



Kaupang Excavation Project
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INTO THE MELTING POT



BY UNN PEDERSEN

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Non-ferrous Metalworkers in Viking-period Kaupang

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Foreword

During my work with the non-ferrous metalworking finds from Kaupang, I have drawn inspiration from *De diversis artibus*, written by a master-smith. The book you have in front of you now is of a different kind: it is the apprentice's attempt to put together all that she has learnt. The masters will no doubt shake their heads over this and that, but they have been indispensable in the journey. Ragnar Løchen, Anders Söderberg, Ken Ravn Hedegaard, and Ny Björn Gustafsson are the most generous master-smiths in the world, and not secretive about their mysteries. They are due the greatest thanks for having shared their scholarly and practical knowledge with a beginner, time and again. Similarly I want to thank the travelling experts, Björn Ambrosiani, Else Roesdahl, and Claus Feveile, along with our local specialist Signe Horn Fuglesang, who have shared their great knowledge. Arne Jouttijärvi is due thanks for very agreeable collaboration, and Inge Brynhi for his valuable help with mineral identification. Dagfinn Skre, the project leader and my supervisor, has supplied me with an incredible workshop, not only quite literally, but also in the more figurative sense. The Kaupang Excavation Project has been a superb place of learning for the student, the Finds Leader, and the postgraduate researcher. Our association with the Department of Archaeology, Conservation, and History of the University of Oslo has provided me with a pleasant and stimulating environment in which to work, which I set great value by. Many thanks to all of you who were in Blindernveien 11 either throughout or for some of the time in which this book was being produced.

As a contributor to a major research project, I have gained a great deal from being a member of a wide network, and my colleagues in the Kaupang Excavation Project have likewise helped me greatly.

Julie K. Øhre Askjem, Elise Naumann, Birgit Wilster-Hansen, Elin Storbekk, Guro Hjulstad, Vegard Vike, Bjørn-Håkon Eketuft Rygh, Even Ballangrud Andersen, Gry Wiker, Charlotte Melsom, Heid Gjøstein Resi, Steinar Kristensen, Christoph Kilger, Lars Forseth and Lars Pilø have made many useful contributions and been available both in and outside of the hours of work. I wish also to thank Eirik Irgens Johnsen for many fine photographs and the pleasure of working together for many years. The Pedersen family has also supported me with good advice and encouragement, and Mum has sharpened her red pencil innumerable times. Bjarne Gaut and Lars Erik Gjerpe have been my challenging critics and great supporters all the way through.

Into the Melting Pot: Non-ferrous Metalworkers in Viking-period Kaupang is a slightly modified version of my PhD thesis *I smeltedigelen. Finsmedene i vikingtidsbyen Kaupang*, which was submitted on 26 March 2010 and defended publicly at the University of Oslo on 26 November that year. Thanks to my two opponents, Lars Stenvik and Lars Jørgensen[†], for critique and praise which enabled the work to advance. The book has been planned and written as the fourth volume in the Kaupang Excavation Project Publication Series, but circumstances beyond my control meant that the funding was lost before the thesis was completed. The consequence was that the text remained waiting longer than one would have wished. Many thanks to Jón Viðar Sigurðsson and Brit Solli for sound advice and decisive support in the effort to secure the funding; without you, it would have cost me much more to bring this publication about. Warm thanks to John Hines, who has translated the text and made this final stage both agreeable and informative.

Meticulous fieldwork at Kaupang from 1998 to 2003 produced large quantities of finds representing a variety of forms of craftwork. The aim of this volume is to provide a better understanding of the craftspeople who were working with non-ferrous metals: gold, silver, copper alloys, lead, and tin. What were their accomplishments and capabilities, and what was their position in Viking-period society? These questions will be explored through qualitative and quantitative studies of the craft waste from Kaupang and by discussing the characteristics, volume, purposes, and customers of this production. The practical side of the craftwork will be given careful attention, which will be the basis for the discussion of the contextual framework within which craft was practised. An ultimate objective is to shed light on the inter-relationship between the craftspeople and other social groups within Viking-period society. Since the waste from non-ferrous metalworking is an extensive and familiar feature of the archaeological evidence from Kaupang, this may also contribute to a greater knowledge of the social dynamics of the Viking-period town.

