.
- Kitzler Åhfeldt, L. 2002. *Work and Worship. Laser scanner analysis of Viking Age rune stones*. Diss. Stockholm.
- Klockhoff, M. 1989. Fornfynd i laboratoriet. *Fornvårdaren* 24. Stockholm. 31–43

- Klockhoff, M. 1993. Conservation by EDTA. Four applications. *Sources and Resources*. PACT 38. Rixenart. 505–518.
- Klockhoff, M. 2006. *Oriental Mounts from Birka's Garrison*. Appendix 1. Stockholm.
- Kristoffersen, S. 1992. Den germanske dyrestilen og kvinnegraver med reliefspanner. *K.A.N.* 1992. Tromsø. 40–57.
- Kristoffersen, S. 1995. Transformation in Migration Period Animal Art. *Norwegian Archaeological Review*, Vol. 28, No. 1, 1995. 1–17.
- Krusten, E. 2001. *Spjutspetsar från Birka – analys av fynd från gravar och Garnisonen*. CD-uppsats i laborativ arkeologi 2000/2001. Arkeologiska forskningslaboratoriet, Stockholms universitet. MA-thesis.
- Lager, L. 2004. Art as a Medium in Defining "Us" and "Them". *The European Frontier. Clashes and Compromises in the Middle Ages*. International symposium of the Culture Clash or Compromise (CCC) project and the Department of Archaeology, Lund University, held in Lund October 13–15 2000. Lund. 147–155.
- Larsson, M. G. 1990. *Runstenar och utlandsfärder*. Stockholm.
- Larsson, A. 2003. Oriental Warriors in Viking Age Scandinavia – nothing but an Illusion? *OFFA* 58, 2001. Neumünster. 141–154.
- Le Jan, R. 2000. Frankish giving of arms and rituals of power: continuity and change in the Carolingian period. *Rituals of Power*. F. Theuvs & J. L. Nelson (eds.). Leiden. 281–309.
- Leyser, K. 1982. *Medieval Germany and its Neighbours*. London.
- Leyser, K. 1994. Communications and Power in Medieval Europe. The Carolingian and Ottonian Centuries. T. Reuter (ed.). London.
- Lidén, K., Götherström, A. & Eriksson, G. 1997. Diet, gender and rank. *ISKOS* 11. 158–164.
- Lindbom, P. 1995. Pilspetsarna från Valsgärde 13. *TOR* vol. XXVII:2. Uppsala. 431–448.
- Lindbom, P. 1997. Det lätta kavalleriet och Valsgärde. *SIV Svealand i venedel- och vikingatid. Studier från delprojektet vid Uppsala Universitet*. Uppsala.

- Lindbom, P. 1997b. Strategiska förändringar av krigskonten under järnåldern, bågskyttets och kavalleriets introduktion på slagfältet. *STV Svealand i vandel- och vikingatid. Studier från delprojekten vid Uppsala Universitet*. Uppsala.
- Lindberger, M. 2001. The Falcon, the Raven and the Dove. Some bird motifs on medieval coins. *Eastern Connections Part One: The Falcon Motif. Birka Studies* V. B. Ambrosiani (ed.). Stockholm. 29–86.
- Linderholm, A., Hedenstierna-Jonson, C, Svensk, O. & Lidén, K. manus. Diet and status in Birka. Analysis of stable isotopes and grave goods.
- Lindkvist, T. 1988. *Plundring, skatter och den feodala statens framväxt*. Uppsala.
- Lopez, R. S. 1971. *The Commercial Revolution of the Middle Ages, 950–1350*. Englewood Cliffs.
- Lundström, F. 2006. *Det vikingatida bågskyttet i Birka – en framstående stridskonst med främmande inslag*. CD-uppsats i laborativ arkeologi 2005/2006. Arkeologiska forskningslaboratoriet, Stockholms universitet. MA-thesis.
- Löfstrand, E. 2004. Antinormanismen återuppstår. *Bulletinen* 2/04, juni 2004. Sällskapet för studier av Ryssland, Central- och Östeuropa samt Centralasien. (<http://www.sallskapet.org/bull/bull22004.pdf>)
- Magnus, B. 1995. Praktspennen fra Gillberga. *Från bergslag och bondebygd*. Örebro läns museum. Örebro. 29–41
- Melnikova, E. A. 1996. *The Eastern World of the Vikings*. Eight Essays about Scandinavian and Easterns Europe in the Early Middle Ages. Göteborg.
- Monić Nordin, J. 2005. När makten blev synlig I södra Dalarna – sen medeltid I södra Dalarna. Stockholm.
- Muldner, G. & Richards, M. P. 2005. Fast or feast: reconstructing diet in later medieval England by stable isotope analysis. *Journal of Archaeological Science* 32. 39–48.
- Müller, S. 1880. Dyreornamentikken i Norden, dens Oprindelse, Udvikling og Forhold til samtidige Stilarter. *Aarbøger for Nordisk Oldkyndighed og Historie* 1880. 185–403.
- Nelson, J. 1989. Ninth-Century Knighthood: The Evidence of Nithard. *Studies in Medieval History presented to R. Allen Brown*. C. Harper-Bill, C. Holdsworth & J. L. Nelson (eds.). Woodbridge. 255–266

