

Archaeologia Medii Aevi Finlandiae VIII



AT HOME WITHIN STONE WALLS:

LIFE IN THE LATE MEDIEVAL
HÄME CASTLE

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Archaeologia Medii Aevi Finlandiae VIII
Suomen keskiajan arkeologian seura — Sällskapet för medeltidsarkeologi i Finland

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LIFE IN THE LATE MEDIEVAL

HÄME CASTLE

Anna-Maria Vilkuna, Johanna Onnela, Terhi Mikkola,
Päivi Luppi, Markus Hiekkanen, Knut Drake

Editorial Board: Anders Andrén, Knut Drake,
David Gaimster, Markus Hiekkänen, Werner Meyer,
Jussi-Pekka Taavitsainen and Kari Uotila

Editors

Terhi Mikkola & Anna-Maria Vilkuna

Layout

Terhi Mikkola

Translations

Rodger Juntunen & Riina Kivijärvi

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Authors

Knut Drake, Ph.D.
Rätiälänkatu 20 c 21, FIN-20810 Turku

Markus Hiekkänen, Ph.D., Senior lecturer
Koskelantie 46 a 2, FIN-00610 Helsinki

Päivi Luppi, M.A.
Vanha Pappilantie 70, FIN-13300 Hämeenlinna

Terhi Mikkola, M.A.
Pilvipolku 2 c 12, FIN-50500 Mikkeli

Johanna Onnela, M.Sc.
Sampsantie 9 a 2, FIN-21530 Paimio

Kari Uotila, Ph.D., Senior lecturer
Suovillankatu 3, FIN-20780 Kaarina

Anna-Maria Vilkuna, Ph.D.
Niittyrinne 3, FIN-13300 Hämeenlinna

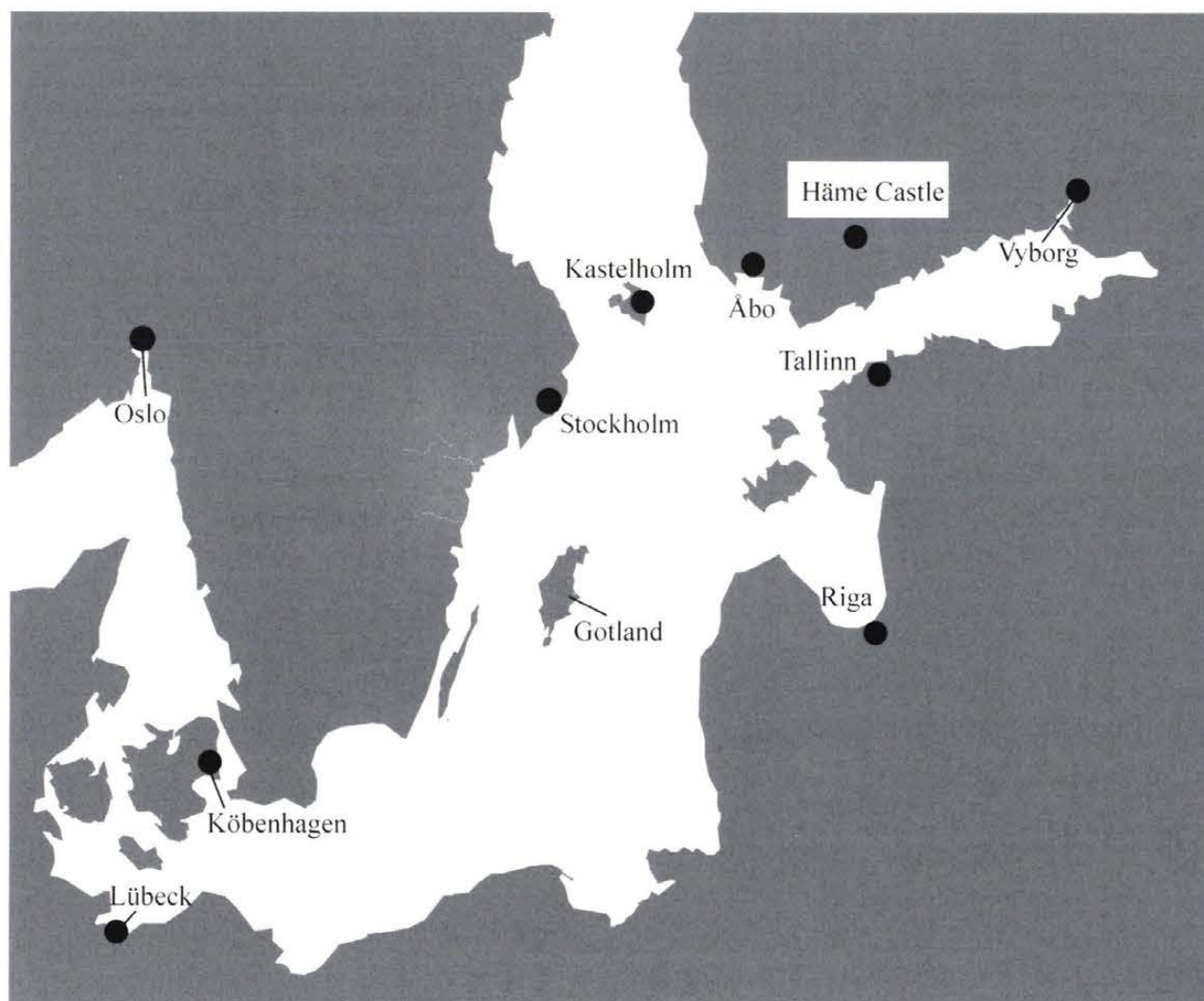


Figure 1. Häme Castle in the region of the Baltic Sea.

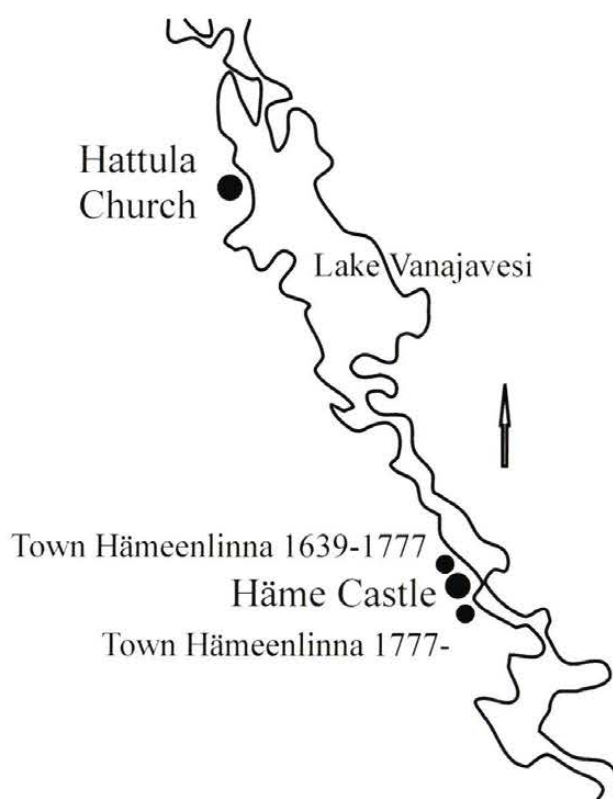


Figure 2. Häme Castle and its surroundings. The town of Hämeenlinna was moved to its present site because of fortification work carried out in the 18th century. Distance between Häme Castle and Hattula Church is ca 6 kilometres.

Drawings by Terhi Mikkola

PREFACE

In the Middle Ages, the castle was more than just its walls and rooms — it was also lived in.

The Society for Medieval Archaeology in Finland has, over a period of ten years already, published the research of the medieval castles of the Baltic area in international languages. The Society's one aim has been to bring together from different countries researchers and those interested in the world of castles. For this reason, the Society has been publishing the biennial *Castella Maris Baltici* seminar issues.

Most often, the introduction of an archaeological research subject occurs only in a local language, which is, from the standpoint of growing tourism and area research, problematic. Often, the only subject matter available in foreign languages is brief and, many times, based on an outdated presentation. It is important that significant new research results be published also in international languages. In this kind of publication, the active tourist interested in the Middle Ages or the researcher finds newer information that is significant from the standpoint of area research and the advancement of knowledge.

The work in hand presents Finland's perhaps most studied medieval castle — Häme Castle. The plan for the book began in 2002 with the information that Anna-Maria Vilkkuna's very interesting — but Finnish-language — dissertation research on the everyday life of Häme Castle in the sixteenth century had been translated into English. The executive committee of the Society seized the opportunity to publish the research as an extended article because we considered this research worthy of presentation, in addition to the Finnish-language public, to a wider readership.

After a brief survey, it became clear that many other Häme Castle researchers also have new research results concerning the castle and its everyday life as well as the nearby area. During the years 2002-2003, the work in hand on the history of Häme Castle in the light of newer research information came into existence. As a new element, questions rose to the fore in the book concerning, in particular, the ways and possibilities of everyday life in the shadow of the medieval brick castle. This fresh viewpoint, along with new dating results from the castle and the nearby church at Hattula, makes the book a fresh and new thought-provoking whole.

On behalf of the Society, thanks go to all the book's writers, Anna-Maria Vilkkuna, Johanna Onnela, Terhi Mikkola, Päivi Luppi, Markus Hiekkänen and Knut Drake, and to the translators, Rodger Juntunen and Riina Kivijärvi.

Terhi Mikkola and Anna-Maria Vilkkuna have handled the many stages of practical responsibility and editorial work. A special thanks for that.

The book in hand would not have succeeded without the financial support of the Emil Aaltonen Foundation and Hämeen Wanhin Linnan Kilta.

On behalf of the Society, we hope that the many interesting themes of the Häme Castle -book arouse in the reader an interest in medieval castles, for then our Society's one function will have been discharged.

At Kuusisto, Sept. 27. 2003.

Kari Uotila

The Society for Medieval Archaeology in Finland / Ch.

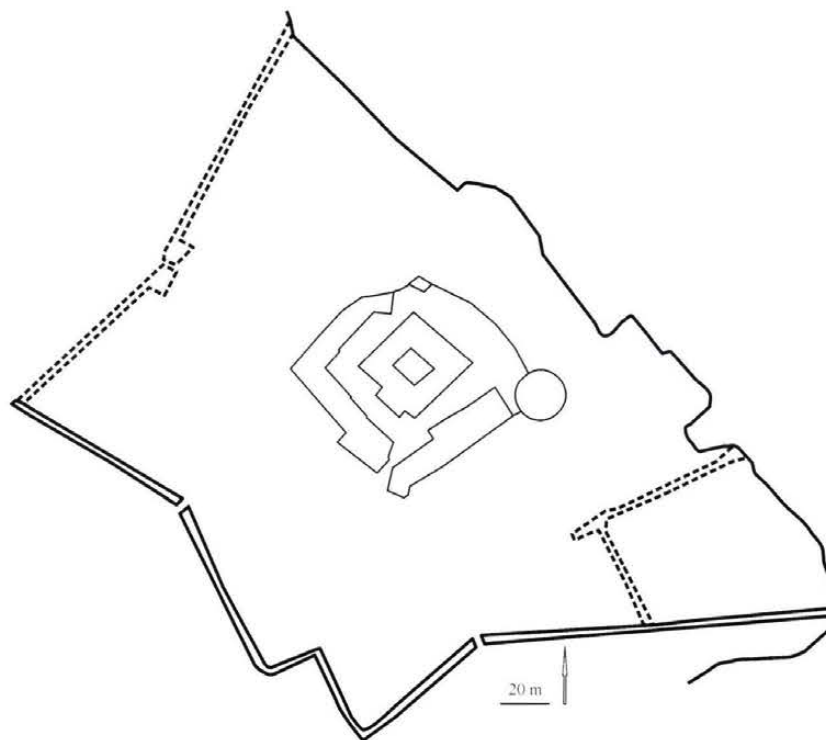
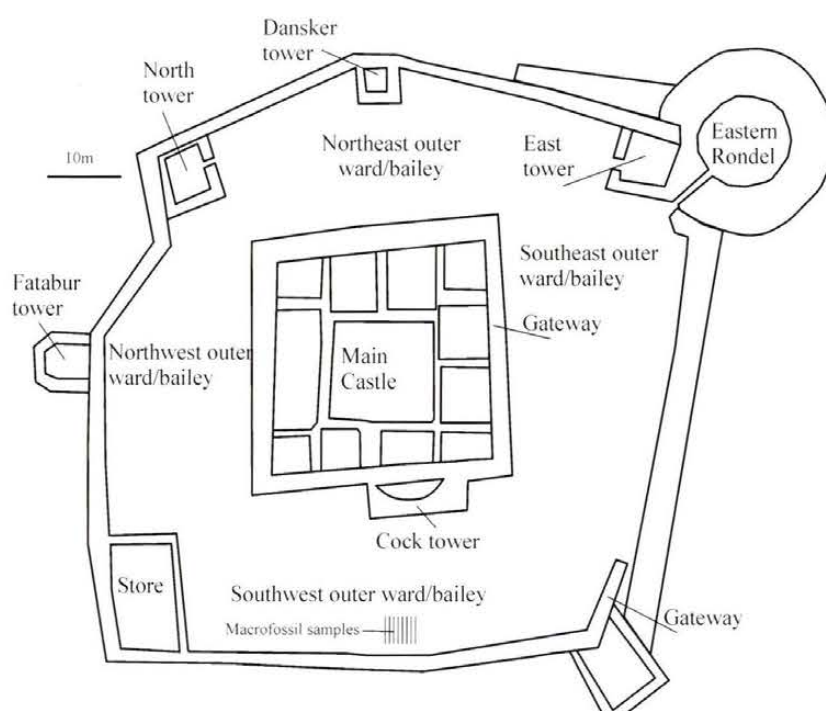


Figure 3. The main castle of Häme Castle and the curtain wall buildings and ramparts built in the 18th century. According to Knut Drake, 1968. Redrawn by Terhi Mikkola.

Figure 4. Medieval Häme Castle according to Knut Drake, Päivi Luppi and Kari Uotila. Redrawn by Terhi Mikkola.



HÄME CASTLE

AS A SUBJECT OF RESEARCH

During the 13th century, provinces located in the southwestern part of Finland were annexed to the Kingdom of Sweden. By the end of the century, this slowly conquered area had developed so much that a town called Turku (Åbo in Swedish) was founded on the west coast. Three castles for the use of royal administration were also built in the region. Turku Castle was built on an island along a waterway leading to the town of Turku. Viipuri (Vyborg) Castle was founded on a small island at the back of the Gulf of Finland, and a trading centre slowly grew next to the castle. It was granted town privileges in 1403. The third castle, Häme Castle, was founded inland in the centre of the province of Häme (Tavastia) (See figs. 1-2 p. 8). Trade was not here as busy as on the coastal area, so it took until 1639 before the small community beside the castle was granted town privileges.¹

The original medieval appearance of Häme Castle is among the best preserved in the Nordic Countries. It is located some one hundred kilometres north of Helsinki along an important water route in the area of the present-day town of Hämeenlinna. The castle was built on a moraine hillock in the southern tip of an island which was about half a mile long in those days but which has now grown into the mainland. On top of the mound is a brick-built main castle with four wings as well as towers in the west and north corners. The high, tarred tin roofs were added in the 1720s. The main castle is surrounded by a square outer bailey and fortifications constructed at the end of the 18th century (Figs. 3-4 p. 10).

In the middle of the main castle is a ward which is about 15x15 metres in size, and its walls have decorative portals as well as ornamental brickwork. The castle is three storeys high. The ground floor with its brick-built barrel vaults has, on the whole,

been preserved in its original state. The situation of the residential floor is different: vaults have been destroyed and some of the original partition walls are missing. The doorways and windows on this floor were restored in the 20th century on the basis of remains preserved in the walls. The castle's second floor includes tower rooms and a connecting defence passage, where loopholes are still present. This storey has been kept in the appearance it was given in the 18th century.

On the inside of the castle's curtain wall, on three sides, are barrack buildings from the 18th century which have been renovated for museum use. On the side facing the lake, one can see remains of the curtain wall from different time periods and the round gun tower that was constructed in the eastern corner of the outer bailey in the 1560s. The ramparts from the 18th century have partly been restored, but the two nineteenth-century prison buildings in the western part have been preserved and repaired for museum use.

In addition to the actual island that the castle is located on, the complex also included three landed estates – Saarinen, Ojoinen and Hätilä – as well as mills and fishing waters. The administrative area of the castle consisted of the province of Häme, the borders of which have been changed several times over the centuries. The parishes that used to belong to the castle fief are now found in four different provinces.

Many factors have contributed to the main castle's good preservation in its original state. The most important reason is perhaps the fact that Häme Castle has never really been fought over. According to Russian sources though, a troop from Novgorod besieged the castle for three days in 1311, but was unable to conquer it.² As late as in 1808, the castle

prepared for an attack from the Russian forces, but this time the Swedish garrison withdrew without firing a single shot because they deemed the castle impossible to defend.³

Häme Castle has never suffered great disasters, as many other castles have. However, the main castle's north corner collapsed in the 15th century, and the South tower was destroyed in connection with a gunpowder explosion in 1599, but these damages were repaired immediately.⁴ When the castle was in the possession of the Russians in 1713-1721, it fell into disrepair, but the damages were mended in 1726 when the main castle became the central store of the Swedish troops in Finland. The castle suffered the worst damages of its whole history when it was turned into a prison in 1836: vaults were demolished and partition walls knocked down in order to produce suitable rooms for the prison. The prison period ended in 1972, and the restored castle was opened to the public in 1983.