It is relatively easy to identify the finds from non-ferrous metalworking, but more difficult to find a satisfactory general term for the craftspeople. 'Metalsmith' also includes those who were working with iron, and is too general. A study of ironworking at Kaupang falls outside the scope of this work, as there are fundamental differences between the technology associated with iron and the working of other metals (Bayley 1992:745). 'Metalcaster', or the more specific term 'bronzecaster', is frequently used in scholarly literature, but both terms are too narrow, when the finds from Kaupang are looked at as a whole. Various different metals were cast, and a range of metals were also hammered and consolidated. To start with, I shall refer to the craftworkers concerned as 'non-ferrous metalworkers'. The analyses of the finds will then provide a basis for an assessment of whether or not it is possible to identify more specialized non-

ferrous metalworkers, such as bronzecasters or goldsmiths, or less specialized smiths who also worked with other materials.

In written sources, we find the terms *smiðr*, *smith* and *smiþer* in Old Norwegian, Old Danish and Old Swedish respectively (Stigum 1971). A long list of different smiths such as the *gull-smiðr* (goldsmith), *silfr-smiðr* (silversmith), *járn-smiðr* ('iron-' or blacksmith), *tré-smiðr* ('woodsmith' or carpenter), *skip-smiðr* (shipwright), *skepti-smiðr* (shaftmaker) and *skó-smiðr* (shoemaker) appears (Cleasby et al. 1991 [1869]:572; Bjorvand and Lindeman 2000:820–821). The term thus is not limited to the blacksmith or metalworker, but is rather used in the same way as our general term 'craftworker'. The range of terms from the Old Norse sources show that a distinction was drawn between different types of smiths early in the Middle Ages. The question of whether this was also the case in the Viking Period is one for this book. That discussion has to be limited by the fact that the working of organic material has left practically no trace at Kaupang, while ironworking is outside of the range of this study and has not otherwise been discussed. As a result I shall have problems in determining whether iron and other metals were worked by the same craftspeople or not. To remedy this problem I shall, in one specifically chosen context, look in more detail at the possible occurrence of waste from ironworking. Results from other contemporary production sites will also be included to shed more light on this question.

The waste from non-ferrous metalworking at Kaupang is both voluminous and complex, and I have decided to include all categories of finds, as my aim is to gain the broadest possible information about these artisans. The heterogeneous evidence is able to give us a better view of the collective capacity of the non-ferrous metalworkers and their level of accomplishment, and it offers different angles of view from which the extent and character of produc-

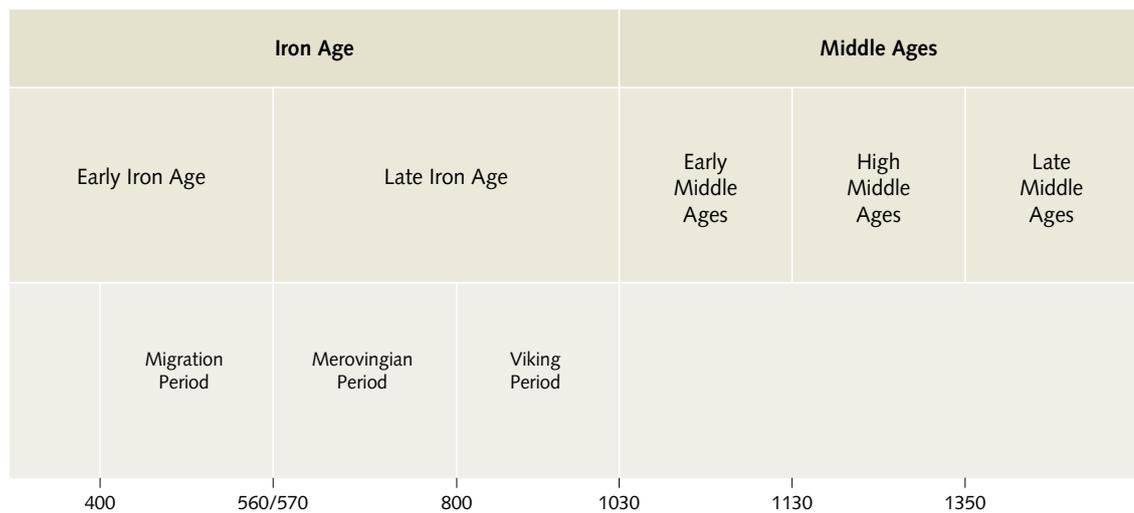


Figure 1.1 *Timeline of the standard Norwegian archaeological periodization and its terminology, as used in this volume.*

tion can be assessed. I shall therefore deal with many fields, where it would be possible to have a deeper understanding that I can achieve; in many cases, however, I am able to make use of detailed studies of particular, specialized processes and artefact-types.

The non-ferrous metalworking finds from Kaupang are not unique. On the contrary, they have counterparts at a number of contemporary sites. Analysis of this group of evidence is, however, relatively new in Viking Period Archaeology, and there is a crying need for greater information on crucial groups of artefacts and a more basic understanding of the organization of production. The evidence from Kaupang can thus make a contribution to current research on this subject.