- Nelson, J. 1998. Violence in the Carolingian world and the ritualization of ninth-century warfare. *Violence and Society in the early medieval West*. G. Halsall (ed.). Woodbridge. 90–107.
- Nicolle, D. 1999. *Armies of Medieval Russia 50–1250*. Oxford.
- Nicolle, D (ed.). 2002. *Companion to Medieval Arms and Armour*. Woodbridge.
- Nithard. *Histories: Carolingian chronicles*. Engl. transl. B. W. Scholz & B. Rogers 1970. Ann Arbor.
- Noonan, T. S. 1992. Byzantium and the Khazars: a special relationship? *Byzantine Diplomacy*. J. Shepard & S. Franklin (eds.). Cambridge. 109–132.
- Noonan, T. 1997. Scandinavians in European Russia. *The Oxford Illustrated History of the Vikings*. P. Sawyer (ed.). Oxford. 134–155.
- Nordberg, A. 2003. *Krigarna i Odins sal*. Diss. Stockholm.
- Nosov, E. N. 1990. *Novgorodskoe (Rjurikovo Gorodische)*. Leningrad.
- Nosov, E. N. 1993. The Problem of the Emergence of Early Urban Centres in Northern Russia. *Cultural Transformations and Interactions in Eastern Europe*. J. Chapman & P. Dolukhanov (eds.). Avebury. 236–256
- Nosov, E. N. 1994. The emergence and development of Russian towns: some outline ideas. *Archaeologia Polona* 32. Warsawa. 185–196
- Nosov, E. 1998. The First Scandinavians in Northern Rus'. *Vikingi i slavjane : ucěnye, politiki, diplomaty o russko-skandinavskich otnošeni-jach* A, Hedman & A, Kirpičnikov (eds.) St Petersburg. 56–82.
- Nylén, E. 1983. Vendelryttaren, en länk mellan öst och väst – forntid och medeltid. *TOR* vol. XIX. 1980–1982. Uppsala. 163–188.
- Nylén, E. & Schönback, B. 1994. *Tuna i Badelunda. Guld kvinnor båtar*. Västerås.
- Näsman, U. 2000. Raids, Migrations and Kingdoms – the Danish Case. *Acta Archaeologica* Vol. 71. 1–7.
- Näsström, B-M. 2002. *Blot*. Stockholm.
- Näsström, B-M. 2006. *Bärsärkarna. Vikingatidens elitsoldater*. Stockholm.

- Nørgård Jørgensen, A. 1999. *Waffen und Gräber. Skandinavische Waffen-gräber 530–800 n. Chr. Typologische und Chronologische Studien.* Nordiske Fortidsminder. Copenhagen.
- Nørgård Jørgensen, A. & Clausen, B. L. (eds.). 1997. *Military Aspects of Scandinavian Society in a European Perspective, AD 1–1300.* PNM vol. 2. Copenhagen.
- Nørlund, P. 1948. *Trelleborg.* Nordiske fortidsminder 4. Copenhagen
- Olausson, M. 1995. *Det inneslutna rummet – om kultiska hägnader, fornborgar och befästa gårdar i Uppland från 1300 f. Kr till Kristi födelse.* Diss. Stockholm
- Olausson, M. 2000. Husabyar, krig och krigare. *En bok om Husbyar.* M. Olausson (red.). Stockholm. 125–150.
- Olausson, M. 2001. Krigarens resa och hemkomst. *Birkas krigare.* M. Olausson (ed.). Stockholm. 21–27.
- Olausson, M. & Lindström, J. 2003. *Fållnäs. Arkeologiska undersökningar del 1. Borgar och Befästningsverk i Mellansverige 400 – 1100 e.kr.* Rapport 3. Stockholm.
- Olsen, O. & Schmidt, H. 1977. *Fyrkat. En jysk vikingeborg. I. Borgen och bebyggelsen.* Copenhagen.
- Panofsky, E. 1939. *Studies in Iconology. Humanistic Themes in the Art of the Renaissance.* Oxford.
- Pauli Jensen, X., Jørgensen, L. & Lund Hansen, U. 2003. The Germanic army. Warriors, soldiers and officers. *The Spoils of Victory.* L. Jørgensen, B. Storgaard & L. Gebauer Thomsen (eds.). Copenhagen. 310–328.
- Pedersen, A. 1997. Weapon and riding gear in burials – evidence of military and social rank in 10th century Denmark? *Military Aspects of Scandinavian Society.* PNM vol. 2. A. Nørgård Jørgensen & B. L. Clausen (eds.). Copenhagen. 123–135.
- Petersen, J. 1919. *De norske vikingesverd: en typologisk-kronologisk studie over vikingetidens vaaben.* Kristiania.
- Peterson, L. 1989. *Svenskt runordsregister. Word index to the Swedish runic inscriptions.* Uppsala.
- Prestwich, M. 1996. *Armies and warfare in the Middle Ages: the English experience.* New Haven.