Opening the castle for visitors was the culmination of over a hundred years' process. Public interest in the castle's past was generated when the so-called 'father of Finnish archaeology', J. R. Aspelin, carried out building research in the castle in 1869.⁵ Archaeologist Julius Ailio continued the studies within the limits set by the castle's use as a prison. In his opinion, the castle had been founded by the Swedish Birger Jarl in 1249.⁶ Medieval archaeologist Juhani Rinne disagreed. He thought that the castle of Hakoinen (Haga) along the same waterway was founded by Birger Jarl and that the building of Häme Castle did not start until after 1311. The model for the new castle can be found in the convent castles of the Teutonic Order in the Baltic Countries.⁷ Subsequent researchers have more or less accepted the views of Rinne.⁸

The planning of the castle's renovation into a museum began in the 1930s, but the project was postponed due to the outbreak of World War II. It wasn't until 1952 that archaeologists could begin thorough building archaeological investigations in the main castle, the results of which were published by me in 1968.⁹ In this doctoral dissertation, the main castle's medieval building history was divided into five stages: Fortified Camp, Greystone Castle, Cock Tower, Brickwork Castle and Corner Tower Castle. In the absence of reliable dating methods at the time, I placed the main castle's building stages in succession between the years of 1260 and 1520 according to relative chronology. I justified my decision to date the first building phase to the period 1260-1290 with the fact that the brickwork technique

used in the Greystone Fort had clear connections with the northern outer bailey of the Stockholm Castle, the walls of which were dated to the 1260s at the time of the dissertation's publication.

With regard to the Brickwork Castle, I adopted the view of Juhani Rinne that its models can be found from the sphere of influence of the Teutonic Knights. I considered the castles of Riga, Gniew and Rehden (Radzyń Chełmiński) to be the best buildings for comparison. However, due to the brick ornamentation of Häme Castle's inner ward, I had to date the Brickwork Castle phase to a considerably later date than the above-mentioned castles. The brick ornaments are obvious modifications of the façade ornamentation of Turku Cathedral's late medieval chancel, and these can be dated to the beginning of the 15th century. Without commenting more carefully on its complex features, I dated the Brickwork Castle between 1350 and 1450. As for the Corner Tower Castle, I suggested a building period of 1480-1520.¹⁰ Later there was some discussion about the dating I had proposed, but in other respects, the views I presented in 1968 on the building history of Häme Castle were generally accepted.¹¹

Thirty years later, I returned to the study of Häme Castle's building history. On the basis of scientific discussions and my own new research observations, I came to some different conclusions. I found it needless to interpret the Fortified Camp and Greystone Castle as two separate building phases because they were obviously just two stages within the same building plan. Thus, it is sufficient to give the main castle's first building stage merely one name: Greystone Castle. I have also discovered that this phase was left unfinished. The goal must have, already then, been to create a residential storey in brick, but the work was never completed. Within the rather curtailed building plan, necessary dwelling rooms were placed in the stone-built residential section, which was later named Cock tower.

With the arrival of more prosperous times, the original plan was restored and the Brickwork Castle constructed. All necessary living quarters were included in it, so the additional parts of the later Corner Tower phase were rather unnecessary. No essential residential rooms were added at that time, and the new defence passage hardly had any greater military significance. The only purpose of the corner towers must have been to make the castle more imposing; they were merely used to further emphasize the grandeur of the late medieval castle's lords.¹²

In 2001, I also presented new viewpoints on the dating of the main castle's building phases. It had turned out that the northern outer bailey of the Stockholm Castle did not date from the 1260s after all, but most probably from the middle of the 14th century.¹³ According to my new assessment, the Greystone Castle dates from the time period 1372-1390, when the castle was governed by Magnus Kase, a nobleman from Uppland. His grandiose building project may have been interrupted in 1389 when Queen Margaret gained control of Finland. On the basis of this, the Cock tower's date of building would fall in the first half of the 15th century.

A suitable commissioner for the building of the magnificent Brickwork Castle would be the famous commander Knut Posse, who controlled the castle in 1472-1490. The Corner Tower Castle probably belongs to the grand era which began in 1503 when Regent Sten Sture the Elder's widow Ingeborg Åkesdotter moved to the castle. After Ingeborg died, her nephew Åke Göransson continued to maintain a large court in the castle. When the new king Christian II came to power in Sweden in 1520, he had Åke executed and Häme Castle's function as the residence for the realm's powerful men ended.¹⁴

According to new dating theories, the time period before 1372 remains a grey zone in the castle's building history, but Häme Castle did exist in 1308 in any case.¹⁵ At that time it may have been a wooden building, of which nothing now remains. It is quite possible that the first curtain wall structures were erected around this wooden castle.

From the 1960s to the 1980s, archaeological research was carried out in various stages in the outer bailey of Häme Castle and in the fortified area outside it. The final results of these studies have not been published, but in her articles, Päivi Luppi has given a general view of the remains of medieval walls that have been discovered.¹⁶ The rectangular shape of the outer bailey, which has been compared to the Zwinger-type baileys of the Teutonic Order's convent castles, is a result of long development. Archaeologists have discovered remains of the oldest curtain wall, which was a relatively thin brick wall, on the northern and southern side of the main castle. A modest gateway in the wall once opened to the south, and the so-called Dansker tower was located on the side facing the lake (Fig. 4, p 10).

The Dansker tower – also called the latrine tower – was named after a map of the castle from the 1640s. At that time, there was a wooden bridge leading from the main castle to the top floor of the tower, and due to this, the castle resembled those castles of the Teutonic Order that had latrines located in the curtain wall.¹⁷ In the case of Häme Castle, there is no knowledge of when this wooden bridge was built, and the castle's relationship to the Teutonic Order's castles is very vague. A castle with four wings and towers in the corners that also had a rectangular outer bailey was a fairly common design in late medieval castle architecture. It is difficult to say, though, why the construction of specifically this type of a castle was begun in Häme in the 14th century.¹⁸

Kari Uotila has also discussed the building history of Häme Castle's outer bailey in his doctoral dissertation. He, too, is of the opinion that the outer bailey was not originally built as a Zwinger, but has rather developed into this form in the course of time. However, due the lack of proper research reports, it is impossible to draw a clearer picture of the bailey's creation. A more careful study might prove that the outer bailey was not given its final appearance until the 16th and 17th century.¹⁹

Research carried out in the Häme Castle in the 20th century primarily served the purposes of the castle's restoration into a museum and thus concentrated on building history. The castle's role in everyday life, its significance as a residence and as a working environment, as well as its connection to the surrounding countryside and society, were left to the background. The publication of Anna-Maria Vilkkuna's doctoral dissertation in 1998 therefore signified an important move towards a new direction. In her work, Vilkkuna discusses the castle's function as one of the crown's economic centres in the 16th century²⁰ and she returns to this theme also in this book. Tuula Hockman, on the other hand, has concentrated on Ingeborg Åkesdotter and the history of her epoch.²¹ Markus Hiekkanen has previously discussed the problems related to the castle's chapel²², and here he deals with the castle's relationship to the brick church of Hattula. New arrivals to the study of Häme Castle are Terhi Mikkola and Johanna Onnela, whose research results are also published in this work.

Endnotes

- ¹ Drake 1994.
- ² Drake 1997.
- ³ Ailio 1917 pp. 124-125.
- ⁴ Drake 1968 pp. 88,142.
- ⁵ Drake 1968 pp. 16-19.
- ⁶ Ailio 1901; Ailio 1917.
- ⁷ Rinne 1914 pp. 267-289.
- ⁸ Tuulse 1942; Gardberg 1954; Pettersson 1955.
- ⁹ Drake 1968.
- ¹⁰ Drake 1968, passim.
- ¹¹ Lilius 1971a; Lilius 1971b; Taavitsainen 1990; Gardberg 1993a; Gardberg 1993b; Lovén 1996.

- ¹² Drake 2001a.
- ¹³ Söderlund 2001.
- ¹⁴ Drake 2000.
- ¹⁵ Drake 1968 p. 39.
- ¹⁶ Luppi 1985; Luppi 1996.
- ¹⁷ Pettersson 1955 p. 557.
- ¹⁸ Drake 2001b.
- ¹⁹ Uotila 1998 pp. 113-120.
- ²⁰ Vilkuna 1998.
- ²¹ Hockman 1996; Hockman 2000.
- ²² Hiekkanen 2001.

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FINANCIAL MANAGEMENT AT HÄME CASTLE IN THE MID-SIXTEENTH CENTURY (1539 – ABOUT 1570)

1. The Crown's Base in Häme

1.1. Medieval Häme Castle

The Swedish conquerors established Häme Castle (Tavastehus) at the end of the thirteenth century. By the mid-sixteenth century, the granite camp fortress had grown to an imposing brick castle, which was the administrative and economic center of Häme (Tavastland) in southern Finland.¹ After the founding of Viipuri Castle (1293), the significance of Häme Castle as a border fortification was decreased, but in the original founding of the castle, its strategic location was also closely considered. According to Christian Lovén, only Axevall in West Götaland, Hakoinen in Häme and Häme Castle, of Sweden's medieval inland castles, were militarily strong fortifications. They served as "fall-back" (*tillbakadragna*) border fortifications. Häme Castle was built on an island off the west bank of the Vanaja Waterway Narrows, which was in a good spot for traffic and easily defensible. In the Early Middle Ages, there were several islands in the Vanaja Waterway Narrows, at the point of the modern town of Hämeenlinna, which, before the arrival of the Crown and the Church in the region, had been graveyards, sacrifice groves and marketplaces of the local inhabitants of Häme. Afterwards, the greatest part of the islands fell into the possession of the Church, and on one of them, Vanajansalo, Vanaja Church was built. Over the course of centuries, the rising of the land has much changed the landscape of Häme Castle's surroundings. Like many other islands of Vanaja Waterway, the castle island has gradually become merged with the mainland.² The oldest map representing the heart of Häme Castle's land area is the so-called Schroderus Map from the mid-seventeenth century (Map 1).³ Already then, swampy shore meadows surrounded the castle island on the south and the west.

The land area in possession of Häme Castle in the mid-sixteenth century was in no way limited to the main castle and its surrounding bulwarks located on the southern tip of the castle island, but, on the contrary, the castle owned considerable area on both sides of the Vanaja Waterway Narrows. The medieval castle on the Schroderus Map is depicted on the south end of the castle island, which is surrounded by water and swamp, and the plat diagram for the town of Hämeenlinna, founded in 1639, is drawn on the north side of the castle. On the west shore of Vanaja Waterway, scarcely a kilometer's distance from the main castle, are located the landed estates of Ojoinen and Saarinen, belonging to the castle. A bridge led from the northwestern point of the castle island to Ojoinen, and one went to the landed estate of Saarinen, on the south side of the castle, across the emerging marsh along a so-called dry bridge. The main building of the landed estate of Hätilä, founded on the opposite shore of Vanaja in 1558, is not shown on Schroderus' map, but Hätilä's field areas are indicated on the map. The oldest known bridge site crossing Vanaja was scarcely two kilometers from the castle on the north side at the point of the present Helsinki-Tampere Railway bridge. In 1741, Vanaja Bridge was moved to the strait between the castle and the cape opposite it, nowadays called Varikonniemi.⁴ The planned bridge is already sketched on the map.

Apparently the lands of the estate of Saarinen fell into the possession of the castle at the time of its founding. According to Seppo Suvanto, the landed estate of Saarinen was the oldest of the castle's landed estates, nor had there ever been an independent peasant village in the area of Saarinen. Ojoinen, on the other hand, was an independent peasant village prior to its annexation to the castle. In the year 1329, we encounter Matti of Ojoinen (*Matthias de Oyas*) among other parishioners at Vanaja Church. The landed estate was established soon after this, and through the Middle Ages, the lands of Ojoinen belonged to the castle.⁵ The next time the castle's

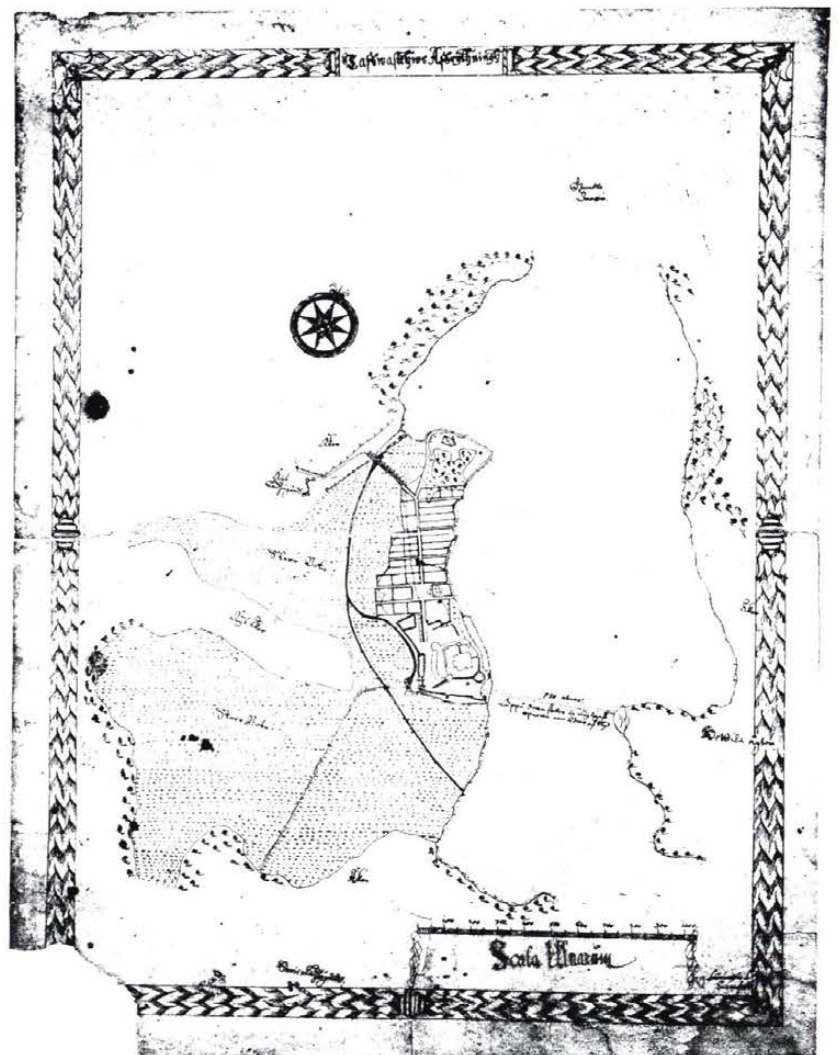
land area grew was not until the latter half of the 1550s: the village of Kauriala was annexed to Saarinen's landed estate in 1556, and a year later, the landed estate of Hätilä was established on the east side of Vanaja from the lands of the peasant villages of Hätilä and Pintiälä.⁶ The landed estates of Ojoinen, Saarinen and Hätilä formed, along with the main castle and its immediate surroundings, the land area belonging to Häme Castle.

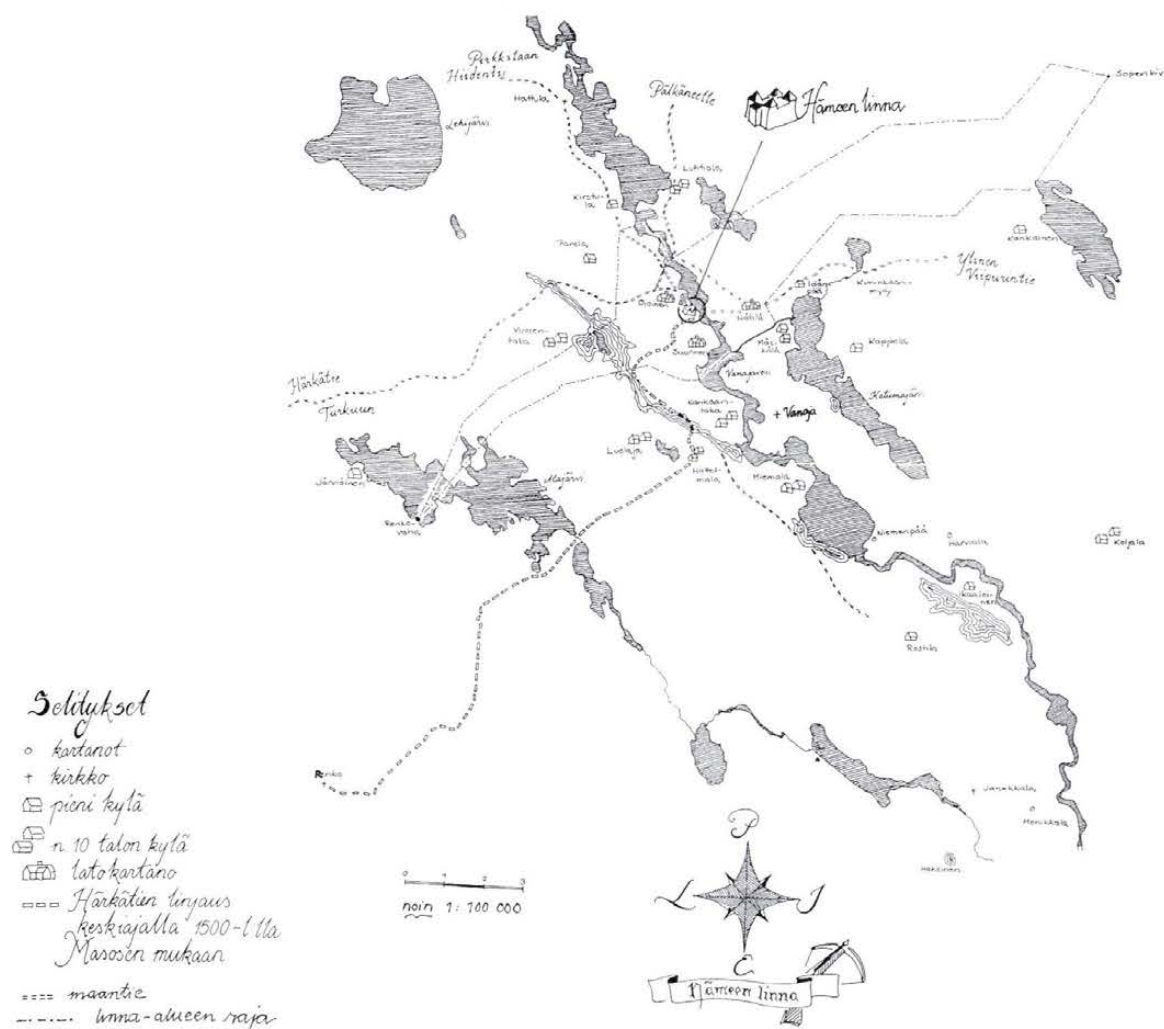
The territory of the castle lay among the medieval villages of Vanaja Parish. The villages of Vanaja's densely populated group were not large, but they were located very close together in a continuous chain on the shores of the lakes (Map 2). In 1550, the largest villages were Koljala on the south end of the lake Katumajärvi and Luolaja on the northwestern shore of Hattelmalanjärvi. There were twelve houses in each. Opposite Luolaja on the other side of the lake were Hattelmala's ten houses, and in Hätilä, which was still an independent peasant village in 1550, dwelt eleven households. The other villages' house count remained under ten. In the entire Vanaja Parish around the castle were, in the

mid-sixteenth century, an estimated 115 houses.⁷ The oldest information on the boundaries between the land area of Häme Castle and its landed estates and the villages of Vanaja is the boundary catalogue appended to Häme's first land register of the year 1539. The boundary catalogue is generally called the 1539 Boundary Catalogue although it was compiled at the end of the 1550s at the earliest. Seppo Suvanto has presented a reasonable criticism of sources for the dating of it.⁸