The metalworking finds from the settlement area at Kaupang are the basis of this work, and the site is central to a discussion of the activities of non-ferrous metalworkers in the Early Viking Period. Through a

short introduction to the site and its research history, *Chapter 2* will introduce which ideas about Kaupang I take as my starting point. In *Chapter 3*, the research context of my discussion of metalworking will be presented, and I shall outline the topics that will subsequently be pursued. The artefactual finds from the fieldwork at Kaupang 1998–2003 are subjected to a detailed analysis in *Chapter 4*, in order to establish some grasp of the practicalities of craftwork. The presentation of the evidence is intended to shed light on the processes that the non-ferrous metalworkers at Kaupang were masters of, their technical skills, what raw materials they had available, what cultural influences affected production, and where the craftwork was located. Detailed analysis of the evidence constitutes a fundamental part in this work, but it is not my intention to treat metalworking technology in isolation. The studies of the production waste will rather form a basis for a discussion of the framework within which the craft was practised. In *Chapter 5* the various categories of find will be discussed as a whole in order to make a comprehensive presentation of the work of the non-ferrous metalworkers. This will provide a basis for assessments of craft-production and the position of the non-ferrous metalworkers in the Viking-period town.

 Kaupang is a key context within which the activities of non-ferrous metalworkers in the early Viking Period can be discussed. In this chapter, I shall briefly review previous research on the site and introduce the interpretations of the site that I shall use as my starting points. The objective is to outline the current state of knowledge and to identify which questions the craft waste might answer.

2.1 The Viking-period town of Kaupang

Kaupang in the Viking Period comprised an urban settlement surrounded by major cemeteries. The settlement area itself was identified through Charlotte Blindheim's excavations from 1956 to 1974 (Blindheim 1969; Tollnes 1998; Pilø 2007a), but Kaupang has been discussed as a possible trading centre since the beginning of the 19th century (Skre 2007d:29–30). On the strength of significant quantities of imported items, Blindheim (1969:15) interpreted the site as a trading site with international links. Excavations and surface surveys from 1998 to 2003 directed by Dagfinn Skre have shown that the settlement was divided into plots, and that it probably was occupied all year round (Pilø 2007d:164, 2007c:198–199). Skre (2007j:454–455) therefore identifies Kaupang as a Viking-period town. This description can be debated (e.g. Hodges 1982; Sindbæk 2007:70–74; Urbańczyk 2008; Skre 2008), but the term will be used here, because it introduces two ideas of vital importance to my understanding of Kaupang. The site is clearly distinct from the surrounding agrarian society and it constitutes a heterogeneous social arena characterized by much more than trade alone (Pedersen 2000:11–14).

Using the term 'Viking-period town', I wish also to emphasize the point that Kaupang is not unique (fig. 2.1). In the 9th century it was one of four Viking-period towns in Scandinavia, the others being Ribe, Hedeby, and Birka (Skre 2007j:454). There are several contemporary sites with evidence of trade and craft (Callmer 1995; Clarke and Ambrosiani 1995; Ulriksen 1998) but importance has been attached to the point that the towns are distinguished by year-round

settlement on regularly divided plots (Skre 2007j:53–54) and particular artefactual inventories (Sindbæk 2005:70–97).

Søren Sindbæk stressed the point that metalcasting waste occurs in significant quantities at Hedeby, Ribe, Birka and Kaupang, but is almost absent from other types of settlement. He interprets this as a reflex of craftwork having required regular access to imported raw materials (Sindbæk 2005:94–95, fig. 4.6). Sindbæk's conclusion is based upon a comprehensive analysis of the finds from selected sites, and metalcasting is only one of several activities that were studied. In Chapters 4 and 5 I shall undertake a more detailed examination of the level of importation of raw materials into Kaupang. I shall further, as far as possible, assess how far characteristic features of the Kaupang material are also found in the other Viking-period towns. This evaluation will be based upon the publications available, and is the basis for a discussion of whether the general similarities between the towns are also reflected in the metalworking evidence. Sindbæk attaches importance to quantitative aspects while I shall examine qualitative aspects too. With my particular interest in non-ferrous metalworking I shall also consider whether there are any non-urban sites with this type of waste, and discuss whether or not there are fundamental differences and similarities in metalworking at urban and non-urban sites, respectively.

Kaupang was founded around A.D. 800, when a substantial area on the west side of a sea channel was divided into plots (Pedersen and Pilø 2007:fig. 9.2; Pilø 2007c:192–193). In the area of the *main research excavation 2000–2002* (MRE) eight plots were iden-