

The Mint in the Nidaros Archbishop's Palace
Coin production under Archbishop Gaute Ivarsson
(1475–1510)

Otto Lohne, Jon Anders Risvaag, Pål Ulseth and Jardar Lohne

© DKNVS og Tapir Akademisk Forlag, Trondheim 2011

ISBN 978-82-519-2750-5

ISSN 0368-6310

Trykk og innbinding: AIT Oslo AS

Det må ikke kopieres fra denne boka ut over det som er tillatt etter bestemmelser i lov om opphavsrett til åndsverk, og avtaler om kopiering inngått med Kopinor.

Tapir Akademisk Forlag
7005 TRONDHEIM
Tlf.: 73 59 32 10
E-post: post@tapirforlag.no
www.tapirforlag.no

Forlagsredaktør: terje.togersen@tapirforlag.no



Transactions of
The Royal Norwegian Society
of Sciences and Letters
(Trans. R. Norw. Soc. Sci. Lett.
2010(1)1-177)

The Mint in the Nidaros Archbishop's Palace. Coin production under Archbishop Gaute Ivarsson (1475–1510)

by

Otto Lohne¹, Jon Anders Risvaag², Pål Ulseth¹ and Jardar Lohne

ABSTRACT

Archaeological excavations in the Nidaros Archbishop's Palace in 1991–1995 revealed the remains of three medieval mints, alongside with remains reflecting the whole production process of coins. An authentic mint workshop is today exposed *in situ* in the museum constructed over the excavation site, and the richness of the finds makes this mint unique in its kind. The project *Erkebiskopenes utmynting på 1500-tallet* has undertaken to deepen our

¹ Dept. Mat. Science and Eng, NTNU, Trondheim Norway

² Museum of Natural History and Archaeology, Section of Archaeology and Cultural History, NTNU, Trondheim, Norway

understanding of the production processes and the importance of the coinage under the office of Archbishop Gaute Ivarsson.

The multidisciplinary analyses presented in this paper permit us to conclude the following:

1) The finds document coining activity in specified houses and enable us to follow the total production chain involved in coin production, from assaying of silver-containing materials through casting, hammering, surface treatments and selection of dies for the final imprinting stroke.

2) The high number of small bone-ash cupels indicates that silver for the coins was coming from silver-containing objects and not from ore.

3) The hammering and intermittent annealing procedures are labour intensive processes. By restricting the workforce to solely one mint master and one assistant, the king made it easy to limit the amount of coins coming from the archbishop's mint and to control the activity.

4) A number of 282 Norwegian hvids are known from the period when Archbishop Gaute Ivarsson was in office. Studies of die-links, weight and silver-content lead to the conclusion that 192 of these coins were produced in the workshop in the Archbishop's Palace, from which 51 obverse and 29 reverse dies have been identified.

5) By establishing die links it is possible to make assumptions of the number of dies used. By estimating the number of coins that could be produced per die, suggestions on the total number of coins produced during the office of Archbishop Gaute Ivarsson end up at 600,000 hvids. This number is also in reasonable agreement with estimates made from a technical point of view when looking into the laborious processing steps from casting bullion with the correct fineness to the finished hvid.

6) Tithe and land-rent was the main income to the archbishopric. The value of the produced coins is estimated to 28 % of the tithe or 42 % of the land-rent. The profit of the coin production, however, may be about 200 mark annually equivalent to 4 % of the tithe or 7 % of the land-rent.

7) The low margins indicate that the production of hvids was motivated more by its political and symbolic significance for the archbishop than by profit.

CONTENTS

Abstract	1
Contents.....	5
Preface.....	9
List of figures and tables	13
1 Introduction	17
1.1 The archbishops' mints	18
1.2 The three last archbishops of Nidaros	19
1.3 Gaute Ivarsson.....	21
1.4 Three successive mints 1500–1537	23
Part I A numismatic perspective	31
2 The coinage under Gaute Ivarsson	33
2.1 Introduction	33
2.2 Coinage in Norway in the 11 th to 16 th centuries	34
2.3 Ecclesiastical coinage 1483–1510.....	38
2.4 Coinage in Norway during the office of Gaute Ivarsson.....	40
2.5 Categories of coins, production sites and issuers	42
2.5.1 Pennings – introductory remarks.....	43
2.5.2 Hvids – introductory remarks.....	45
3 Gaute Ivarsson's hvids	47
3.1 Iconography of hvids from the undisclosed mint	47
3.2 Die link study – description of the procedures.....	50
3.3 Hypothesis	54
3.4 Die link study – types and legends.....	54
3.5 Types	56
3.6 Chains.....	62
3.6.1 Chain 7 – types IV, VI and VII	62
3.6.2 Chains 8 and 9 – type V	65

3.6.3 Chains 10–14 – archbishop type	66
3.7 Location of the mint and attribution of issuer	69
3.8 Two scenarios for the coinage in Trondheim	75
3.9 Weight	76
3.10 Diameter	79
3.11 Die axis	80
3.12 Silver content	80
4 Gaute Ivarsson’s pennings	83
4.1 Types and dies	84
4.2 Diameter	85
4.3 Weight	86
4.4 Silver content	87
4.5 Summary Part 1 – the number of coins produced	88
Part II A technological perspective	91
5 Documentation of coin production related to finds	93
5.1 Introduction	93
5.2 Bone-ash cupels and crucibles	97
5.2.1 Bone-ash cupels	98
5.2.2 Crucibles	102
5.3 Hammered rods	104
5.3.1 Descriptions of the surface topography	105
5.3.2 Microstructures	108
5.4 Blanks	113
5.5 Surface preparation of blanks before striking – “white washing”	115
5.6 Dies	117
5.7 Hvids	117
5.8 Summary Part II – the processing steps in the production of hvids ...	117
6 Conclusions and context	121
6.1 Conclusions from the numismatic and technological perspectives	121

6.2 The economic and political effects of the coin production.....	125
6.2.1 Economic effects	125
6.2.2 Political and symbolic significance	130
6.3 Epilogue	133
6.4 Acknowledgements	133
7 Bibliography.....	135
Appendices.....	141
8 Appendix 1 Weight distribution within the types.....	143
9 Appendix 2 Diagram Die Axis.....	145
10 Appendix 3 Kings and archbishops of Medieval Norway.....	147
11 Appendix 4 Introduction to the catalogue and catalogue	149
12 Appendix 5 Plates.....	167
Notes	172