In a history of Vanaja, Seppo Suvanto has outlined the medieval holdings of Vanaja and the boundaries of the area of Häme Castle remaining between them (Map 2). In the parishes of western Finland, the holdings for redistribution were the oldest property-holding communities and signified the earliest area division within a parish. According to Suvanto, the boundaries of Vanaja's property-holding communities were from the Viking period, which reveals the organization of Häme society already before Christianity and the arrival of the Swedes in the region. Vanaja Waterway divided the Parish of Vanaja into two parts. The old distributive

Map 1. The map compiled by Laurentius Schroderus of the Hämeenlinna area in the mid-seventeenth century — beginning eighteenth century. The plat of the town of Hämeenlinna, founded in 1639, is represented on the north side of the main castle. Northwest of the main castle is the landed estate of Ojoinen, and south of the main castle, on the lower edge of the map, the landed estate of Saarinen. The fields (åker) are around the landed estates. The marsh meadows surround the main castle. Part of Hätilä's meadows and fields is visible on the east side of Vanaja Waterway. Source: Svenska Riksarkivet, Lantmäteristytrelsens leveranser 1850, nr 194. Taffwastehws Affrijthningh, Laurentius L. Schroderus





Map 2. Häme Castle's (Hämeen linna) location at the point of intersection of the water route and highways was central. Vanaja Waterway was an important thoroughfare in the internal traffic of the province. In the Middle Ages and as late as the beginning of the sixteenth century, the Ox Road was marked out by way of Renko Church straight to the castle. At the end of the sixteenth century, the road was moved to circle the northwestern side of the lake Alajärvi. The oldest known bridge joining the Ox Road and the Viipuri Road was north of the castle. The border of the castle area is represented in accordance with Suvanto and the general land-parcel maps. Drawing: Pekka Lahtinen. (Translation: Ylinen Viipurintie = Upper Viipuri Road, Härkätie = Ox Road, Selitykset = Legend, kartanot = manors, kirkko = church, pieni kylä = small village, n. 10 talon kylä = approx. 10-house village, latokartano = landed estate, Härkätien linjaus keskiajalla 1500-lla Masosen mukaan = line of the Ox Road in the Middle Ages – 16th century according to Masonen, maantie = highway, linna-alueen raja = border of the castle area)

holdings of the western part were Miemala, Hattelmala, Luolaja, Kirstula and Vuorentaka. Located on the eastern side of Vanaja Waterway were Koljala, Harviala, Mäskälä, Hätilä and Luhtiala. One can discern the obvious land area belonging to the castle on the map with the aid of landmarks.⁹

The landed property on the west side of Vanaja Waterway belonged to the castle almost from its founding, with the exception of the village of Kauriala annexed to the castle in the year 1556. The land area around the main castle on the western shore of Vanaja Waterway was about four kilometers long from the northwest to the southeast and about two

kilometers wide from west to east. On this area were the landed estates of Ojoinen and Saarinen with their largest fields, the pasture for the castle's cattle and, in close proximity to the main castle, Suoniitty (Marsh Meadow) and Kuninkaanniitty (The King's Meadow) on marshy land reclaimed from the water (Map 1). Southwest from the castle to Alajärvi's Renkovaha stretched an approximately nine-kilometer long and, at its widest, approximately one and one-half kilometer wide strip of land between the lands of Vuorentaka's and Iso-Luolaja's holdings. Within this strip were the castle's nearby forests, the lake Aulankojärvi and the shore meadows of the lake

Alajärvi. The castle area was expanded considerably at the end of the 1550s with the land annexation. The trip from the main castle northeast to Sopenkivi was about twelve kilometers. The widest area was in immediate proximity to the shore of Vanaja, where the sloping fields and shore meadows of the former villages of Hätilä and Pintiälä were located. In addition to the fact that the castle's field area, as well as feeding potential for horses and cattle, increased, the castle had still more forest at its disposal. There was use for this timber starting at the end of the 1550s, when a vigorous period of construction on the castle began. For several years, the hired men of the castle were in the nearby forests, felling logs and hewing planks for the construction of farmhouses, cattle shelters and storehouses.¹⁰

1.2. The Castle's Courtyard and Room Accommodations

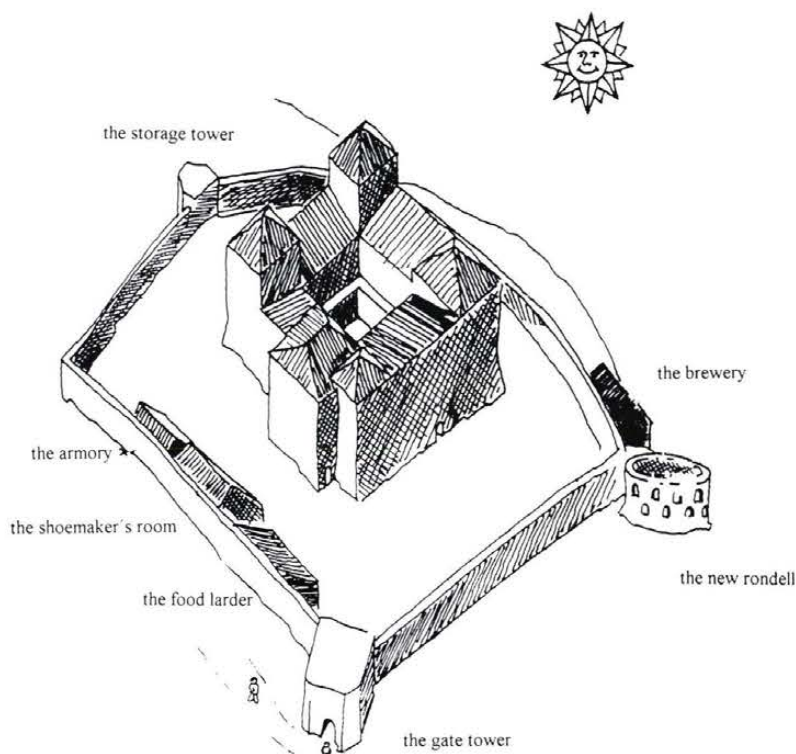
The question of a castle village having possibly been on the north side of the main castle is interesting. It has long been debated whether the town of Hämeenlinna had a predecessor, a so-called castle village/town (the site and plat of the town founded on the north side of the castle in 1639 is represented on Map 1). Neither archaeological research nor written sources have yet been able to produce evidence of a castle village. Knut Drake emphasizes that our earliest castles also had, in addition to military significance, an important economic position: Turku Castle served in the beginning also as a trade center and Viipuri Castle was founded on the Karelians' old marketplace. Alongside these castles, as for example Stockholm and Nyköping Castles also, towns sprang up soon after their founding. A castle could also be built alongside an already existing town. In Kalmar, for example, the town is older than the castle.¹¹ It was an exception, of course. Some of the castles were, above all, border fortifications without commercial significance, and in the interior of Sweden, in particular, were towns that were not protected by a castle. The connection between the castle and the town or commercial center is, in any case, discernible, particularly on the coast.¹²

How did the development proceed in Häme, where a town did not spring up during the Middle Ages? Drake supposes that the castle island was the area's trade center already before the arrival of the Swedes in the region. The island was in a good place for traffic and better for overseeing and defending than, for example, the so-called Varikonniemi area

situated opposite it. There were not, however, good means of communication from the heart of Häme to a wider area, so that a large community of artisans and merchants, that is to say a town, did not come into being at the castle in the Middle Ages, although such is represented on Varikonniemi. According to Drake, it is, however, entirely possible that the markets continued on the castle island even after the founding of the castle. The earliest main castle was not able, because of a lack of space, to serve as a marketplace, and consequently, the markets were held on the north side of the main castle in the so-called castle village. Gardberg even observes that there are no thirteenth-century money finds from the interior of Häme Castle. Instead, the wider castle island could have been the local trade center and the markets conducted under the bailiff's watchful eye in the shadow of the castle.¹³

Gardberg has proposed that, in medieval Häme Castle, in which there was not space to divide the main castle into an inner and outer courtyard as in Turku Castle, the habitation of the social classes was determined in a vertical direction. The castle lord and his court lived on the upper level, the lower officials and servants on the bottom level.¹⁴ When the numbers of the latter grew in the sixteenth century, they began settling outside the castle. Information on Häme Castle's construction stock in the mid-sixteenth century points to there having had to have been a village-like settlement. Outside the main castle were, at the end of the 1560s, an estimated twenty-five farmhouses and cottages for habitation, at least eleven cottages as work areas for craftsmen, some ten storehouse and granary structures and, in addition, shelters for livestock. The granaries, in which were kept grain, food, hides and other things of value, were surely in the shelter of the curtain wall surrounding the main castle. So were the work areas needed in the castle's everyday economy. If work areas were located outside the wall to relieve the fire hazard or water supply, they were nevertheless as close as possible to the main castle. On the other hand, the farmhouses and cottages built for use as residences were, one can presume, for the most part outside the curtain wall, especially on the north side where there was the most space. Apparently the people of the castle no longer willingly lived in the main castle in the mid-sixteenth century, for more and more wooden and brick dwellings began to go up outside it, in which stoves were built for year-round residence. Additional living space was also needed for the growing staff. In 1559, construction work on the gun tower brought many workers to the castle, for whom twelve stove-heated cottages were built altogether.¹⁵

Figure 5. In his doctoral dissertation, Knut Drake represented the exterior of Häme Castle's main castle and curtain wall at the beginning of the sixteenth century. To Drake's drawing have been added the buildings of the outer castle yard whose exact locations are known on the basis of mention in the account books. These are, however, only a small part of the outbuildings in the outer castle yard. For example, it is evident that the storehouse cottage, or women's cottage, where the weaving was done, was located by the tower. With the additions, the picture represents the situation in the period 1559-1563: in 1559 the new rondel, or the east gun tower, was completed, and foundation work on the west rondel was begun in 1563. Drawing: Pekka Lahtinen, following Knut Drake's drawing.



Viewed from the direction of Vanaja, the curtain wall encircling the main castle was at least eleven meters high. Along the top ran a wood-covered firing gallery, from the rectangular loopholes of which the surroundings were observed. In the south corner of the curtain wall was located a large gate, that is to say a two-story gate tower with its drawbridge (Fig. 5). As one stepped through it into the bailey between the main castle and the curtain wall, there was, on the left hand along the wall, first a larder, then a shoemaker's shop and an armory. Continuing along the wall, one arrived at a pentagonal, thirteen-meter-high storehouse tower on the northwestern side of the wall, in which were kept the castle's textiles and most valuable household articles. Beside the tower was also located a storehouse cottage, where the weavers made fabrics and linens for the castle's needs.¹⁶

Proceeding to the right from the large gate, one arrived at the eastern corner of the curtain wall, where construction work was begun in 1559 on the round, granite gun tower, or rondel. Also, the castle's beer-making place, the brewery cottage, was located on the Vanaja-Waterway side.¹⁷ The exact location of the above-listed buildings in the castle's yard area comes out in the building-duty list for Häme's jurisdictional districts, in which was assigned the spaces that belonged to the building-and-maintenance responsibility of each district's peasants. From other connections, we know that, in addition to the shoemaker, the smith and the cooper, at least, had shops

beside the curtain wall. Outside the main castle were also a kitchen, a baking cottage, a malt cabin, a smokehouse, a slaughterhouse, a cellar, a leather storage, a coal bin, a shed and livestock shelters.¹⁸

In 1541, new cowhides were still being stretched over the windows of the scribe's chamber at Häme Castle. Three years later, the scribe's chamber was one of the rooms of the main castle in which the glazier Clemet installed, as far as is known, the castle's first glass windows: "Then Clemetti the glazier received, for he made four glass windows for the scribe's chamber, one large glass window for the new tower and two glass windows for the ladies' dormitory, twenty marks." In addition to the window glass, the scribe's chamber was refurbished by building a stove in it, of which the chimney flue was limed. Because important account materials and money coffer were kept in the chamber, its door was strengthened with iron reinforcement and a new lock. Of the officials, the bailiff, the chaplain, the underbailiff, the cellarer and the major-domo, in addition to the scribe, had their own rooms in the main castle.¹⁹ The other folk gathered, ate their meals and slept in the large rooms called dormitories. In a castle dormitory, the squires associated and spent the night. The gentlewomen lived in the ladies' dormitory, and the servants gathered in the servants' dormitory. Also, there was, for the use of overnight guests, their own dormitory.²⁰

Particularly in the coldest months of winter, heating the castle's stone rooms was laborious, and

the more people who slept close together in the same room, the better. On the castle's first floor, which in the Late Middle Ages and sixteenth century was the main castle's primary residential level, were open fireplaces. Their chimney flues, however, led directly to the outside, and consequently heat retention remained very minimal. The effect of the fireplaces improved from the beginning of the 1560s, when dampers began to be installed in them. Pans filled with glowing coals were also used in heating the rooms. A coal pan was carried as needed, for example, into the big hall called the festival hall or into the chapel, which were not kept continuously heated. In addition to the fireplaces' heating the rooms, they were, along with candles and kindling chips, important sources of light.

The castle's rooms were furnished simply. Around the walls ran benches, which were used in the daytime as seats and work surfaces, and at night as sleeping places. The office of table could be served by a board on sawhorses or affixed to the wall. The tabletop was also used in the evening for sleeping. In the rooms were footstools and chests, some of which could be locked for keeping valuables. Only the castle's officers had use of comfortable beds and chairs. Because the hearths on the first floor of the castle had chimney flues, smoke and soot were not released to damage the textiles. The tablecloths, the bench cushions and the wall curtains brought coziness to the rooms and protected the walls from chilliness. On the table in the squire's dormitory was spread, even for everyday use, a long tablecloth of sackcloth woven from hemp. It got a great deal of wear, for a new tablecloth for the squire was woven in the storehouse annually. On festive occasions, woolen bench cushions and wall and ceiling curtains, as well as tablecloths woven from flax, were taken out of the storehouse.²¹

2. The Castle Economy of the Sixteenth Century as a Subject of Research

2.1. Social-Economic Development in Sweden in the Late Middle Ages and Sixteenth Century

During the last ten years, a new, dynamic picture of the sixteenth century has been brought out in Swedish research. It has been possible to show that, like the rest of Europe, Sweden also experienced a sharp rise in population during the sixteenth century, and along with it a propagation of settlement and cultivation. New farms began to spring up at the end of the fifteenth century following the recession of the Middle Ages. During the years 1520-1600, the population of Sweden-Finland grew by 40-60 percent. It is estimated that around 1570 there would have been about 600,000 inhabitants in Sweden and about 250,000 in Finland. Only a few percent of them lived in towns. In farming and in stock raising, the century was a time of increase in development and production.²² Janken Myrdal and Johan Söderberg have answered the basic question of Malthusian theory for Sweden's part—whether the rapid population growth during the sixteenth century led finally to impoverishment. They have shown that, although agricultural production happened to fall right at the end of the sixteenth century, Sweden was nevertheless able to avoid wretchedness according to the Malthusian model. Ilkka Nummela and Petri Karonen have also, in their research on Häme's standard of living based on wage and price information, ended by judging the general development of the period 1541-1617 to be positive: Häme's standard of living rose as the period under research passed.²³ In Sweden, agriculture developed on so many different levels as the sixteenth century progressed that it was able to meet the pressures created by the population growth and the war period at the end of the century. Improved agricultural production was effected above all by the increased use of iron in implements, intensified tillage of fields, fertilization, ditching and the clearing of new fields and meadows. The coming into general use of winter rye and the two-phase rotation system were also important.²⁴

In addition, Swedish society was radically changed in the sixteenth century by the strengthening of government, which was seen and felt, above all,

as a more effective administration, a tightening of the tax system and the birth of a permanent army in support of a strong royal power. In Gustavus Vasa's reign (1521-1560), the evolution toward a centralized state began, and upon the accession of Eric XIV to the throne in 1560, he had more power than any previous Swedish ruler. During his father's period, all the measures of the state had aimed at the increase of the king's power. The economic resources were concentrated under control of the king, the Reformation legitimized the new administration, the kingship became hereditary and, in accordance with the custom of the time, Gustavus Vasa even contracted marriages taking into account considerations of power.²⁵ According to current opinion, sixteenth-century Swedish society was not as static as previously represented, but the above-described expansive factors led to change.

