LILLI FRANSEN, ANNA NØRGAARD AND ELSE ØSTERGÅRD

MEDIEVAL GARMENTS RECONSTRUCTED

Norse Clothing Patterns

Aarhus University Press

Medieval Garments Reconstructed

Medieval Garments Reconstructed

Norse Clothing Patterns

By Lilli Fransen, Anna Nørgaard and Else Østergård

Aarhus University Press

Medieval Garments Reconstructed
Norse Clothing Patterns
© Aarhus University Press and the Authors 2011
Cover: Grafisk SIGNS
Cover photo: Peter Danstrøm
Cover illustration: Lilli Fransen
Photos in chapter 3 by Roberto Fortuna
Layout: Grafisk SIGNS
Typeface: LinotypeSyntaxOsF
ISBN 978 87 7934 901 8

Aarhus University Press
Langelandsgade 177
DK-8200 Aarhus N
www.unipress.dk

Gazelle Books
White Cross Mills
Hightown, Lancaster, LA1 4XS
United Kingdom
www.gazellebookservices.co.uk

The David Brown Book Company
PO Box 511
Oakville, CT 06779
www.oxbowbooks.com

Published with the financial support of

Dronning Margrethe II's Arkæologiske Fond
KULTURFONDEN DANMARK-GRØNLAND
Manufakturhandler-Foreningen i Kjøbenhavns Almene Fond
VELUX FONDEN

Preface

The 'cut' and 'fit' of a garment are terms that we use today in connection with the cutting and sewing of clothes. We know what size we use and we expect that a garment is cut and formed so that it fits our body.

In the Early Middle Ages the cutting and production of a piece of clothing was associated with a great deal of mystery, and how the Norse, who lived on the edge of the world's society, so to speak, could carry out this profession under such primitive conditions is just as mysterious.

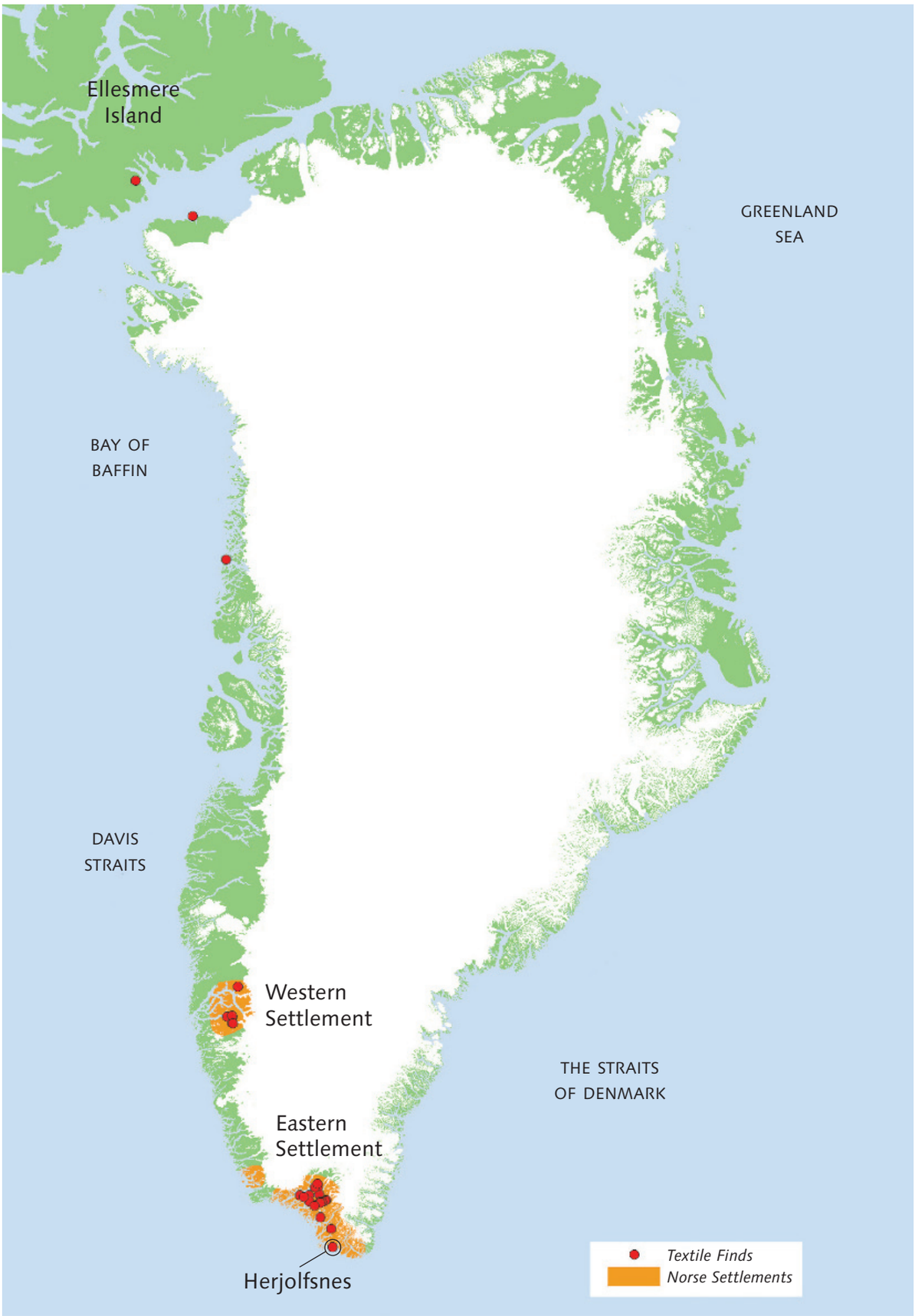
As the photographs and measurements in this book illustrate, several of the Norse garments are sewn to fit closely to the body, but with a large fullness at the bottom of the garment and sleeves with 'set-in' sleeve seams that are formed to give ease of movement. The practical liripipe hoods with shoulder cape, and stockings (either with or without feet) resembled the prevailing fashion further south in Europe. In the Patterns Section of the book, the 800 year old garments are spread out side by side with the more recently sewn reproductions.