- Prestwich, M. 2001. The garrisoning of English medieval castles. *The Normans and their Adversaries at War*. R. P. Abels & B. S. Bachrach (eds.). Woodbridge. 185–200.
- Psellus, Michael. *Chronographia*. Engl. transl. E. R. A. Sewter. 1953. Yale University Press.
- Reuter, T. 1985. Plunder and Tribute in the Carolingian Empire. *Transactions of the Royal Historical Society* 5th ser. 35.
- Reuter, T. 1997. The recruitment of armies in the Early Middle Ages: what can we know? *Military Aspects of Scandinavian Society*. PNM vol. 2. A. Nørgård Jørgensen & B. L. Clausen (eds.). Copenhagen. 32–37.
- Richards, M. P. & Hedges, R. E. M. 1999. Stable Isotope Evidence for Similarities in the Types of Marine Foods Used by Late Mesolithic Humans at Sites Along the Atlantic Coast of Europe. *Journal of Archaeological Science* 26. 717–722.
- Richards, M. P., Fuller, B. T. & Hedges, R. E. M. 2001. Sulphur isotopic variation in ancient bone collagen from Europe: implications for human palaeodiet, residence mobility, and modern pollutant studies. *Earth and Planetary Science Letters* 191. 185–190.
- Richards, M.P., Fuller, B. T., Sponheimer, M., Robinson, T. & Ayliffe, L. 2003. Sulphur isotopes in palaeodietary studies: a review and results from a controlled feeding experiment. *International Journal of Osteoarchaeology* 13. 37–45.
- Rimbert. Ansgars liv. Swedish transl. E. Odelman. *Boken om Ansgar*. Stockholm 1986.
- Rispling, G. 1998. Lista över myntfynd på Birka år 1998. Up, Adelsö sn, Björkö, Garnisonen. Hopat fynd. Rapport.
- Roesdahl, E. 1987. The Danish geometrical fortresses and their context. *Anglo-Norman Studies IX*. Proceedings of the Battle Conference 1986. Woodbridge.
- Royal Frankish Annals. *Carolingian chronicles* : Engl. transl. B. W. Scholz & B. Rogers 1970. Ann Arbor.
- Runciman, W. G. 1998. Greek Hoplites, Warrior Culture, and Indirect Bias. *The Journal of the Royal Anthropological Institute*, Vol. 4, No. 4. 731–751.
- The Russian Primary Chronicle*. Swedish translation: *Nestorskrönikan*. Translated by G. Oxenstierna. 1998. Stockholm.