In order for the national economy to be able to answer to the new requirements established for the centralized administration and strong army, Gustavus Vasa had to create an effective organization for economic administration. The Crown had, by the aid of administrative measures, to obtain the country's taxes and other economic resources for its use. During Gustavus Vasa's time, the economic resources of the kingdom were concentrated to a considerable extent in the hands of the Crown. The greatest part of the kingdom was placed in subordination to an administration of bailiffs accountable to the king. The revocation of the Church's land ownership and tax income and the nobility's enfeoffment, together with the intensification of the peasants' taxation, was the central means of augmenting the state's cash receipts. In addition, a close supervision of foreign trade, the patronage of towns and the development of mining were the central elements of Gustavus Vasa's economic policy.²⁶

It is emphasized in Swedish research that behind the reform of public administration and the intensification of taxation was the need for creation of a strong army. The administration and, in particular, the wartime economy swallowed an ever-greater part of the resources of society. Gerhard Ostreich's term military state (*militärstat*) is used for the development of the early modern Swedish state. An alternative term is *maktstat*, which, as a concept, also includes the growth of the bureaucracy alongside the military organization.²⁷ Sven A. Nilsson describes the growth of the military state as a historical process in which the different elements of society are integrated for the achievement of a particular goal. Sweden was on the way toward a military state in which war and the needs of the military became the primary effectors of society.²⁸

At the end of the 1520s, Gustavus Vasa's army was still organized in the manner of the Middle Ages. The mounted service of the nobility and peasant conscripts formed the army's cadre, and the army lacked a heavy infantry equipped with modern small arms, which was already an essential part of the armed forces in central Europe. The Swedish system proved ineffective and untrustworthy alongside a modern army. In order that the Swedish army would be able to stay on a level with a continental army, income was needed for the wages of soldiers, as well as the development of a navy and armament. Gustavus Vasa was up against the same problem as his counterparts in central Europe, how to finance modern warfare? The tax system of the Middle Ages did not make possible great and mobile enough resources for the needs of modern warfare. The changes in warfare had compelled the central European princes to seek new solutions for the economic financing of the state. The replacement of medieval feudal armies with mercenary armies gave an important impetus to the development of a monetary policy, which meant primarily a change from taxes in kind to cash taxes.²⁹

In Sweden, the economy of the state was more dependent on taxes in kind than in central Europe, and this influenced economic policy as well as practice in economic decisions. The taxes were, in largest part, taxes in kind, which were collected mostly as grain, butter, meat, fish and hides. The natural economy was no problem in the national economy so far as expenses could be taken care of within the limits possible with taxes in kind. In the Middle Ages, the court traveled from one administrative center to another, and goods could be sent, within limits, between centers. The wages of administrators and soldiers quartered at the castles and manors were paid in food, lodging and clothing.³⁰ In the sixteenth century, Sweden was the only European country that still had its own administration for the collection of taxes in kind. In England and France, the systems of local administration were no longer actualities in the sixteenth century, for the economy of the state was a cash economy. Nearly all the tax revenues were collected in cash; the revenues were easily collectible and the surplus of the local administration could be conveyed without difficulty to the cashier of the central administration.³¹

In central Europe, the administration of the state had already long been based on a cash economy, and there the growing trade in agricultural products had brought cash to the farmers also. The states were able to cover their growing expenses from the banks and by loans obtained from the burghers, new cash taxes, customs or the mortgaging of farms.

The aforementioned alternatives for financing administrative costs and war did not, however, come into issue in the Nordic Countries, where a commodity economy still dominated. In Sweden, the country's production was based 90% on agricultural goods, which had primarily a consumption value. It was, indeed, a problem how the state could exploit the production of the peasants in an economy in which money was weakly developed.³² Behind the reorganization of the public administration one must see the problems created by the possibilities for exploiting taxes in kind.

The Swedish economy of the sixteenth century was not a commodity economy in the traditional sense, in which a commodity economy is understood as a policy of economic self-sufficiency or an economy in which direct and indirect exchange occurs using only natural commodities as means of payment. The natural economy of the time cannot be considered the opposite of a cash economy, for money had an important significance in the economy. In particular, Heckscher emphasizes that in many cases money had a greater significance as a measure of value than as a medium of exchange. The value of the merchandise for sale could be quoted in cash, but in the transaction butter, for example, might be used as the means of payment.³³ Although the greatest part of the tax yield was assessed in natural commodities, the proportion of cash tax was also significant. In the years 1530-1533, for example, about thirty percent of the main tax on Sweden-Finland's peasants was paid in cash, and in practice, the proportion of the cash tax increased as a result of the exchange and sale of tax goods. As need arose, the Crown could change the commodity tax to be payable in cash, at which time the value of the commodity tax was determined by its market price at that moment. The cash tax did not rise in the same ratio as the decline in the value of money, and consequently, changing the commodity tax to a cash tax could be economically profitable to the Crown. The change also served the advantage of the peasant if the delivery of some particular tax in kind caused him difficulties. It was possible for the peasants to change part of the grain tax, for example, to be payable in cash.

On the other hand, it also suited the Crown to trade in the natural taxes paid in kind. The bailiffs were given instructions to sell those taxes in kind delivered by the peasants that were not used for the local administration's own needs, or had no economic significance to the central administration, to local buyers at market price. In this way, the Crown was best able to take advantage of a rise in prices, and the receipts obtained from the sales were delivered to Stockholm.³⁴ The change of the commodity tax to

money and the bailiff's trade in tax goods raised the amount of cash tax considerably.³⁵ In Häme Castle's 1543 account, under the heading *Penningar för sålda partzeler*, is an account examiner's comment that indicates that the king, however, did not always consider the changing of the commodity tax to cash the best resolution. Each situation was to be considered separately and the Crown's advantage taken into account. Castle bailiff Isak Nilsson had exchanged six *skeppspund*, nine *lispund*, nine *nål* of food fish for cash, obtaining receipts of thirty-five *mark*, seven *öre*, sixteen *örtug*. The account examiner's comment to the castle bailiff ran, "He was told that after this he should not collect cash instead of food fish, but collect all food fish and use it for eating at the castle."³⁶

Two interconnected features dominated Gustavus Vasa's policy of the 1530s: the assembling of a mercenary army based on foreign soldiers and an effort to increase the Crown's cash revenues. At the beginning of the decade, Gustavus Vasa had begun to recruit mercenaries from Denmark, Livonia and Germany. The reasons were the internal unrest and the fact that an army composed, in the main, of peasants equipped in the manner of the Middle Ages was not sufficiently effective in the face of Christian II of Denmark's well-equipped and drilled mercenaries. Hammarström emphasizes that Gustavus Vasa needed a foreign army under his personal command above all for the strengthening of his own position against the domestic nobility and peasants. Around the years 1532/1533, Gustavus Vasa had in his service an infantry fulfilling continental standards, and in the years 1534 and 1535, more domestic and foreign infantrymen, or *knektar* were engaged. It is not possible to give an exact figure of the size of Gustavus Vasa's army at this time. In 1534, the army consisted of three companies (*fäniker*), and during the following year, the size of the army grew by about six companies.³⁷

The wages and maintenance of the armed forces were now the state's largest expenses, the liquidation of which required cash. From the year 1530 on, one can, indeed, see that all the surplus money revenues were sent from the castles and other administrative centers of the Crown to the royal chamber in Stockholm. Only the most essential money assets were left at the local centers. The amount of the money revenues collected in the crown chamber was increased by selling tax items on the local markets, by changing commodity taxes to be payable in cash and by imposing auxiliary taxes payable in cash. The increased production of Sala's silver mine helped the state decisively in managing the growing expenses. The army based on mercenaries thus accelerated the

development of an administration based on a cash economy even in Sweden.³⁸

Surprising changes occurred, however, in the state's policy at the beginning of the 1540s: taxes in kind were reintroduced, their storage and sale were made more effective by new organization and a domestic infantry and navy began to be assembled as the foundation for the army. At the beginning of the decade, about 2000 native men were recruited, and ten years later, their number had grown to over 10,000 men.³⁹ The change is accounted for as a return to the medieval commodity economy, at which time the effects would have been a rise in the general price level and a growth in the amount of taxes in kind attendant upon the revocation of the tax revenues of the Church. The more intensive utilization of the taxes in kind and the trade carried on with them by the Crown were, however, a conscious policy, which, against the European background, was even modern. Gustavus Vasa had soon noticed the foreign troops becoming too costly, and in addition their recruitment was difficult because the competition for mercenaries was stiff. The Swedish army had to be founded on a domestic base, and the wages of a peacetime army had to be arranged within a commodity economy, the most suitable form being for the soldiers to receive full maintenance, clothing and a small cash wage. Only in wartime was the international wage system used by paying a monthly wage with which the soldiers paid for their own provisions.⁴⁰

The emphasis on the position of taxes in kind in the 1540s should not be viewed as an economic regression of the state. The matter was, rather, a flexible exploitation of taxes in kind. The taxes in kind offered different possibilities to the state's economic system, and consequently, they were still useful. The attitude toward taxes in kind became, in this period, more one of control than previously. They were more closely supervised, and an organization was developed for their utilization. In the middle of the decade, central warehouses (*varuhus*) were established in the larger towns as centers for the national collection activities, to which the commodity items were transported for further delivery or sale abroad. The administration of the commodity items was organized to perfection by the 1550s, and the same system was still being used during the time of Gustavus Vasa's son's.⁴¹

The central warehouses were in Stockholm, Norrköping, Söderköping, Kalmar and Älvsborg. Finland belonged in Stockholm's collection area, for which Finland had, along with Uppland, Västmanland, Dalarna and Norrland, a great economic significance. In addition to foreign trade, deliveries of goods left the warehouses for the

Crown's castles and manors. A fish from Finland could be forwarded on to Kalmar, Stegeborg, or Arboga. Deliveries came from different parts of the kingdom in accordance with the structure of each area's industry, and in the centers, these formed a valuable economic whole. Economic cooperation between the Crown's centers also raised the value of the articles. The deliveries from Finland to the storehouses of Stockholm decreased in the second half of the sixteenth century, with war consuming an ever-greater part of the tax revenues. The goods from the bailiwicks of Finland were sent straight to local centers, from which they were distributed to the army and navy.⁴²

With war becoming constant in the 1560s, the maintenance and wages of the domestic troops caused problems for the national economy. Eric XIV's economic experience was not sufficient to resolve the financial problems of the war. He struck new silver money at a furious pace, whereupon Gustavus Vasa's silver reserves were soon depleted. The continued financing of war would have required a permanent money tax, the enactment of which Eric XIV did not, however, initiate. He resorted to annual special taxes, or provisions surcharges (*kostgärder*), which were sent straight to the maintenance of the troops. The special taxes were collected as raw products, and consequently they did not cause as much opposition as permanent cash taxes. In this way, the maintenance of the troops could be secured. From Häme, also, a significant part of the annual taxes, as well as the provisions surcharges, was taken straight to the Baltic front at the end of the 1560s.⁴³ In order that the special taxes would be able to be used in the most controlled manner possible, an Administration of Supply Stores was established during the Seven Years' War of the Nordic Countries (1563-1570). At that time, the function of the army's maintenance was a particularly serious problem. The local supply stores received the tax articles and sent them on to the soldiers. In Finland, the most important storehouses were in Turku, Helsinki and Viipuri, where they functioned for the entire period of John III's reign.⁴⁴

In the search for a resolution to the problem between an economy based on taxes in kind and the maintenance of the army, an economy was developed, particularly from the 1540s on, of crown castles and manors. The castles and manors were the means of the Swedish central administration of that time to get its hands on the local economic resources and utilize them in the best manner possible. The castles also very well suited the economic policy, one central purpose of which was to take care of the army's supply of provisions. The economy

practiced by the Crown can thus be considered above all as nationally directed, because its purpose was to guarantee the kingdom sufficient resources in an outbreak of war or famine.⁴⁵ Heckscher has called the peasants' old economic management a storehouse economy (*förrådsekonomi*), in which the procurement of sustenance was tied to the rhythm of the seasons. The grain bins were filled during the growing season. Meat and fish were capable of procurement and preservation in greater quantities at certain times, which had to be used effectively to advantage.⁴⁶ The Crown's management of finances can also be called a storehouse economy, into the organization of which the castles fit very well.

On New Year's Day, 1547, the king wrote to the bailiffs of Finland, warning them of a battle against Russia. The resources in the storehouses for the possible clash must be grain, beer, bread, hay and feed.⁴⁷ The model for Gustavus Vasa's continually most inopportunistically prepared economic policy lay in the medieval military policy of the central European cities. Upon the outbreak of war, the consumption of foodstuffs was controlled by statute, bans on sale and export to foreign countries went into effect, maximum prices on goods were imposed and the production of foodstuffs was under control of the city managers.⁴⁸ In the Middle Ages, a stable food supply was also striven for on the farms of the Church and feudal nobility, which was the central function of a storehouse economy. With the aid of a storehouse economy, it was possible to prepare for catastrophes such as war and famine years. For the ordinary peasant, the surplus was hardly enough for long-term storage. A storehouse economy also presupposed wealth. For those who had the prerequisites for maintenance of storehouses, social influence increased.⁴⁹

In his 1556 and 1558 bailiff directives, Gustavus Vasa charged his bailiffs with observing the ordinances, certain frameworks within which the economy of the castles and manors was to be managed.⁵⁰ In order that production and consumption should correspond to each other as well as possible, certain requirements were imposed for them in the ordinances. Production goals were specified in advance for farming and cattle breeding. Because board was the castles' biggest item of expenditure, it was specified in the ordinances how much food per person could be consumed per year. There were also corresponding directives for the feeding of the horses and cattle. Gustavus Vasa's ordinances are considered a sort of makeshift budget. Corresponding directives that attempt to anticipate consumption are found for the German administration already in the fifteenth century. Unique in Gustavus Vasa's ordinances was

that he attempted also to guarantee a certain level of income in advance by imposing specific production goals.⁵¹

The Russian war that began in 1555 showed concretely how difficult the organization of the army's maintenance was. Soon after the outbreak of the war, 14,000 infantry soldiers and 1500 cavalymen had assembled in Finland, of whom the majority came from Sweden. The tax goods collected in Finland did not suffice for the provisioning of the army, nor did the deliveries from Sweden go as planned. Neither could the maintenance of the troops be worked out in a money wage paid as cash because Finland lacked the markets for buying food. In the ensuing situation, the king had different possibilities for securing the maintenance of the army: procuring sustenance from conquered areas, making the taxation of the peasants more stringent, increasing foreign imports or developing the Crown's own production. The king chose the last alternative, and in 1555 a charter for cattle farms was issued, in accordance with which a cattle farm was to be established as an agricultural center in every second or every third parish in Sweden and in every parish in Finland and in the area of Norrbotten.⁵² The experiences of the Russian War showed that a war could not be fought in Sweden-Finland if the provisioning of the troops was based on the soldiers' procuring provisions with their wage money. The taxation must be concentrated on raw products, but the local peasants were able to produce foodstuffs only in limited quantity and the transportation systems were inadequate. In this situation, the cattle-farm project was seen as the solution to the maintenance problem.⁵³

The letters sent by Gustavus Vasa in January, 1556, illustrate the most precise directions, which were imposed for the establishment and management of the estates. As the basis of their own economy, fields, meadows, forest and fishing waters had to be at the disposal of the estates. Livestock had to include at least 100 cows, 20-30 oxen, 20 breeder horses and bull calves and heifers. A sawmill and flour mill were to be built for the area. Farm production was to be raised by ditching the fields, by slash-and-burn agriculture and by clearing new field and meadow areas. Per Nyström emphasizes that, in the project's beginning stages, its possibilities for making the Crown's administration and production more effective were truly believed in. The Crown now had the opportunity for the production of grain, feed and meat, all of which were needed for the maintenance of the new army.⁵⁴

The cattle-farm project was never carried out to its planned extent. The plan was carried farthest in Finland, where in practice three administrative

parishes formed an estate bailiwick. At the end of the 1550s, the number of estate bailiwicks was at its maximum (70 cattle farms). In the time of Eric XIV, however, interest in the estates declined already, and in the beginning of the 1570s, many estates were terminated or enfeoffed. It was noticed quite soon that the estate bailiwicks produced little return compared to the great costs of maintenance, of which the most significant were the wages and feeding of the staff.⁵⁵ Large sums were invested in the establishment of the new estates and the overhaul of the old, but upon commencement of real operation, productivity could not be raised. On the estates of the Mälaren region, for example, production increased with the aid of new methods. Knowledge of the best means of production, however, did not spread widely, although the project was under central supervision. In the greatest part of the country, the production of the individual estate was completely dependent on local technology and skill. The unprofitable accountancy, however, does not tell the whole truth about the significance of the estates, for the estates were important bases for soldiers and administrative centers of their areas.⁵⁶

The improvement of the accounting of the Crown's castles, estates and bailiwicks was part of the economic development program of the farms. The Crown's need to increase the possibilities of controlling its farms gave rise to extensive and technically high-level account data. The accounts known as the bailiff's accounts included the accounts of the castle fief's districts and bailiwicks and the central castle. The accounts of Finland's castles are preserved as a nearly continuous series from the year 1539 (1539/1540) to the end of the century. In Sweden, only the account books of Kalmar Castle are preserved as well as the accounts of Finland's castles. In addition, the account books for fiscal years 1529/1530 and 1530/1531 are available for Häme Castle from previous years.⁵⁷

The accountancy, which was to be delivered to Stockholm annually for examination, gave the Crown a very good opportunity to follow the economy of his farms. The Chamber Ordinances of 1541 and 1547 were the most important directives issued by the king for the economic administration and accountancy of the kingdom. Most essential in the ordinance of 1541 was that, for management of the economy, there was to be a chamber divided into two departments. The keeping of accounts was controlled in the accounting chamber, and the tax chamber was the cashier's department for the needs of the central administration. Later, indeed, the king often gave the bailiffs detailed accounting directives, of which, from the standpoint of Finland, the most significant

were the orders addressed especially to the bailiffs of Finland's castles, estates and jurisdictional districts in the years 1556 and 1558.⁵⁸

These abundant and, for their time, modern account data offer an excellent opportunity to familiarize oneself with the Crown's financial management. The purpose of the castle's accounts was, on the one hand, to give an accounting of the castle's income, that is to say of its own production and of the tax items delivered by the peasants and, on the other hand, of the castle's expenses. Although the data are very numerical, they provide many possibilities for acquainting oneself with the financial management of the castle. There is information in the accounts on the Crown's workers, their compensation, their periods of employment, their living conditions and their eating. With the aid of the accounts, one can follow the castle's farming, animal husbandry and the implements and practices used in agriculture. In the research of sixteenth-century history, there is little source material available generated outside of tax collection. For this reason, the account books of the Crown's castles and estates are the most significant and interesting source categories preserved from the period. They offer manifold opportunities for the study of sixteenth-century social history and agriculture.