MEDIEVAL GARMENTS RECONSTRUCTED – NORSE CLOTHING PATTERNS is the result of a cooperation between three textile experts: Pattern Constructor, Lilli Fransen, MSc Clothing Product Development; Weaver, Anna Nørgaard; and Conservator, Else Østergård. Because of our different backgrounds, each of us has of course taken a different approach to the Herjolfsnes garments, but common to us all is the joy of working with these garments.

Our gratitude goes to the National Museum's Department of Conservation in Brede, which, among other things, has contributed economically to the photography in the book. Our thanks must also go to photographer Robert Fortuna from the Department of Conservation for an inspiring cooperation and for taking splendid photographs of the new garments. Also, museum conservator Irene Skals deserves much thanks for her illustrative material. We are indebted to TEKO Design and Business School in Herning for their generosity in sponsoring the fabric to be used for the sewing of the many new garments, hoods and stockings; and to specialist-teacher Ingrid Andersen, who has sewn the named garment parts. We wish also to thank photographer Werner Karrasch from the Viking Ship Museum in Roskilde. And, last but not least, we are extremely thankful to Chief Curator and the Clinical Faculty, Shelly Nordtorp-Madson, from the University of St. Thomas in St. Paul, Minnesota, USA, who has had the rather awesome task of translating the text from Danish to English.

Lilli Fransen, Anna Nørgaard, and Else Østergård
September, 2010

Contents



Kalaallit nunaat *is the Greenlandic name for Greenland. It means the land that belongs to the people who call themselves kalaallit.*

Chapter 1

Introduction

By Else Østergård

The many garments, hoods, and stockings described in *Woven into the Earth: Textiles from Norse Greenland*, (Aarhus University Press, 2004), were discovered during an archaeological excavation at the site of Herjolfsnes in Greenland nearly 100 years ago. At that time the find was described as the single-most greatest historical textile event in Europe. Here in the far north European fashion was followed, just as it was in the far south of Europe. With the finds from Herjolfsnes it became possible to see well-preserved examples of medieval clothing and gain an insight into how children and adults had dressed 800-900 years ago.

Readers of *Woven into the Earth* have, since its publication in 2004, made it clear that they desired additional pattern drawings, with instructions on how to produce a garment either as an exact reconstruction or as an adapted reconstruction. Therefore, in this latest work, *Medieval Garments Reconstructed: Norse Clothing Patterns*, which contains significantly more measurements and illustrations, we have endeavoured to meet these requests.

To produce a garment as an 'exact reconstruction' means that the garment must be constructed of hand-spun and hand-woven wool, and sewn with the kind of stitches used in the original garment. However, should one wish to sew a garment as an 'adapted reconstruction', one is free to choose both cloth and production methods.

Instructions are included for reconstructing one of the Herjolfsnes garments: the pattern pieces must to be laid out and cut from the hand-woven cloth to be sewn by hand. The result is a very durable garment – just as the originals were. There are also instructions for machine-sewn garments in other types of fabric: linen, for example, which when constructed in the "Norse Greenland Style", can become an accurate-looking copy.

The pattern book can be seen as a supplement to *Woven into the Earth*, but can also be read and utilized without previous exposure to it.

The historic textile discovery

It was archaeologist Poul Nørlund from the National Museum of Copenhagen who made the momentous discovery in the summer of 1921. He had been chosen to lead an excavation at the ruined church at Herjolfsnes, which lies in the southwestern part of Greenland in Nanortalik Municipality. The ruin was about to be lost to the encroaching sea, and a large portion of the cemetery had already vanished, leaving behind human bones and textiles that from time to time were gathered up from the beach below the ruins.