- Sackett, J. R. 1977. The Meaning of Style in Archaeology: A General Model. *American Antiquity*, Vol. 42, No. 3. 369–380.
- Sackett, J. R. 1985. Style and Ethnicity in the Kalahari: A Reply to Wiessner. *American Antiquity*, Vol. 50, No. 1. 154–159.
- Said, E. W. 1985. Orientalism Reconsidered. *Cultural Critique*, No. 1. 89–107.
- Salin, B. 1904. *Die altgermanische Thierornamentik*. Stockholm.
- Sanders, A. 1999. Anthropology of warriors. *Encyclopedia of Violence, Peace and Conflict* 3. London. 773–784.
- Schlesinger, W. 1953. Herrschaft und Gefolgschaft in der germanisch-deutschen Verfassungsgeschichte. *Historisches Zeitschrift* 176. 225–275.
- Schortman, E. 1989. Interregional Interaction in Prehistory: The Need for a new Perspective. *American Antiquity*, Vol. 54, No. 11. 52–65.
- Sedyh, V. 2000. Timerevo – un centre proto-urbain sur la grande voie de la Volga. *Les centres proto-urbains russes entre Scandinavie, Byzance et Orient*. M. Kazanski, A. Nercessian & C. Zuckerman (eds.). Paris. 173–197.
- Sedykh, V. 2006. A Viking Age site in the upper Volga area and its Scandinavian connections. Seminar 2006–04–25 at the Department of Archaeology and Classical Studies, Stockholm University.
- Shepard, J. 1992. The Uses of the Franks in Eleventh-Century Byzantium. *Anglo-Norman Studies* 15. *The Proceedings of the Battle Conference* 1992. Ipswich. 275–305.
- Shetelig, H. 1917–1927. *Osebergfundet* 1–3, 5. Kristiania.
- Sizov, V. I. 1902. *Kurgani Smolenskoj gubernia*. MAR 28. St. Petersburg.
- Skaaning, P. 1992. *Harald Blåtands sidste kamp. Trelleborgene og brydningerne i dansk vikingetid 979–983*. Lyngby.
- Smyth, A. P. 1998. The Emergence of English Identity, 700–1000. *Medieval Europeans*. A. P. Smyth (ed.). New York. 24–52.
- Smythe, D. C. 1992. Why do barbarians stand round the emperor at diplomatic receptions? *Byzantine Diplomacy*. J. Shepard & S. Franklin (eds.). Cambridge. 305–312.
- Spufford, P. 2002. *Power and Profit. The Merchant in Medieval Europe*. London.

- Stalsberg, A. 1988. The Scandinavian Viking Age finds in Rus'. *Bericht der Römisch-Germanischen Kommission* bd 69. Frankfurt. 448–471
- Stephenson, P. 2004. *Byzantium's Balkan Frontier*. Cambridge.
- Steuer, H. 1968. Zur Bewaffnung und Sozialstruktur der Merowingerzeit. Ein Beitrag zur Forschungsmethode. *Nachrichten aus Niedersachsens Urgeschichte* 34. Hildesheim. 19–33.
- Steuer, H. 1982. *Frühgeschichtliche Sozialstrukturen in Mitteleuropa*. Diss. Göttingen.
- Stjerna, N. 1999. *Götavirke*. Arkeologiska undersökningar av en långvall RAÄ 12, Hageby, RAÄ 111, Hylinge, Västra Husby sn, Östergötland 1999. Borgar och Befästningsverk i Mellansverige 400 – 1100 e.kr. Rapport 1. Stockholms universitet.
- Stjerna, N. 2001. Birkas krigare och deras utrustning. *Birkas krigare*. M. Olausson (red.). Stockholm.
- Stjerna, N. 2004. En stäppnomadisk rustning från Birka. *Fornvännen* 99 (2004). Stockholm. 27–32.
- Stjerna, N. In print. Viking-age weapons found in Eastern Middle Sweden. *The Martial Society, Aspects on Warriors, Fortifications and Social Change from the Bronze Age to the 18th Century*. L. Holmquist Olausson & M. Olausson (eds.). Stockholm
- Stolpe, H. 1877. Till Kongl. Vetenskaps Akademien! Summarisk redogörelse för de år 1877 utförda undersökningarna på Björkö i Mälaren. *Birka Vikingastaden* 2. B. Ambrosiani & b. G. Eriksson (eds.). Stockholm. 89–90.
- Strömberg, M. 1951. Schwertortbänder mit Vogelmotiven aus der Wikingerzeit. *Meddelanden från Lunds universitets Historiska museum* 1950–51, IV. H. Arbman (ed.). Lund. 221–243.
- Sturluson, Snorri. *Heimskringla. History of the Kings of Norway*. Engl. transl. L. M. Hollander 1964. Austin.
- Sävborg, D. 1997. Sorg och elegi i Eddans hjältediktning. Diss. Stockholm.
- Thedéén, S. 2005. Till frågan om hövdingadömet under bronsåldern. *Mellan sten och järn*. Del I. J. Goldhan (ed.). Göteborg. 385–401.
- Thordeman, B. 1939. *Armour from the Battle of Wisby 1361*. I. Text. Stockholm.