2.2. The Research Problem

During the last couple of decades, the economic and social history of the Late Middle Ages and sixteenth century has been much studied, especially in Sweden.⁵⁹ This research and the discussion proceeding from it show that sixteenth-century research still has much to yield. In much of Swedish research, the point of departure has been one economy, the detailed treatment of which has opened new vistas for understanding the whole functioning of society. As in Sweden, we in Finland also have abundant source material available, which makes it possible to treat the functioning of one economic entity extensively and in its various aspects. The picture of sixteenth-century economy and society becomes manifold.

The following concentrates on an examination of a medieval castle of the Kingdom of Sweden, Häme Castle, in the mid-sixteenth century. The center of attention is, above all, the castle economy, which at Häme Castle, as at all the castles of the kingdom, was at that time organized to serve the needs of the centralized kingdom. Many factors

changed the society of Gustavus Vasa's time: the administrative power of the king increased, an ever-greater part of the resources of the kingdom was under control of the king and a modern army was established for support of the centralized kingdom. The Crown needed craftsmen, merchants and a more efficient agriculture so that the needs of the new state would be capable of being secured. From the 1540s on, in particular, Gustavus Vasa's activities aimed at the development of the economic organization under control of the Crown. Can these changes be perceived in the economy of Häme Castle in the mid-sixteenth century? What was the position of Häme Castle when the resources were concentrated in the hands of the king?

The subject of this research is the organization of financial management at Häme Castle in the years from 1539 to about 1570. By the concept Häme Castle is meant in this connection the aggregate formed by Häme's medieval, central castle and the three landed estates under its control, medieval Ojoinen and Saarinen and Hätilä founded in 1557. The landed estates had neither administrative nor economic independence, and their lands were located within the castle area specified for Häme Castle. On these bases, the landed estates can be viewed as belonging to the same entity as the main castle.⁶⁰

In the research, the history of Häme Castle is followed from the beginning of Gustavus Vasa's reign (1521-1560). A closer examination does not begin, however, until 1539, when the first castle accounts were rendered at Häme Castle in accordance with Gustavus Vasa's bookkeeping reform. About 1570, which was clearly a turning point in Finland's circumstances, has been selected as the terminal point.⁶¹ The latter years of Gustavus Vasa's reign and Eric XIV's nearly decade-long kingship (1560-1569) was a time of peaceful development in Finland. The period of continuous war that began in Sweden in the 1560s was not yet at that time felt decisively in the development of Finland, although the special provisions taxes were assessed also in Finland during the years of the Danish War (1563-1570). The 1560s are considered the zenith of the economic growth that began in Finland in the Late Middle Ages. According to Suvanto, new farms came into being and old farms were divided up in the Sääksmäki District of the Häme castle fief in increasing numbers clear up to the beginning of the 1560s. During the course of the 1560s, more farms were abandoned and came under control of the nobility than new came into being or were allotted. He considers the development a sign of beginning stagnation. This was, however, only a prelude to the events of the end of the century.⁶² The Russian War, which broke out in 1570, brought war

concretely to the area of Finland, and the war period, which continued through the end of the century, meant much hardship for the Finns. The special taxes, conscription and provisioning of military troops, together with a cooling of the climate, strained the endurance of the peasants.⁶³ The decades selected as the subject of research thus represent a time of relatively peaceful development. The Russian war of the years 1555-1557 did not spread to the extent that it would have caused overwhelming hardship.

In order to make it possible to study the financial management of Häme Castle in the mid-sixteenth century and at the same time give attention to the social and economic development of the period, the financial management of the castle has been divided into three sectors, applying Myrdal's and Söderberg's three-sector model for representing sixteenth-century development. Janken Myrdal and Johan Söderberg have introduced the three-sector model familiar from political economy, which they have adapted to delineate the social development, the division of labor and the production in Europe and Sweden in the Late Middle Ages and sixteenth century⁶⁴:

- 1) the primary sector was responsible for the production of food,
- 2) the secondary sector took care of the other goods and the manufacture of material commodities, that is to say trade, handiwork and mining belonged to it, and
- 3) the tertiary sector was responsible for the non-material services, that is to say that the employees in this sector were primarily in the service of the state, the army and the Church.

The three-sector model was centered above all in Sweden's sixteenth-century agricultural production, which in an agrarian state like Sweden was the primary issue. The model presented by Myrdal and Söderberg, however, differs from the other theories treating of the sixteenth century in that the changes in agricultural productivity are explained not merely from the standpoint of population growth, but an attempt is also made to take into account the other factors that, in their entirety, had an effect, such as the economic and technical development, the consumption of resources in the needs of the state and the army and climatic changes.

With the aid of this conceptual model, one can perceive the phenomena and conditions that had an effect also at Häme Castle in the mid-sixteenth century. It is assumed that, at that time, the production, the division of labor and the consumption were divided, at the castle, among

the primary, secondary and tertiary sectors. The following elements belonged to the different sectors at Häme Castle:

1) The primary sector included farming, animal husbandry and fishing, that is to say production of the castle's foodstuffs. The labor force, the field area, the capital in livestock, the meadows, the pastures, the structures for the requirements of agriculture and the fishing waters formed the prerequisites of production. Also, the orientation of the agriculture, the implements used and the practices affected production. In the fishing practiced at the castle, attention is paid not only to the size of the catch, but the examination also includes the fishing practices and methods of preservation used. The making of fishing equipment and processing of the fish can be considered a special skill, and it is even reasonable to consider whether fishing should have been included in the secondary sector. Fishing was, however, primarily a matter of food procurement, and consequently it has been considered as being included in the primary sector.

2) The processing of foodstuffs and handiwork belonged to the secondary sector at the castle. Those who worked permanently in the service of this group can be divided according to their functions into the craftsmen who made everyday utensils, the staff who attended to the food service, the storehouse weavers and the building-trades professionals. In addition, separated into their own group are the so-called guest artisans, who did certain work of a contract nature at the castle. To them belonged professionals of many trades, such as leather-dressers, tanners, turners, masons and glaziers. Among the guest artisans, thus, could be professionals, such as masons, who also belonged to the castle's permanent staff.

3) In the service of the tertiary sector at Häme Castle were the officials of the Crown, their closest aides, the clergymen and the soldiers. The castles' and estates' part in making the administration and economy of the Crown more effective was significant. This placed its own demands on the castles' officials, their aides and the soldiers. Gustavus Vasa imposed new tasks for the state, and their realization in practice was chiefly the responsibility of the tertiary sector. The division of labor within the tertiary sector was carried far. To this group at Häme Castle belonged for several years, in addition to the administrative staff, the permanent garrison that attended to guard duty and the soldiers of the Crown's army, an eel bailiff, a piper and an executioner. Also, the staff of the Crown's stud farm is included in the tertiary sector because the primary function of the stud farm was to raise horses for the needs of the administration and the army.

As in all classifications, there are problems in this one, and the sector-divisions should not be interpreted too strictly. Sector division must be considered, above all, a technical device, which renders possible an examination of the special features of the Crown's economy. Sweden-Finland was, in the mid-sixteenth century, above all, an agrarian state, and consequently it is reasonable to question whether one can find a division of labor in the society of its time, especially in the economy of the countryside. In the towns, a clear division into different professions prevailed in the Middle Ages already. According to the city ordinance of Maunu Eerikki's son, a person could not carry on trade and a craft at the same time. The larger the center, the clearer was the specialization into different functions and the more townsmen there were who in no way participated in agriculture. In practice, the line between craftsman and merchant could waver, but the ordinance illustrates the attempt at a division of labor.⁶⁵

In the small towns, the craftsmen had their patches of land and their cattle, the production of which was of vital importance to them in addition to the income obtained from handiwork. In the countryside, a person had to be versatile to secure his livelihood. Farm families wove the fabrics themselves, carved the dishes and built the dwellings. The castle workers certainly did occasional work also in the service of the other sectors. For example, during the busiest times harvesting hay and grain crops, time had to be used effectively to advantage. Then, much labor power was needed, and even the artisans were in the meadows and fields. The sector division is based on the assumption that, at the castle, each worker's primary duty was to work in something from the three aforementioned sectors. Upon need, they were also transferred flexibly into the service of the other sectors. An examination by sector is a productive means of analyzing the economy of the castle and its relation to the developments of the time, when the movement of workers between the groups is kept in mind.

The functions of the tertiary and primary sectors are clear. The secondary sector raises the most questions. Were its workers full-time artisans? The hypothesis is that, above all, the functions of government promoted a division of labor at Häme Castle in the mid-sixteenth century. It is important to be able to show that the staff of the secondary sector was, before all else, full-time artisans and specialized professionals. The different crafts are examined so that the special skills of the staff and the far-reaching division of labor come into view. One cannot compare the castle to a peasant household,

which along with agriculture also accomplished, in largest part, its own handicraft. The castle was a large household, in which just the arrangement of the daily eating required its own person in charge. Special workers had to be hired for the kitchen, the bakery and the brewery. The dormitory matrons took care of the cleanliness of the rooms, and full-time weavers worked in the storehouse. In addition, the Crown had its own special requirements, which the secondary sector had to fulfill. Gunsmiths and fortifications masons had to be hired. It is interesting to follow whether these specialized professionals turn up at Häme Castle.

The concentration of the artisans and administrative staff in their own functions was possible with the primary sector attending to the production of foodstuffs. It is important to consider and discuss whether, in the agriculture of the castle, attention was given, in plant selection and cattle raising, for example, to the castle's special position and needs as a crown farm. This would be an indication of the specialization of the primary sector. In the same connection is also the question, in what way did the farming and livestock production practiced at the castle deviate from the agriculture of the surrounding peasants? In Sweden, the economy of the royal estates characterizes well the agriculture on the surrounding peasant farms. On the estates, of course, there was experimentation with new techniques. Those methods that were not suited for prevailing conditions, however, were given up very soon. On the other hand again, the peasants adopted those innovations from the estates that were practicable and increased productivity.⁶⁶ Did the use of iron in implements increase, were the fields fertilized and ditched more diligently than before and were new fields and meadows cleared? Are those elements of expansion that raised the productivity on the crown farms in Sweden, thus, found in the agriculture of Häme Castle?

We do not have the means to compare the living conditions, health or clothing of those living at the castle in the sixteenth century. A study of food consumption is, thus, one of the few means of assessing the social differences among the primary, secondary and tertiary sectors. Each position belonging to the staff of Häme Castle determined what kind of food one was permitted to eat. Eating was hierarchically well controlled, and for prevention of abuse, the castle's staff was divided between the bailiff's table and the servants' table. The consumption of the tables was monitored by compiling weekly inventories of the food consumed and of those who took their meals at the table. Unfortunately, the weekly food-consumption

inventory from Häme Castle is preserved only for the year 1550. For the years 1548 and 1559-1561, summaries of the whole year's food consumption, prepared with the aid of the weekly lists, are available.⁶⁷ Roughly, one can proceed from the assumption that the staff of the tertiary and secondary sectors ate at the bailiff's table and that the people of the primary sector belonged at the servants' table. In addition, for the year 1559, from which is available the whole year's summary of food consumption as well as the weekly lists of those who ate at the castle, it is possible to divide the people accurately among the different sectors and make an exact calculation of the consumption of each sector.

In assessing the food consumption, how much energy one person's daily consumption of food included is calculated. Kilogram calories are used in the calculation, although the kilogram calorie as a unit of measure of energy is already outdated. In this way, comparison of the results with the kilogram-calorie calculations presented by other researchers is as exact as possible. With the aid of the kilogram-calorie calculations, one can thus compare the social differences between the workers belonging to the different groups. In addition, they afford the possibility of studying how large a part of the castle's consumption of foodstuffs, or calories used daily, it was able to produce itself. One must remember that, although a varied economy was practiced at the castle, its own production was not able to satisfy all the needs. The castle got a considerable part of its needed resources from its service area, that is to say as tax revenues from the peasants of Häme's castle fief. The castle's economic relations with its castle fief and all the rest of the kingdom are treated in the third main section before going on to a closer examination of the economy of Häme Castle.

Häme Castle's system of measures is used in the research. At the end of the article is an appendix, in which is explained the system of measures in use at Häme Castle in the mid-sixteenth century as well as its relation to the measures of Stockholm and to modern measures.

3. Häme Castle as an Economic Center

3.1. The Castle Fief as a Support Area

The area subordinate to the administration of the castle, whose function it was to secure the upkeep of the castle and its men, was called the castle fief. It may be presumed that the castle fief was formed around Häme Castle soon after the castle's founding. It is difficult to say anything precise about the relations between the castle and its surroundings and the extent of the castle fief in this early stage. Apparently, the basis of the castle fief was the ancient Province of Häme (*Tavastland*).⁶⁸ During the Middle Ages, Häme's castle fief gradually took shape to include the Districts of Hattula, Sääksmäki and Ylinen. The fief surrounding the castle was a vital support area for it. Its administration, indeed, had to be organized so that the fief's resources could be exploited as effectively as possible.

The taxes paid by the peasants reveal what consignments of goods were needed in the economy of the castle. On the other hand, classification of the deliveries by area reveals the direction of the peasants' production and the possible local specialization in the different parts of Häme. Although the districts of Häme were areas created for administrative needs, each district also formed its own economic-geographical entity. The data on the percentage of foodstuffs delivered to Häme Castle

from the Districts of Hattula, Sääksmäki and Ylinen during the years 1548 – 1570 have been collected in the schedule 1. The examination begins with the year 1548. At that time, the administration of the districts was made independent, and only those tax goods were delivered to the castle that were actually used in the castle's own economy. The separation of the administration of the districts and the castle from each other in Häme was not at all a solitary event. Elsewhere in the kingdom as well, Gustavus Vasa undertook the radical reform of separating the administration of a castle and its support area from each other, after which only the most important shipments of goods were delivered to the castles.⁶⁹

The District of Hattula was the true heart of Häme, where agriculture and a settled population had the longest tradition of all and the economy was based on farming and stockbreeding. Hunting and fishing no longer, in the Late Middle Ages and sixteenth century, had economic significance for the area. The District of Sääksmäki was also an important farming region. The most extensive cultivated land areas of Häme were right along the Vanaja Waterway. The area of the District of Sääksmäki, however, also had large lakes abounding in fish, and wilderness land in northern Häme belonged to the area; consequently, wilderness excursions had significance for the economy. The District of Ylinen, however, was still in the mid-sixteenth century Häme's true hunting and fishing area. The farther north and east one went from the castle, the smaller the fields became,⁷⁰ and the more important place the yield of the forests and waters had in the economy of the peasant.

Schedule 1. The data on the percentage of foodstuffs delivered to Häme Castle from the Districts of Hattula, Sääksmäki and Ylinen during the years 1548 - 1570. No attention has been paid to deliveries of rye, or to peas and beans, because of the small amount of these.

	Hattula Dist.	Sääksmäki Dist.	Ylinen Dist.	Total %
Barley	42.5	31.5	26.0	100.0
Malt	27.0	43.0	30.0	100.0
Hops	54.0	34.0	12.0	100.0
Butter	58.0	28.0	14.0	100.0
Pre-cut meat	43.0	36.0	21.0	100.0
Ham	31.0	42.0	27.0	100.0
Lard	30.0	49.0	21.0	100.0
Birds	2.0	29.0	69.0	100.0
Hares	1.0	61.0	38.0	100.0
Pike	-	20.0	80.0	100.0
Bream	-	-	100.0	100.0
Food fish	-	26.0	74.0	100.0
Barrel fish	-	58.0	42.0	100.0
Fresh fish	30.0	55.0	15.0	100.0

The difference in the basis of the economy of Häme's three districts also appears in the tax deliveries. The most significant part of the products of farming and animal husbandry came to the castle from the Districts of Hattula and Sääksmäki. Hunting or fishing products were not delivered from the District of Hattula at all, except for fresh fish, which for reasons of preservation were brought mostly from the castle's nearby districts. Such a small amount of fresh fish was delivered, however, that it did not have a great significance for the castle's food economy. The birds and hares were taken in the wilderness of the Districts of Sääksmäki and Ylinen. From the standpoint of fishing, the most significant regions were the wilderness lakes and the nearby lakes abounding in fish of the peasants of Ylinen district, from which the greatest part of the fish eaten at the castle was caught. Only fry salted in barrels was delivered from the District of Sääksmäki in greater amounts than from the District of Ylinen, from which, because of the long trips, light, dried fish was usually transported to the castle.