Nørlund's excavation was not, however, the first at that site; digs were conducted as early as the 1830s after a garment was found on the beach, which was believed to be the jacket of a sailor lost at sea. It was not until Nørlund's 1921 excavation however, that it was discovered that the so-called jacket did not belong to a modern, drowned sailor.[1]

The background of the above excavations is found in the *Icelandic Sagas* as well as other medieval manuscripts, which tell how the Vikings braved the dangerous journey of exploring Greenland's coasts. We know of Erik the Red and Herjolf Bårdson, who in 981 sailed southwest from Iceland to Greenland, to settle permanently with their households and livestock. Their descendants, later known as Norse Greenlanders, lived there for nearly 500 years. And it was not just a small group of expatriates who survived;[2] at the beginning of the 14th century, when the population was at its largest, there were at least 3,000 people residing in Norse Greenland.

Fig. 1
A find from the "Farm Beneath the Sand" in the Western Settlement shows that in addition to sewing clothes the Norse had many other skills: here is an example of a coiled basket probably made of willow root. The original height was c. 30 mm and the diameter c. 60 mm. Greenland National Museum and Archive. Photo: Erik Holm.

Written chronicles and the oral tradition, as well as more or less trustworthy sources, have kept alive the romantic history of the Norse people living in Greenland. It has continued to fascinate people around the world, particularly the mystery of their disappearance in the 15th century, which incited subsequent explorers to seek the answers for themselves.

The Herjolfsnes garments are sent to Denmark

Poul Nørlund concluded his excavation of the Herjolfsnes cemetery in August of 1921, and all the textiles were sent from Greenland to Denmark on the last ship to leave that year. In Copenhagen, the garments were prepared for exhibition, while Nørlund began work on the manuscript *Buried Norsemen at Herjolfsnes*,[3] which was published three years later. The book is an exciting account of how the deceased Norse Greenlanders had been interred in their everyday clothing because there was not enough timber for coffins. He describes a difficult excavation that was only possible because sun and rain thawed the permafrost, turning the dig site into one big mud mire; and of how one piece of textile after the other was lifted carefully from the mire. In all, seventy articles of clothing were recovered, including complete outer-garments, hoods, pill-box caps, and stockings. Other pieces were too fragmentary to be preserved and had to be abandoned.

Poul Nørlund's book about the Herjolfsnes garments was never translated into Danish. It was, in part, because of this that the original book, *Som Syet til Jorden: Tekstilfund fra det Norrøne Grønland*, was written. To reach a wider audience, the book was translated into English and released simultaneously under the title *Woven into the Earth: Textiles from Norse Greenland*. Additionally new technical methods of analyzing textiles, now considered commonplace, have made it possible to 'tease' surprising amounts of new data from the Herjolfsnes find. As an example, the examination of sewing and weaving techniques resulted in tangible evidence of medieval construction methods that had been hitherto unknown, and which gave indication of a sophisticated textile tradition.

The study

In preparation for *Woven into the Earth*, each and every textile, however fragmentary, was measured and examined. Small thread samples were taken for analysis of possible dye traces and determination of fiber type. Additionally, samples were taken for radiocarbon dating, which in the case of archaeological textiles first became practicable in the 1980s with the advent of the AMS-technique[4] (Accelerator Mass Spectrometry). With this process it is possible to date textiles with a very small amount of fiber – only about 1 mg. pure carbon. The Herjolfsnes garments have existed for at least 800 years and have been subjected to significant amounts of wear, use as burial shrouds directly in the earth, alternating freezing and thawing, excavation, cleaning, and lining (attached by gluing and sewing). At the museum they were on display both inside cases as well as outside without protection against dust and "investigating fingers". The finest of them were exhibited almost constantly from their exhumation in 1921 until just a few years ago. It was therefore crucial that the fabrication techniques used were documented as accurately as possible, since it was possible that it was the last time such a thorough investigation would take place.

All of the garments and fragments were photographed, and many details of these unique textiles are now documented photographically as well as with technical drawings. The textiles, being fragile, are equally damaged by daylight or artificial light, and lessons were learned from many years unfortunate experience.

Fig. 2
In a niche in the northern wall of the "Farm Beneath the Sand" a circlet made of hair was found. The hair is from a fair-haired Norse Greenlander. Two by two twisted strands of hair follow parallel, crossing each other in an "over-under" pattern. An exception to this can be seen in some few places as in "ply-splitting". Greenland National Museum and Archive.
Photo: Peter Danstrøm.

Fig. 3
Buckle made of walrus tooth. Note the attractive carvings on the 27 mm wide buckle. Qaqortoq Museum. Photo: Geert Brovad.