- Thordeman, B. 1940. Rustningarna i Kalevala. *Fornvännen* 35 (1940). Stockholm.173–186.
- Thunmark-Nylén, L. 1991. Gotlands vikingatid och dess kammar. *Gotländskt Arkiv* 1991. Visby. 109–128.
- Thålin Bergman, L. 2005. *Excavations at Helgö XV. Weapon Investigations*. L. Thålin Bergman & B. Arrhenius (eds.). Stockholm.
- Treadgold, W. 1992. The Army in the works of Constantine Porphyrogenitus. *Rivista di studi bizantini e neoellenici* N. S. 29. Roma 77–162.
- Treadgold, W. 1995. *Byzantium and Its Army* 284–1081. Stanford.
- Trotzig, G. 2004. Trons försvarare i Birka. *Fornvännen* 99. *Journal of Swedish Research*. Stockholm. 197–208.
- Trotzig, G. & Klockhoff, M. 2004. Ethics in Archaeological Preservation. *Swedish Archaeologists on Ethics*. Lindome. 163–175.
- Törnquist, L. 1993. *Sjökungens märke och riddarens baner*. BA thesis. Stockholm.
- Underwood, R. 1999. *Anglo-Saxon Weapons and Warfare*. Stroud.
- Verbruggen, J. F. 1997. *The Art of Warfare in Western Europe during the Middle Ages*. Woodbridge.
- Vernadsky, G. 1948. *A history of Russia. 2, Kievan Russia*. New Haven.
- Wallgren, K. 2005. Yxorna på Garnisonen. B-uppsats i arkeologi, Stockholms universitet 2005.
- Wegraeus, E. 1971. *Vikingatida pilspetsar i Sverige – en förbisedd föremålsgrupp*. Del I. Diss. Uppsala.
- Wegraeus, E. 1973. Pilspetsar under vikingatid. *TOR*. Vol. XV 1972 – 1973. Uppsala.
- Wegraeus, E. 1986. Die Pfeilspitzen von Birka. *Birka* II:2. *Systematischen Analysen der Gräberfunde*. G. Arwidsson (red.). Stockholm.
- Weibull, C. 1974. *Die Geaten des Beowulfepos und die dänischen Trelleburgen*. Acta Regiae Societatis scientiarum et litterarum Gothoburgensis. Humaniora 10. Göteborg
- Westerholm, M. 2001. Bronserade nycklar med fågelmotiv från Birkas garnison. *CD-uppsatser i laborativ arkeologi* 00/01. Stockholm.

- Wiessner, P. 1983. Style and Social Information in Kalahari San Projectile Points. *American Antiquity*, Vol. 48, No. 2 (1983). 253–276.
- Wiessner, P. 1985. Style or Isochrestic Variation? A Reply to Sackett. *American Antiquity*, Vol. 50, No. 1. 160–166.
- Wiessner, P. 1989. Style and changing relations between the individual and society. *The Meaning of Things*. I. Hodder (ed.). London. 56–63.
- Wigh, B. 2001. Djurbenen från Garnisonen på Borgberget. *Birkas krigare*. Stockholm. 55–57.
- Wigh, B. 2001b. *Animal Husbandry in the Viking Age Town of Birka and its Hinterland*. Excavations in the Black Earth 1990–1995. Birka Studies 7. Diss. Stockholm.
- Wilson, D. 1995. *Vikingatidens konst*. Lund
- Wobst, M. 1977. Stylistic behaviour and information exchange. *For the Director: Research Essays in Honor of James B. Griffin*, C. E. Cleland (ed.). Michigan. 317–342.
- Wojnar Johansson, M. 2006. Metal analysis of the mounts from Birka's Garrison. *The Oriental Mounts from Birka's Garrison*. Appendix II. C. Hedenstierna-Jonson & L. Holmquist Olausson. Stockholm. 86–91.
- Wojnar Johansson, M. 2006b. Uppdragsrapport Nr 38, SEM analys av be-
slag från Birkas garnison. Arkeologiska forskningslaboratoriet. Stock-
holms universitet,
- Wählander, L. 1998. Birkas stadsvall och dess förlängning fram till Borg. *CD-uppsatser i laborativ arkeologi* 97/98, del I. Stockholm.

Theses and Papers in Scientific Archaeology

Published by the Archaeological Research Laboratory, Stockholm University.

ISSN 1400-7835

1. Kerstin Lidén: Prehistoric Diet Transitions. 1995.
2. Erik Sperber: Balances, Weights and Weighing in Ancient and Early Medieval Sweden. 1996.
3. Sven Isaksson: Food and Rank in Early Medieval Time. 2000.
4. Anders Götherström: Acquired or Inherited Prestige? 2001.
5. Gunilla Eriksson: Norm and Difference. 2003.
6. Emilia Nuorala: Molecular Palaeopathology. 2004.
7. Ludvig Pappmehl Dufay: Shaping an Identity. 2006.
8. Charlotte Hedenstierna Jonson: The Birka Warrior. 2006.