In addition to the tax revenues collected from the province, the corvée performed by the peasants had an important significance for the economy of Häme Castle. At the beginning of the modern period, three days of corvée were done at the castle each year for each bow. By a bow was meant a man capable of hunting, who had the strength to draw a bow and go into the woods. In Häme, the bow tax was restricted to payment by the freeholders, their sons and their sons-in-law. The hired men were outside the tax. In practice, there was also an age limit, so that upon reaching fifteen years of age, the freeholder's son was obliged to do three days of corvée per year at the castle.⁷¹ The corvée could be paid with articles in kind or money, which right was exercised by the residents of the most distant districts. The obligations of the districts included taking care of the roofs of the main castle, the fortifications of the curtain wall, the buildings of the landed estates and the pasture fences. In this connection, the Crown was unconcerned whether the residents of the districts did the work by turns or paid workmen to do it.⁷² The main thing was that the work got done. If a large construction project was undertaken at the castle, the whole province was ordered to carry it out. From all over Häme, by land and water, heavy loads of granite, logs, beams and boards were transported to the castle's construction site.⁷³

Public Authority and the People of Häme

The peasantry of Häme had, at that time, to deliver the taxes to the castle, participate in construction work, arrive each spring for plowing and harvest the crop in the fall. When the order went out, they had to leave to transport the Crown's load of goods to Turku or provide transportation for officials or district-court personnel arrived in Häme. Wartime always meant special taxes. The residents along the Ox Road and the Upper Viipuri Road expected infantry troops marching over the fields. Military detachments with their mounts were stationed at fortified camps around the province. What was the attitude of the people of Häme toward the public authority in the sixteenth century? Did they carry out their obligations without grumbling even when they felt themselves suffering injustice? Blomstedt has calculated that 741 cases were handled by the Circuit Court of the District of Sääksmäki in the years 1552-1555. Of these, one-third (32.9%) were matters of tax contumacy. In the mid-sixteenth century, there was a prolonged dispute between the peasants and the Crown over the hay tax. At the end of the 1550s, in particular, the peasants left the hay tax unpaid because they regarded the Crown's changing the agreed-upon custom contrary to their sense of justice.⁷⁴ Theft of the Crown's tax claims was a serious crime, the perpetrator of which could be declared a crown thief. Nevertheless, the farm masters might attempt to mix husks in the tax grain, or attempt to have nonexistent corvée entered in the castle's bookkeeping. In the spring of 1559, Jaakko Pietari's son from Kalvola was locked up in the castle for the attempted theft of limestone. He was sentenced in district court to flogging, and one ear was cut off as the mark of a thief.⁷⁵

As Suvanto has shown in his studies of the District of Sääksmäki, the court fines tell of Häme people who didn't always deliver tax loads obediently to the castle. If necessary, they ventured to resist the castle lord and his troops. There was at no point, however, a matter of real rebellion. The situation was at all times under control of the authorities, but a great deal of respect was not felt for the representatives of the Crown. Juho Sipi's son from Toijala had beaten the horse of the castle scribe, Simon Nilsson, so severely that the horse was seriously injured. A fine of three marks was imposed on Juho Sipi's son in court. In a summer court session of Hattula, a fight between Matti Knuutti's son from Pekola and a servant of the castle lord Erik Spåra was dealt with. Matti Knuutti's son had to

pay a fine of six marks for inflicting a flesh wound.⁷⁶ Erkki Pietari's son from Kalvola refused to surrender a pack horse to the castle lord Erik Spåra, and he even chewed him out. In Mälkiäinen, the whole village apparently attacked the bailiff's servant Lasse Kock in force, for a common fine of 60 marks was levied on the whole village for four wounds and twelve bruises. The people of Sääksmäki did not leave without grumbling to transport limestone to the construction site at Viipuri Castle. The consequence was a fine for the ringleader of the rebellious youths, Pentti Antti's son. In many years, fines were issued in court to several freeholders or to whole districts because the hay taxes or firewood had not been delivered to the castle or the castle's buildings were still not repaired.⁷⁷

A little row between the soldiers quartered at the castle and the people of Häme was common. The homicide of a servant of the Crown was, on the other hand, a rarity. The servants of the Crown had permission to carry blades, which were forbidden to the peasantry. The Crown's men were thus well protected from the peasants' outbursts of anger. Anders Livländer, who belonged to the castle's squires, was not a man liked among the peasantry. In the winter court session of Saariöinen in 1548, Birgitta Niilo's daughter had to pay fines for insulting Anders, and a year later Olavi Olavi's son from Toijala was charged with slander of the same man. The situation between Anders and the people of Toijala became further strained, for in the fall court sessions of 1550 Master Antti Matti's son from Toijala was sentenced to death for the homicide of Anders Livländer. In accordance with the legal usage of the time, a death sentence could generally be settled with a fine. This time, however, no mercy was shown because a homicide of a man of the Crown was at issue.⁷⁸

Dealings between the castle and the people of Häme were in no way limited to fulfillment of duties required by the Crown. The castle was the region's largest employer, which, in addition to permanent jobs, offered possibilities for additional income to the artisans of the surrounding area. For example, Niilo the tanner, who lived in the village of Järviöinen, went as needed to treat hides at the castle. The castle and the peasants also traded with each other. The sale of game-animal hides to the Crown was not necessarily always done willingly, for the Crown had right of first refusal. Fine moose hides would have brought a better price on the market

than what the Crown offered. New fishing boats, tar and millstones were often procured for the castle. In some years, boards, logs, milk tubs, basins and plates were also among the purchases.⁷⁹ One can well presume that these types of acquisitions were made on the local markets and that the boats and millstones were not transported to the castle from a distance. The castle thus supported professional handicraft. The production of millstones, for example, might have been developed already in the sixteenth century as a cottage industry for market.⁸⁰

Particularly in the 1540s, the peasants of Häme often went to buy grain from the castle. Hunger and concern for subsistence forced 150 peasants in all to buy rye, barley, oats and malt from the Crown in 1545.⁸¹ Heikki Juho's son from Pintiälä, Heikki Olavi's son from Parola and Matti Antti's son from Luolaja had come to buy rye. Kaarina Juho's daughter from Luhtiala, Heikki Niilo's son from Loppi and Esko Lauri's son from Miemala were among the barley buyers. Matti Heikki's son from Virala, Jaakko Lauri's son from Leppäkoski and Matti Olli's son from Rehakka needed oats. The largest part of the grain buyers was from the castle's nearby districts of Mäskälä, Loppi, Kalvola, Janakkala and Lehijärvi. Need, however, had driven the peasants into action all the way from Sysmä and Asikkala.

The famine years had tried the peasantry for some time already and would come to try them more, for the year 1546 is recorded as the fourth successive famine year. In 1543, the castle's scribe recorded how "at the castle, grain was sold to the poor peasants and to the indigents." The crop failures did not try the Crown as severely as the peasantry. Fair crops were gathered from the castle's fields, and with the aid of the taxes collected from the peasants the grain reserves could be maintained. The castle's granaries were security for the surrounding area in famine years. Among the grain buyers in 1545 was also the castle bailiff, Isak Nilsson, who bought grain to give to a poor woman. After the Reformation, the possibilities for the Church to practice poor relief were diminished, and the responsibility for all the poorest was also transferred to the Crown. Each year, a few half-pecks of grain were given from the castle to the blind, the poor and the beggars. Saint Pentti and Saint Juho (apparently nicknames) got altogether in 1540 fourteen ells (about 840 cm.) of sackcloth for clothing material, and in 1545 six ells (360 cm.) of sackcloth were donated from the storehouse tower to one mendicant in the name of God.⁸²

3.2. Economic Connections with Other Parts of the Kingdom

Häme Castle had continual economic dealings with its castle fief. In addition, the castle and castle fief participated in the transportation of taxes in kind between the Crown's castles and estates, and consequently these also belonged to the national economic organization. In the first year of Gustavus Vasa's reign, the domestic political situation was still unstable, and so a significant part of the tax revenues had to be left at the local centers to maintain large garrisons. The situation settled down at the end of the 1520s and the deliveries to Stockholm increased. At the turn of the 1520s and 1530s already, it was possible to send large quantities of grain, meat and fish from Häme Castle to Stockholm.⁸³

In researching where in the kingdom the most active economic connections with Häme Castle and the castle fief were, we have at our disposal two main sources: knowledge of the sixteenth-century highways and water routes and the mentions of goods deliveries to different parts of the kingdom in the account books of Häme Castle and its jurisdictional districts. Along with administrative factors, the economic requirements decisively affected the birth of routes. Geographic conditions, for their part, determined the selection of route and mode of transport, whether a useable water route was available or resort was made to the most passable highway. The need for relations cultivated the connections between centers, which were strengthened or weakened by natural conditions. The traffic routes had to be practicable, for the loads were usually grain, malt, fish, meat, hides, butter or construction materials. It wasn't even worthwhile to transport small or short loads for long trips. Certainly, good use was made of water routes, frozen lakes and rivers. These routes did not, however, suffice for all needs.

Most of the loads of goods left Häme Castle along the Ox Road to the west.⁸⁴ (Map 2). The destination of the shipments was Turku Castle, Turku's markets or Turku's harbor as an intermediate stage on the trip to Stockholm.⁸⁵ The peasants who had to go on the transport trip with the Crown's tax goods were a familiar sight on the Ox Road. The trip from Häme Castle to Turku's center was a little over 160 kilometers, which the peasants could do, depending on conditions and the load, in four to six days.⁸⁶ In winter, the peasants made the trip by sleigh and in summer on foot, going alongside the packhorse. They were usually loaded with food goods, such as grain, malt, butter, tallow, dried pike, salted salmon and smoked sheep carcasses, and

often the load also included hides. In the load on the homeward trip could be salt barrels, iron or English broadcloth fabric for delivery to Häme Castle.⁸⁷ The peasants did not always leave willingly on the long and arduous trip to Turku. In the summer of 1550 in the district-court session held in the Parish of Porras on Saint Olof's Day, 15 households were fined 3 marks each because they had not agreed to transport the king's hides and fat from Häme Castle to Turku.

In Turku, the loads were unpacked into Häme Castle's own grain, hide and food granaries (located in Sillensgård). A conflagration raged in the town of Turku in 1546, when a part of the castle's granaries, with their valuable contents, was also destroyed. The construction of new granaries on the former site, however, was begun immediately. The granaries were tended by workmen hired by the castle, who also sold grain and malt on the town's markets. The grain trade carried on in Turku by the castle was at its most active in the 1540s. For example, 1452½ *spann* of malt, 1621 *spann* of oats and 1750½ *spann* of rye were sold in 1545. There were, certainly, many reasons for the later slackening of the market. In the following decade, such a considerable grain reserve was no longer accumulated at the castle because the greatest part of the tax consignments was now delivered straight from the districts to Stockholm. On the other hand, it's possible that there was not sufficient grain for sale as before, the upkeep of the garrison consuming more grain.

The loading of the ships in Turku's harbor was the task of hired workmen, and private shippers were, in part, responsible for the transport of the goods. During 1548, the usual consignments of goods were delivered to Stockholm from Häme Castle: 38 barrels of peas and beans, 566 *lispund* of dried fry, 16 barrels of butter, 6 barrels of salmon, 720 *lispund* of stockfish, 6 barrels of tallow, 2 barrels of cooking grease and 63 boards. The peas, beans, dried fry, tallow, grease and candles were used in the upkeep of the royal castle of Stockholm. The salmon, stockfish and butter were, on the other hand, valuable trade goods on the international markets. A few years earlier, malt and oats had been sent from the castle to the castles of Gripsholm, Svartsjö and Uppsala. The deliveries of provisions from the castle to Stockholm decreased noticeably at the end of the 1540s, when the districts began to take care of their own transport. After this, mainly hides left the castle for Stockholm: an average of 371 skins was delivered to Stockholm annually, of which the greatest part was cowhides and sheepskins. In the 1560s, the central warehouses of Söderköping and Norrköping equaled Stockholm as destinations of goods sent from Häme. Hemp, as well as fine linen and frieze fabrics, which came to

Sweden from the whole Häme castle fief, formed its own category among the deliveries. Beginning in the early 1560s, in particular, there were consignments almost annually to Stockholm in which the hemp more often than not ended up in the shipyard as raw material for rope, and the fabrics for sails.

Although Vanaja's Häme belongs to Kokemäenjoki's waterway system, the people of Häme have not been able, at least since the Viking Period, to use the river Kokemäenjoki with its sea routes in more far-reaching trade. The river's system of rapids hampers the transport of large quantities of goods, and consequently the highways were more significant trade routes than the waterways from Häme toward Satakunta. In the traffic of the interior, to be sure, the waterways of Kokemäenjoki have had an important place.

Arterial highways like the Ox Road were not available in the sixteenth century from Häme to the coast of the Gulf of Finland. No useable waterways at all led there, for the divide of Salpausselkä cut the water routes between Häme and Uusimaa. Nevertheless connections to the south were continuous. Barrels of butter were transported, for example, to Tammisaari, where they were loaded onto the ships of Stockholm.⁸⁸ The royal estate at Porvoo received a Russian envoy as guest in 1545. The estate's own food supply was not sufficient for the maintenance of a visiting dignitary and his entourage. Supply trains were sent from Häme Castle to Porvoo, including, in addition to everyday food goods, wheat, butter, geese, hares and game birds as well.⁸⁹

Dealings with the Gulf of Finland's coast picked up noticeably in the mid-sixteenth century. This was in consequence of Gustavus Vasa's requirement to establish a town at Santahamina, or Helsinki, in competition with Tallinn.⁹⁰ The bailiff of Häme's Ylinen District, Mats Larsson, lived at the end of the 1540s on the Vesunta Estate owned by the Crown, which was located in Hattula on the shore of Vanaja about 10 kilometers northwest of the castle. In 1548, Mats Larsson received royal orders to build two large granaries at Santahamina. Twenty-two builders were hired for fifteen weeks for the job. The building materials for the granaries were bought on site: 306 hewn logs, 30 floor tiles, 25 barks for bins, 3000 birch-bark shingles and 60 logs for construction of a wharf. The matter was thus one of granaries built on the seacoast, whose purpose was to entice Dutch, Russian and local merchants. During the following years, the peasants of Ylinen District transported fish, butter, tallow, smoked mutton and different hides to Santahamina by horse.⁹¹

Helsinki was founded in 1550. Communications between Häme and the new town were close, for the new administrative center was being helped to get started by deliveries of goods.⁹² The freight traffic was at its liveliest in the mid-1550s during the Russian War, and the deliveries continued to be significant up to the early 1560s. In 1557, the Royal Estate of Helsinki received 766 *spann* of rye from Häme. The average annual crop of field rye at Häme Castle, where much rye was cultivated in the mid-sixteenth century was, for example, 867 *spann*. Such large quantities of rye were not always transported from Häme to Helsinki. In 1558, the deliveries had decreased to 495 *spann*. Also, the deliveries of malt were exceptionally large during the years 1557 and 1558. In the latter of these, 2227 *spann* of malt were brought from Häme to the royal estate at Helsinki. Revealing of the magnitude of the quantity is the fact that an average of 1280 *spann* of malt were brought annually from the province to Häme Castle, whose beer production was totally dependent on tax malt. In addition to rye and malt, Helsinki's royal estate got beef and oats from Häme. In other words, rye for making bread, malt for brewing beer, meat to feed the people and oats for horse feed were needed above all in Helsinki. At the beginning of the year 1557, Sweden and Russia had signed a peace agreement. The border question was, however, still open, and consequently the crisis had not completely eased off. Men and horses, therefore, continued to be maintained on standby even at the Royal Estate of Helsinki. Foodstuffs, also, were delivered from the castle to Helsinki. In the loads, in addition, were specialty items such as bedclothes, weapons, lead, gunpowder and, particularly, animal hides.

Often there was salt in the peasants' pack on their return from Helsinki to Häme Castle. It was most probably a matter of salt imported by way of Tallinn. Along with grain, salt was the most important import item delivered from Tallinn to Finland through the agency of the trade of Helsinki's merchants and the region's peasants.⁹³ In 1561, Sweden conquered Tallinn and dealings between Häme and Tallinn picked up. During the first years of the 1560s, horses, cows, butter and bread, in particular, were delivered to Rääveli Castle. The commandant of Häme Castle, Erik Spåra, sent to his colleague at Rääveli, by way of Helsinki, 5 new, orange bedcovers, 5 new, white under-blankets, 23 mason's hoes and 10 iron shovels.

Although the trip to Viipuri along the Upper Viipuri Road was long, frequent consignments of goods were delivered from the castle to Viipuri's

market for sale or to Viipuri Castle for the maintenance of its garrison. Viipuri's city wall was reinforced in the mid-1540s, and money and meat went from Häme Castle to the wall's construction site for the workmen's wages and provisioning.⁹⁴

Most of the freight deliveries to Stockholm by way of Turku were from the District of Hattula. After the founding of Helsinki, there was also frequent travel to the coast of the Gulf of Finland. On the other hand, loads of freight seldom went east.⁹⁵ Traffic from the District of Sääksmäki was also directed toward Turku and Stockholm. Beginning with the 1550s, there was more and more transport from there, too, to Helsinki, and in the following decade by way of Helsinki to Rääveli. The peasants of the District of Sääksmäki were ordered to Viipuri more than the peasants of the District of Hattula.⁹⁶ Ylinen District's deliveries of goods were directed evenly to the different parts of the country. Unlike the others, their contacts with Viipuri and Olavinlinna were also brisk. In the deliveries leaving Häme Castle and the castle fief for the different parts of the country is clearly seen, on the one hand, the influence of natural conditions and, on the other hand, the policy pursued by the Crown. Turku was the traditional partner in collaboration, and dealings were naturally directed westward along the Ox Road. Economic dealings with Kokemäenjoki Valley were not mentioned at all. With the founding of Helsinki, communications to the south picked up despite the difficulties of passage. At that time it was largely a matter of carrying out the Crown's demands. Consignments from Häme were also needed all the way to Viipuri, for the upkeep of the large fortification and garrison required resources. These shipments fell as a matter of course to the responsibility of the eastern parts of the area.