The Norse Greenlanders' patterns – the medieval garments' silhouettes

The garments' cuts have been measured as precisely as possible under the circumstances. The woven cloth had been stretched through usage; it had alternately been frozen and thawed throughout the centuries it had lain in the ground. The roots of plants had grown through the upper layers of clothing, as well as microbial breakdown of the wool. The removal from the excavation in Greenland was difficult and damaging to the textiles. On their arrival in Copenhagen, the garments were cleaned and lined with sateen, which has remained since the 1920s and has maintained the shape that the garments were given, after they were cleaned and their style interpreted in the first quarter of the 20th century. The condition of the textile material must be respected when handled. A few garments are exceptionally well preserved, while others are so fragile, that the fibers, and therefore the individual threads nearly disintegrate with the lightest touch. As it was a foregone conclusion that it would not be possible to stretch or straighten the weave so that the warp and weft threads could once more run perpendicular to each other, *this was not attempted*.

Patterns have been drafted for only the most well-preserved garments, but there is also information regarding the cutting and sewing techniques of others that one might use as inspiration for garments not included, but that one might wish to reproduce, even though precise measurements are not in this volume. There are other items which are in such poor condition that it was impossible to draft reliable patterns. Therefore those garments have been excluded.

The authors hope that the large audience of medieval enthusiasts, who will sew apparel based on that period, will find gratification from the measurements and descriptions

that are assembled here and are presented as: *Medieval Garments Reconstructed: Norse Clothing Patterns.*

Technical information

The Norse Greenlanders wove with single-ply wool yarn, hand-spun of wool from sheep they brought to Greenland. This type of sheep belongs to the "Northern Short-tail", a breed that also includes Norwegian Spaelsau, Swedish Landrace, and a number of others.[5] However, goat hair and hair from various non-domesticated animals – the arctic hare, among others – were used for weaving cloth. There is also weaving done in linen, a material otherwise not expected to have been cultivated in Greenland; but it could, of course, be imported.

Why is all the Herjolfsnes clothing brown? That is a question that a countless number of interested guests at the National Museum of Copenhagen have asked, as they stood alongside the exhibition cases containing the apparel. That question was answered in connection with the new technical investigations that were recently completed. Most of the colors come directly from the fleece: natural white, gray, brown, and black colors, which

Fig. 4
Decorated four-hole weave-tablets made of bone (50x50 mm) for tablet weaving. In Greenland tablet-woven piped edging on garments has been found, but an independent piece of tablet weaving has not yet been registered. Greenland National Museum and Archive.
Photo: John Lee.

Fig. 5
Buttons made from the same Greenlandic vadmel as garment D10583, with which they were found. The buttons measure 10-12 mm in diameter. They are formed so that the upper surface is smooth, while the cloth is gathered on the bottom surface. One can see that the buttons have had small stitches in concentric circles. The thread has disappeared, but the holes from the stitching are still there. National Museum, Copenhagen.
Photo: John Lee.

the Norse women used to provide many color variations. It was not a surprising result, although the analysis showed that some of the garments had also been colored with a dye either before or after weaving and sewing. The Norse Greenlanders had, for the most part, a limited number of natural dye-stuffs to choose from. Of the raw materials that were easy to find locally were the many lichen varieties found on Greenland, and which produce red-violet colors. One can mention Evernia and Ocholechia among other possibilities. Red dye madder, which derives from roots of the plant Rubia tinctoria, was very common in medieval Europe, but in Greenland it is represented by only two examples, one is a fine diamond twill, which is clearly an import and the other is an edging on a gown (D10594). But also the blue colors – from woad or indigo – are registered, but only on small fragments. The woad plant (Isatis tinctoria) is most likely the plant they were able to obtain, even though it probably did not grow in Greenland. Finally, a non-organic coloring agent has been identified – derived from iron, apparently found in high concentration, which in this case has been given a red-brown nuance. The brown color that the garments have today is caused by tannins that are found naturally in the soil and that have produced the color changes that have occurred throughout the many centuries the clothing has been interred.[6]

Analysis of the weaving shows that the warp threads – with few exceptions – are all Z-spun, very tight, and thin; however, since it was spun from the long hair of the so-called double-coated sheep, the yarn is consequently quite strong. The weft threads are spun in the opposite direction – S-spun – of the wool, that had been separated from the rougher long hair during combing. This produces a softer yarn, which, in this case, is slightly thicker, as it is also spun more loosely than the warp yarn.[7] The loom that was used was an upright, warp-weighted loom, sometimes known by its Norwegian name, *oppstadvev*: a loom leaning against a wall, where the weaver performs the work while standing.

The finished cloth, called Greenlandic *vadmel*, or frieze, usually has a thread count of 8-10 threads per cm in the warp and 10-12 threads per cm in the weft, which is the op-