Relations to the east, south and west were dealt with in Häme largely along the highways, winter roads and frozen waterways. One must remember, however, that for Häme's internal traffic the lakes were important traffic routes. Particularly in eastern Häme, travel and freight delivery were managed well along the expanses of lakes. It is characteristic that barley and hops were not paid for the maintenance of roads and bridges in eastern Häme's Hollola region as elsewhere in the province. Instead, landing-boat oats and landing-boat hops were paid. Landing boat means a travel boat or parish boat maintained with the aid of taxes. In the District of Sääksmäki's "water parishes," also, travel boats were maintained, which waited in certain places to provide transportation. The peasants of the District of Sääksmäki are also known to have used water routes in their delivery of construction materials to the castle: in 1560 a lawsuit

was carried on in Sääksmäki's fall court over the fact that the peasants of Akaa had floated their logs on the way to the castle straight into the fish traps of the vicar and his neighbors.⁹⁷

3.3 The People of the Castle

The castle bailiff was the Crown's representative in his castle and his fief, the castle's scribe being responsible for the keeping of accounts. As aides, they had lower officials, the bailiff's attendants and the squires, who, in practice, attended to the progress of different functions and the guarding of the castle. The craftsmen of the different trades, the staff of the landed estates, the hired men and the maids were responsible for the everyday household management. Altogether, about one hundred officials, soldiers, craftsmen and servants lived and worked regularly at the castle. In addition, other people were also at the castle temporarily. In the spring, herdsmen were hired for the pasture season, and cattle tenders to help milk the cows and make butter. Workmen could be hired for the hay meadow and harvest to help the peasants performing *corvée*, and additional work force was needed in the fall slaughter. Officials traveling on crown business and their servants had a right to stay overnight at the castle. During most months, soldiers could be quartered at the castle camp, and the visiting craftsmen worked at the castle from a few days to weeks. All in all, a couple hundred persons were often at the castle, and the number of people could rise temporarily to nearly three hundred. In the following, we will examine the castle's population, that is to say the permanent staff and the people there temporarily, with aid of a three-sector model.

Engaged in the service of the primary sector, or the castle's agriculture, were the staff of the landed estates (the master, the mistress, the men and the maids), herdsmen, ox drovers, shepherds, swineherds, warders, farmhands, maids and fishermen. In addition, cottagers (*husman*) worked at the castle each year. The cottagers, in the main, did agricultural work, and consequently they are listed among the staff of the primary sector. The numbers of the primary sector's staff for the years 1540-1569 are presented in Appendix 1.⁹⁸

In the secondary sector belonged, first of all, the food-management staff, that is to say the major-domo, the cellarer, the cook, the brewer, the maltmaker, the baker, the slaughterer, the miller and the hired maids and men of these professionals. The manufacture of implements necessary in the day-to-day life of the

castle was taken care of by a large group of craftsmen of different trades, to which also belonged experts in specialized trades: the blacksmith, the gunsmith, the tailor, the shoemaker, the leather-dresser, the saddler, the fuller, the potter, the joiner, the turner, the cooper, the mason, the brickmaker, the glazier, the carpenter, the limeburner and the charcoal maker. Many of them also had a hired man assisting and learning the trade. In the castle's storehouse, or *fatabur*, the spinsters, weavers and servant girls worked under the charge of a mistress. Other workers of this sector were the dormitory matron and the coachman, as well as the hired men and maids. The permanent staff engaged in the service of the secondary sector is presented in Appendix 2. The visiting artisans working temporarily at the castle, who were hired for the execution of a particular contract, are also listed in this group.

The bailiff, the scribe, the underbailiff, the chaplain, the stable master, the assistant scribe, the copyist, the caretaker, the bailiff's attendants, the squires, the underbailiff's valet, the porter and the executioner (*skarprettare* or *rettare*) were permanently employed in the tertiary sector. The eel bailiff, who served as foreman for several years at the eelery at Vääksy, is also listed in this group. There were considerably more people in the tertiary sector at the castle, however, than the number of regular staff implies. The Crown's infantry, or foot soldiers (*landsknektar*),⁹⁹ cavaliers (*sventienare*) belonging to the mounted troops and fusiliers (*skyttare*), as well as these groups' aides and stable boys (*smådrenger* och *stalldrenger*), could be quartered at the castle. Although the military troops and their aides could stay at the castle a long time, they are not listed in the castle's permanent complement. The wages of the Crown's soldiers were paid in a different way than the wages of the castle's permanent garrison. The bailiffs

arriving on business matters from the bailiwicks of the province, the guests and the prisoners also belonged to the tertiary sector. The people of the tertiary sector are presented in Appendix 3.

One can distinguish three different categories, according to the nature of the people's stay, in the number of people at the castle. First of all was the permanent staff engaged for year-round employment. The number of staff engaged varied seasonally, as labor was taken on for seasonal tasks. The third category is the people to whom belong those staying temporarily at the castle in addition to the permanent staff and the seasonal workers. The annual payrolls, or the money-and-fabric payrolls, give the best picture of the staff engaged permanently in the service of the different sectors and their functions. Usually, the servants who received an annual salary also got a shoe wage of six pairs per year. In addition to them, there were many in the group receiving a shoe wage for whom one to three pairs of shoes was the only wage. Those receiving only a shoe wage were generally herdsmen, dairymaids, hands of the landed estates, artisans' helpers, storehouse maids and hired men and maids without more precise professional titles. They can be presumed to be labor engaged for seasonal work. Notice is taken in Appendices 1 and 2 of the information in the shoe payrolls from those years for which they are available. Omission of attention to the seasonal workers would give a false picture of the size of the primary sector. For example, there were only eight workers from the primary sector on the annual payroll for 1559. Forty-seven of them are referred to in the shoe payroll for the same year. Such a large difference is, however, exceptional. Generally, 10-20 more workers from the primary sector are found in the shoe payroll than in the annual payroll.

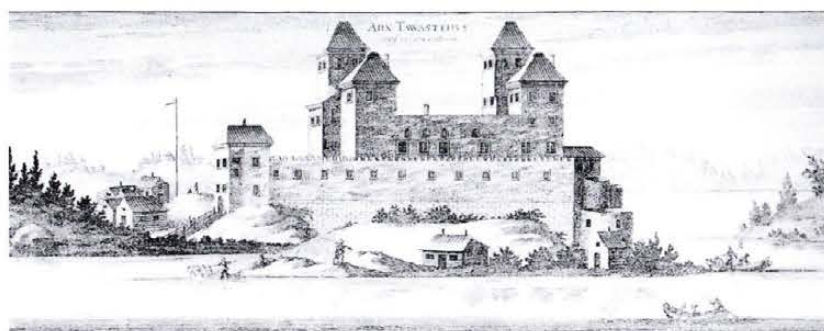


Figure 6. Some one hundred persons lived and worked at Häme Castle on a daily basis. On occasion, as many as three hundred persons had to be accommodated. Accommodations at the main castle were not sufficient for all of them, and consequently, there also had to be living space outside the main castle. One passed into the interior of the main castle, with its curtain wall, by way of a gate tower in the corner. The copperplate of Häme Castle was engraved in 1710. It is based on Eric Dahlberg's drawing of the 1680s. *Suecia Antiqua et Hodierna*.

The number of staff engaged in the service of the primary, secondary and tertiary sectors and each sector's percentage share of the total number of people engaged are gathered from Appendices 1-3 into Appendix 4. The tertiary sector's share of the staff engaged at the castle was over one half, or about 50-80 persons, up to the end of the 1540s. The diminution of the group's share to 20-40% in the following decades was surely a consequence of the reforms made in the administration of the districts. With the move of the district bailiffs and their aides to the bailiwicks and their taking care of the tax collection from there, such a large administrative staff was no longer needed at the castle.¹⁰⁰ About 20-40 persons were engaged annually in the service of the primary, as well as the secondary sector. The growth of the groups' relative share at the beginning of the 1550s is explained by the diminution of the tertiary sector. Beginning in 1559 on the other hand, one can see real growth in both groups. In 1559, construction of the east gun tower was begun, which brought work opportunities to the artisans of the secondary sector. In this year, 65 artisans from different trades were engaged at the castle, and 47 persons worked in agricultural service. Construction activity continued in the following decade, and the number of artisans remained high. More workers were also needed in the primary sector because, with the landed estate of Hätilä founded in 1557, the castle's agriculture was expanded considerably.

The payrolls, however, give an inadequate picture of the castle's total staffing. The most complete picture of it is given by the castle's dining rosters, in which are also entered, in addition to the salaried staff, the soldiers and their attendants quartered in the castle camp, the guests, the visiting bailiffs of the districts and bailiwicks, the prisoners, the visiting artisans and the freelancers. Not counting the two last-mentioned groups, all the others belonged in the tertiary sector. The total number of people eating at the castle is collected in Appendix 5

as a weekly average from those years for which the information is available. There does not appear to be a great difference at the end of the 1540s yet in the total number of salaried staff (Appendix 4) and the people in the castle in all (Appendix 5). Beginning in the following decade, on the other hand, there were continually nearly 100 more persons, or over that, at the castle than there were salaried. The difference is explained by the military detachments that, more and more often, were quartered at the castle camp or stopped at the castle for a while on their way to Viipuri, Turku or other center.

In researching the size and staff of the sectors, however, one must be content, in the main, with the payroll. The inventories of diners, in which the staff of the different sectors is distinguishable, are available only for the years 1559, 1560 and 1562. In the following schedule is a comparison of how the information in the payroll and in the list of diners of the number of people in the different sectors differed from each other in the years in question.

The data in the payrolls and lists of diners on the numbers belonging to the primary and secondary sectors are very similar. For the tertiary sector, depending solely on the payrolls would diminish that sector's share in the economy of the castle. Of the castle's regularly employed staff, about one fourth or one fifth was in the service of the tertiary sector. Over half the people at the castle each day, however, belonged to the tertiary sector. This sector's proportion was increased primarily by the soldiers quartered at the castle and their aides. It is interesting to note that there was more staff engaged in the service of the primary and secondary sectors than people from these sectors who took their meals at the castle. This could support the hypothesis that some of those who worked at the castle lived in a nearby castle village and did not participate in meals at the castle. A nearly equal number of staff was in the service of the primary and secondary sectors. One must remember, however, that the proportion

Schedule 2. The number of people in the service of the primary, secondary and tertiary sectors at Häme Castle in the years 1559, 1560 and 1562, and each sector's percentage share of the total population, according to the payrolls and the lists of diners. The data from the lists of diners are weekly averages.¹⁰¹

	1559		1560		1562	
	payroll	diners	payroll	diners	payroll	diners
Prim.	47 (34%)	41 (19%)	52 (37%)	43 (17%)	56 (41%)	43 (15%)
Sec.	66 (47%)	41 (19%)	52 (37%)	42 (16%)	50 (37%)	46 (16%)
Tert.	26 (19%)	129 (62%)	35 (26%)	165 (67%)	30 (22%)	193 (69%)
TOT.	139 (100%)	211 (100%)	139 (100%)	250 (100%)	136 (100%)	282 (100%)

of the primary sector's staff in the castle's total workforce does not give a true picture of this sector's significance to the economy. The agricultural work functions were, in the main, taken care of through the corvée of the peasants.

Who Were the Crown's Workers and Lodgers at the Castle?

The question of a possible population increase in Häme in the Late Middle Ages and sixteenth century is interesting. Exact numbers, unfortunately, are not obtainable. The population can, however, be presumed to have grown in Häme, also, as throughout the kingdom.¹⁰² Generally, part of the so-called excess population remained in the countryside, working in service jobs and as craftsmen, while a part moved to the towns.¹⁰³ There were no work opportunities offered by towns in Häme, but the Crown needed workers for the upkeep of the economy of the castle. The Crown was, in fact, the area's largest employer.

We know the names of all Häme Castle's workers, both the men's and the women's. On the other hand, there is little information on their backgrounds. From what parish, village or house did they come to work at the castle, and return to when the work ended? At least part of the highest officials and soldiers were from the mother country. Some of the squires' names point to Swedish descent and farther afield: Anders Livländer, Lasse Westgöte, Jöns Juthe, William Tyske and Hans Tyske. Other of the castle's squires whose names revealed their home areas were Erich Alenningh and Henrik Nyländer. In greatest part, the squires for the security of the castle were definitely Finns, as was the case also at Olavinlinna.¹⁰⁴ Among the bailiff's attendants and squires was also the so-called gentry. The gentry had not established their position in the noble class, but, on the other hand, they did not belong to the common peasantry. They tended their farms with hired labor or by renting them out. They themselves served for wages as crown cavalymen, bailiffs, underbailiffs, scribes and in other functions.¹⁰⁵

Martti Larsson and Knut Larsson are good examples of Häme gentry. At the beginning of the 1550s, Knut Larsson had come into possession of the entire Kuurila village of Kalvola. The Unonen village of Kalvola experienced a similar fate, for all the houses of the village belonged to Martti Larsson during the years 1552-1574. Both Martti and Knut served the Crown at Häme Castle in the mid-sixteenth century. Knut was a bailiff's attendant in 1542 already, and ten years later he still provided the Crown cavalry service by furnishing two horses.

Martti served as a squire at least during the years 1552-1563. The people of the castle had given Martti the epithet Lutterus, apparently because of his first name and character.¹⁰⁶ In 1566, Martti Larsson rose to the position of underbailiff, and in 1569 he was given the duties of the assistant scribe. In 1564, Knut Larsson's name was written *Knut Larsson till Kurila* in the manner of a nobleman. Knut was bailiff of the District of Hattula during the years 1566-1567, and in 1568 he was granted exemption from taxes in Kuurila. Because it was not necessary to pay silver tax from Kuurila in 1571, one can consider Knut Larsson as belonging to the nobility at that time.¹⁰⁷

Skilled masons, master builders, gunsmiths and glaziers were, in the sixteenth century, well paid and much-sought-after professionals, for whom the Crown was a significant employer. They moved around the kingdom from one crown castle or estate to another. Master builder Henrik von Cöllen, who was responsible for the construction of Häme Castle's east rondel, worked in the service of Gustavus Vasa for years, overseeing fortification work in both Sweden and Finland.¹⁰⁸ The corresponding master mason on the west rondel's construction site was the mason Staffan Matsson, who worked also at Turku Castle. The master glazier Clemet also arrived from Turku Castle in 1543.¹⁰⁹

Presumably, the everyday craftsmen and servants were from the immediate surroundings of Häme Castle. It was stated earlier that craftsmen visited the castle for the performance of contract jobs. In part, they were Häme peasants who sought additional income in craft work. As Seppo Suvanto has shown in regard to Satakunta and the District of Sääksmäki, craftsmen lived in the countryside who, along with farming, practiced craftsmen's trades, possibly inherited from their fathers. Suvanto discovered information on 32 craftsmen altogether from the District of Sääksmäki for his period of research: blacksmiths, leather-dressers, shoemakers, tailors, masons, turners and coopers. One can thus presume there having been skilled labor even in Häme. The aim during Gustavus Vasa's time was the concentration of craftsmanship in the towns, but it was not until the beginning of the seventeenth century that the mercantilistic trade policy began to effectively eliminate rural craftsmanship.¹¹⁰

It is interesting to consider still further who were the Crown's servants engaged in Häme. According to Toivo Nygård, the servants in the seventeenth century belonged to the landless population of the countryside. During the seventeenth century, the servants began to be clearly separated into their own social group in the provinces. A special Servants and Vagrancy Law that came into being during the end

of the sixteenth century and the seventeenth century indicates the growth of the servants' significance in society.¹¹¹ According to Jutikkala, the numbers of landless began to rise in Häme in the last quarter of the sixteenth century. The population increased during the sixteenth century, but there was not yet a problem in placing the excess population. Settlement continued clear up to the 1570s, farms were divided and new villages were established in the back country. There was so little field area that not much labor was needed. A small part of the population moved to former wilderness to farm. In eastern Häme were extended families in which several working-age men lived, with their families, in the same household. Servants were frequent in sixteenth-century Häme households only in families that occasionally lacked their own labor force. The servants were often sons and daughters of neighboring households. According to the population register preserved from 1556 for Tammela, in only every sixth house was there a hired man. Half the houses were households to which belonged, in addition to the master, neither men nor growing boys. All in all, out of the population of Tammela, 88% were members of farm families.¹¹²

In mid-sixteenth century Häme, there was not a large landless group from which the Crown could hire its servants. At this stage, one cannot yet speak of the wageworkers of the countryside as their own group. In largest part, it was a matter of freeholders and their descendants, who occasionally practiced craft work or other service work in the service of the Crown. Independent persons, or freelancers, also worked at the castle. In mid-April, 1562, it was time for spring-cleaning at the castle after the long winter. Thirteen independents were hired for the work for board, for whom the period of spring-cleaning lasted three days.¹¹³

The casual workers, or independents, belonged to the peasant folk of the countryside like the tax peasants. Socially, however, they were below the freeholders. They corresponded to the cotters of later times.¹¹⁴ They lived on the outskirts of the villages in their small cottages, around which were tiny herb gardens. They earned their living with temporary work for the peasant households and the castle. They were not, like the servants, bound to their masters, and consequently, they were a very mobile work force. They were a reserve work force for the castle that was summoned to work, as needed, for board. There could be up to 30 of them at work at one time. More usual were groups of 5-10 persons. During winter, no independents were seen at the castle, but with the coming of spring, there was work available to them from mid-April to the beginning of November. The periods of work were frequent, one

lasting about a week. The first work of spring might be just the spring-cleaning or spreading manure on the fields. In late summer, the independents helped harvest the crops of beans, peas, cabbage and hops. Also, the gathering of moss each spring and fall was included in their functions.

The Crown certainly tried to engage the unemployed landless and poor, who were fit for work, in its service, for, already in the sixteenth century, it was the attempt of the authorities to get each citizen into useful work in the name of the general good. Force was used when necessary. A labor force was guaranteed by compulsory service, and a possible threat to social peace by the poor was gotten under control. The principle was that, if work was available, it must be accepted. Grain and clothing fabric were distributed from Häme Castle to the blind, the poor and the beggars.¹¹⁵ Other information on the attitude toward the poorest is not available. The general European feature of the age was that poor relief was secularized. The positive attitude of the Middle Ages toward poverty was changing: now work was required of everyone. At the turn of the modern age, the numbers of the asocial population increased with the differences in wealth becoming more precipitous and the numbers of poor growing. The physically handicapped beggars were still socially acceptable. The relief of beggars who were fit for work, on the other hand, was forbidden. The Church approved this change in attitude, and poor relief was transferred in Europe to the secular power. Both the laity and the Reformers were of one mind that idleness was evil and compulsory labor promoted the general good.¹¹⁶

The records of fines of the Häme parishes illuminate a little the way in which the Crown engaged the servants. In the records of fines contained in the district bailiffs' accounts for the years 1548-1571 are five references to insubordination toward the Crown's staff upon their coming to engage people in the service of the castle.¹¹⁷ For example, in the district-court sessions of the Parish of Porräs in June, 1557, Simo Matti's son from Oinasjärvi was sentenced to fines of 6 marks for 2 bruises. He had struck a servant of the king, who had been sent to fetch workers to the castle. Although fines for resisting the Crown's staff in the process of fetching workers were not issued often, one can, on the basis of their scant information, draw some conclusions. At least, there were departures from the castle into the countryside to seek servants. Although it was most generally the peasants of Pälkäne who refused to leave for the castle, labor was also called for from the eastern and western parts of the province (Asikkala and Porräs, which included the church parishes of Somero and Tammela).

It is not known whether the Crown observed the same customs in engaging labor as the peasants. In the agricultural community, the days of engagement were previously-agreed-upon dates that suited the annual work rhythm. In the Häme-Savo area, the peasants and servants assembled, as a general rule, at the beginning of September at the employment markets on the church green or in the marketplace. According to the provisions of the law of the land, it was necessary to reach an agreement at the time of engagement that fixed the length of the employment period and the salary. The agreement was made orally.¹¹⁸ A significant difference in the Crown's and the peasants' keeping of servants was the payment of wages. At the castle, the wage was paid semiannually on May Day and Christmas. The peasants had a custom of paying part of the wage in advance in connection with the engagement and the rest at the conclusion of the agreed-upon period of employment. The Crown is not known to have used engagement money, nor is there knowledge of advance agreement on the period of service.

Violent behavior in the hiring situation reveals that going to work at the castle was not always in accordance with the individual's own wishes. According to some Swedish researchers, the Crown's workforce was obtained by conscription and the workers were watched like prisoners. Did a member of the sixteenth-century peasant community have freedom of movement? Did he get to decide himself about going into the service of the Crown, or did the community decide who was sent to the castle to work.¹¹⁹ The infrequent occurrence of quarrels reveals also, however, that there was not a question of constantly recurring disturbances between the peasantry and those come to fetch workers for the castle. Certainly the Crown, like the peasants also, demanded absolute obedience from its workers. There is no knowledge of desertion from the Crown's service at Häme Castle. Nygård has clarified the reasons for servants' desertion in the seventeenth century. The reason could be excessively stern treatment or poor food. More generally, however, the reasons were quarrels arising out of wages or out of the enlistment.¹²⁰

The menial's period of service at the castle was short. The length of the workers' terms at Häme Castle is examined most closely for the years 1540-1552, for which there is available an unbroken series of payrolls.¹²¹ The higher and better position a person was in, the longer his term of office was. The terms of the bailiff's attendants and the squires were, on average, three years. For the years 1540-1552, the castle bailiff was Isak Nilsson, but his term as bailiff was exceptionally long. The castle scribes thrived

well in their jobs, for during the years 1539-1552, only two scribes worked at the castle, both of whose terms lasted seven years. Generally, for scribes in the service of the Crown, a four-year term of office was long. There was some degree of transfer within Häme Castle from one function to another. The practice was not, however, general. The squires were the most significant group from which there was transfer as needed to other functions at the castle.¹²² The servants worked at the castle, on average, only one year. In this connection, one must remember that the servant's work could be of a temporary nature. For the scribes, on the other hand, it was the main job. The professional craftsmen and officials generally stayed 2-4 years. Exceptions were the baker Kerttu and the blacksmith Acustinus, both of whom worked at the castle at least 30 years.¹²³

The women of the countryside in the sixteenth century worked, in the main, in the home among their family and relatives. We know very little of their life. A surprising number of women, however, worked at the castle, and consequently their history opens the door a little on the women's world. The Birgittas, Kaarinas, Marias, Annas and Kerttus were one-sixth of the castle's regular workers. When account is taken only of the professional people and servants, their share rises to one-third. This is as great as the proportion of women among the workers of Viipuri Castle.¹²⁴ About 16 women lived and worked regularly at Häme castle. Seasonally, when labor was taken on as cattle herders, for fall harvest or for slaughter, the number of women could rise to as many as 30 persons. In other than seasonal work, there was a very clear division between men's and women's tasks. The women dulcified the malt, baked the bread and cleaned the rooms. They were also responsible for the storehouse tower and tended the cows and pigs. The castle's significance as an employer was especially great for the women, for it, along with the crown manors, offered them the only work opportunity in Häme outside the household. Perhaps some of the women ventured into the Crown's service in Stockholm. Gustavus Vasa had a shortage of labor, and during several years in the mid-sixteenth century dozens of workers left Häme for Sweden. In 1540, for example, 179 servants traveled to Stockholm under the escort of the castle's squires.¹²⁵

In addition to the staff, there were continually some ten visitors at the castle: men of power from the surrounding area, their spouses, vicars, visiting craftsmen and messengers and officials travelling on business of the Crown.¹²⁶ The castle appears to have been a meeting place for the nobility of the surrounding area. Especially with Häme's leading

nobleman, Erik Spåra, becoming commandant of the castle in 1562, the social life of the castle became more active. It was a practice of the time that the wife of the castle's commandant did not move permanently to the castle. Erik Spåra's wife, Gertrud, continued to consider her family estate, Hauho's Hyvikkälä, her residential manor. From there, she often left with a small retinue for a visit at the castle, staying there from a few days to several weeks. At that time, Lady Kaarina of Harviala, Wife Malin or Wife Anna could be Gertrud's guest for a period of several days.¹²⁷

Erik Spåra knew the influential men of the kingdom well, and during his term as bailiff, Lords Klaus Fleming and Gustaf Fincke, among others, visited at the castle. News of the visit of a man of power stirred the noblemen and clergymen of the province into action. When Lord Gösta Fleming visited the castle at the end of May in 1562, the clergymen of the surrounding area also arrived to hear the latest news: Master Henrik of Vanaja, Master Henrik of Janakkala, Master Anders of Hattula, Master Per of Hauho and Master Ericus of Akaa.¹²⁸ The clergymen of Häme often visited the castle otherwise as well. Of them, Master Anders of Hattula, Master Bertill, Master Pável, Master Mats and Master Lars were there during the week before Christmas in 1558. Master Ericus Laurentii was an often-seen guest at the castle. The clergymen could also act as executors in the preparation of the castle's annual inventory. Master Anders of Hattula was requested for the task in the fall of 1559, and during the period of October-December, he went to the castle six times in the supervision of the work.¹²⁹

Imprisonment as a punishment is a relatively late custom, not having spread until the seventeenth century. There could be prisoners in the medieval castles, who were generally prisoners on remand awaiting trial or persons held incommunicado for political reasons. Sometimes also, those sentenced to fines received, in the absence of funds, short periods of confinement at the castle on bread and water, that is to say a starvation diet.¹³⁰ All these groups appear at sixteenth-century Häme Castle. The five foreign prisoners brought to the castle in mid-February, 1560, were apparently viewed as dangerous to the security of the kingdom, and a couple of weeks after them, eight more arrived. Why Hans of Lübeck, Kurt Meyer, Albrect the Dane, Bernt of Celle, Meinert the Frisian, Henrik of Hamburg and the others had to stay in the castle's dungeon clear to the end of September is not known. In any case, remote Häme Castle was regarded as a good place of safekeeping for them. As the primary punishment for the peasantry, fines were usually imposed. Imprisonment for those without means could even stretch out for several

months. In 1560, two peasants went to the dungeon for six weeks for their seditious speech. One wife had to sit in custody nine weeks for betraying her husband. In mid-May, 1562, Helga Juho's daughter was imprisoned, and she was still in the castle in mid-September, when Kaarina Heikki's daughter and Maria Klementti's daughter joined her company. There is no knowledge of executions carried out at the castle, but there was an executioner on the payroll, and a hill on the north side of the castle is still called Pyövelinmäki (Hangman's Hill).

4. The Agriculture of Häme Castle

4.1. The Landed Estates as Agricultural Centers

The landed estates, located in immediate proximity to the main castle, were the centers of Häme Castle's agricultural production. They were large estates for their time, on which were assembled considerable economic resources for an agricultural practice fulfilling the requirements of the Crown.¹³¹ The medieval landed estates of Ojoinen and Saarinen no longer sufficed, in the mid-sixteenth century, for the castle's needs. The first step in increasing production was the annexation to the castle's cultivated land in the fall of 1554 of Myllyvainio (The Mill Field) located near the castle's mill, Kuninkaan mylly (The King's Mill). The increase afforded by Myllyvainio was, however, small, for the field was seeded only every other year with 6-9½ *spann* of rye, the overall seeding being at that time about 90 *spann* per year.

The castle needed greater field area. The best lands in the nearby surroundings had been cleared for fields already in the Middle Ages, and consequently, the only means of increasing the field area was the annexation of the lands of the villages of the surrounding area to the castle's landed estates.¹³² First, the lands of the peasants of Kauriala were appropriated by annexing them to the landed estate of Saarinen. Kauriala's village of four households was still independent in Häme's oldest land registers for the years 1539 and 1543, when it contained an even two hooks. As compensation for the lost farms, the peasants were allotted new farms from Renko's Kuittila and Uusikylä.¹³³ The castle's rye was sown

in the fields of Kauriala for the first time in the fall of 1556. A year later, the villages of Hätilä and Pintiälä on the east side of Vanaja Waterway were annexed to the castle as the landed estate of Hätilä.

Hätilä was one of the largest villages close to the castle. In 1552, there were 10 households in the village. Pintiälä was a smaller village of five households in the area of modern Hämeenlinna's railroad station. With the loss of the village, the name of Pintiälä fell into disuse and has gradually been forgotten entirely. The life of the inhabitants of Hätilä and Pintiälä changed irrevocably in the year 1557. The villagers were unilaterally notified that they must leave their houses and fields and move to a new place of residence allotted to them by the Crown. The farmlands, meadows and nearby forests of the villages were needed from here on in the financial management of the castle. To be sure, the Crown assigned new places of residence to the people of Hätilä and Pintiälä and paid compensation. Leaving home was, nevertheless, hard, and the centuries-old village communities dispersed in turmoil. Tuomas Olli's son, a farmer in Hätilä, got a new farm from Hattula's Mierola. In 1561, the bailiff of Häme Castle paid him twenty marks and six *pund* (about thirty-three hectoliters) of rye as compensation for four strips of field that had been expropriated from him in the founding of the landed estate of Hätilä.¹³⁴ After implementation of the area annexations in the 1550s, Häme Castle was truly a large estate.

The work duties of the landed estates were taken care of with the aid of salaried staff and the corvée of the peasants. On each estate were permanently salaried a master, a matron and two to three maids and men. In summer, the seasonal workers increased the number of people.¹³⁵ The master of each landed estate (*ladugårdskarl*) and the matron (*ladugårdshustru/ladugårdskona*) were a married couple. The master functioned as foreman. The master and men also undoubtedly participated in the care of the horses on the stud farm located on the estate. The matron, together with the maids, was responsible for feeding the cows, milking and processing the milk. Also, the number of staff on the landed estates was modest compared to other estates. For example, on the estate of Kokemäki, whose administration had long since been transferred to Pori, there were still about 15-20 salaried staff in the years 1596-1597.¹³⁶

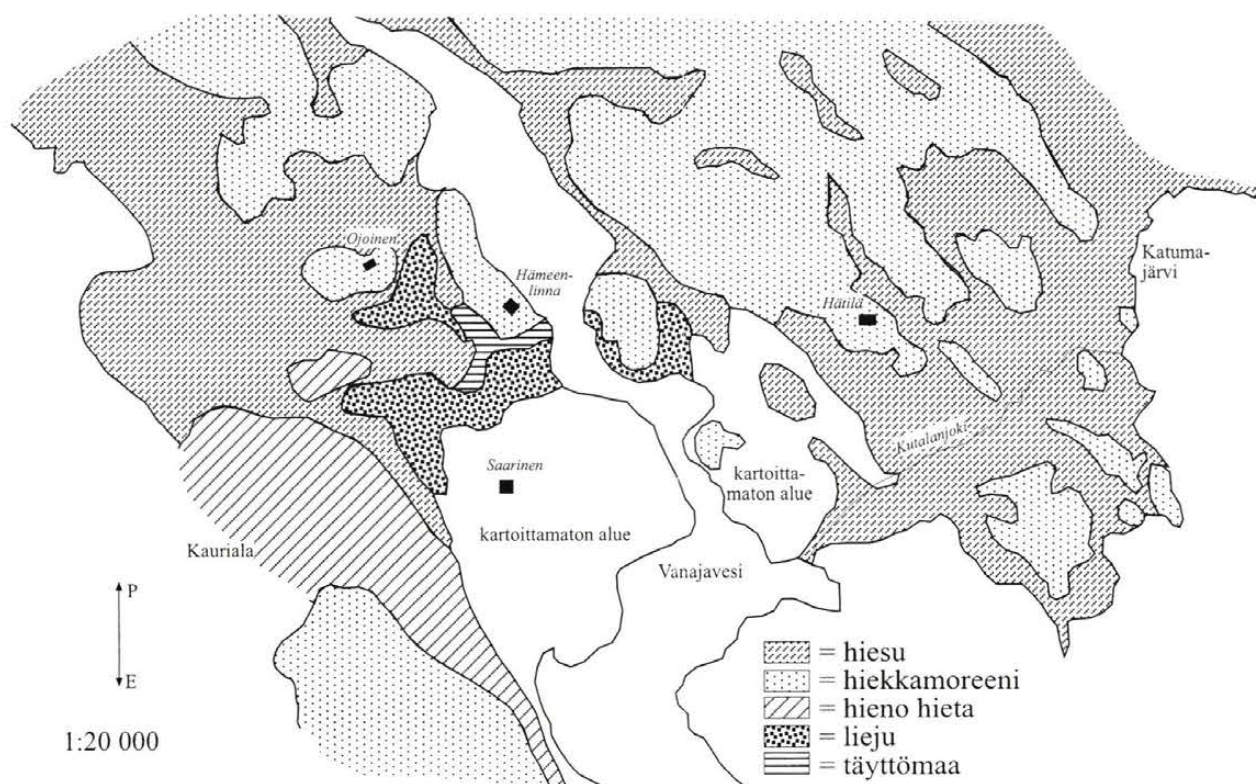
The greatest part of the milk was churned for butter, the production of which required great skill. Giving the work to unskilled hands could have become expensive. The workdays of the milkmaids were surely hard, for there could be some thirty cows altogether on the landed estate to be milked daily. Possibly, even the hired men on the landed estates

participated in the milking. There are medieval church paintings preserved in Sweden that reveal men also still milking at that time. Gradually, both the milking and the processing of the milk became entirely woman's work, which from the eighteenth century on was considered almost unworthy of men.¹³⁷

The change in compensation and designation of the master and matron of the landed estates in the mid-1550s apparently reflects the changes that the considerable expansion of the castle's agriculture brought with it. The women were losing their position as an equal work partner alongside the master. Previously, both the master and matron received an annual wage of four marks, cloth money and four to six pairs of shoes.¹³⁸ At about the middle of the decade, the compensation and position of the master and matron changed. The matron was no longer called matron of a landed estate, but her designation was milkmaid (*mjölkedejä*)¹³⁹ and her wage was pronouncedly lower than that of the master, who was still called master of the landed estate.

The Peasants' Contribution on the Landed Estates

The peasants made a significant contribution to the agriculture of Häme Castle with their corvée. The castle had at its disposal the corvée of the entire castle fief. In practice, only the nearby parishes went for corvée, the other parishes making good their responsibility with money and natural goods. In Diagram 1 appears all the corvée used at Häme Castle during the years 1540-1569 and agricultural corvée's proportion of that. Diagram 1 shows clearly that the castle's corvée was used, in the main, either in agriculture or construction. The peasants generally participated in the construction work at such time as a large construction project was under way at the castle.¹⁴⁰ There is no information on more exact usage of construction corvée for the year 1546. Possibly, the work was connected with the foundation work for the gate tower built in the following year. The east gun tower, or rondel, was built in 1559, and the construction continued brisk for the whole following decade.¹⁴¹ During those years in which no great construction goals were under way, nearly all the corvée was used in agriculture. It is interesting that Diagram 1 follows the progress of the amount of seeding on the castle's fields. During the years 1540-1545, an average of 4392½ days of work per year were used in the castle's agriculture. At the beginning of the following decade, the amount of seeding on the



Map 3. With the aid of the soil map published in 1989, one can search Häme Castle's surroundings for areas suitable for field farming. A comparison of Maps 1 and 3 shows, too, that the fields of the landed estates were on silt and sand soils very suitable for field farming. Source: Hämeenlinna Soil Map, base map 213109 1:20,000, National Survey Board. Helsinki 1989. Drawing, Jari Järvinen. (Translation: hiesu = silt, hiekkamoreeni = sand moraine, hieno hieta = fine sand, lieju = gyttja (sludge), täyttömaa = fill, kartoittamaton alue = uncharted area)

castle's fields dropped, and also the amount of corvée used annually decreased to 2902. After the founding of the landed estate of Hattula, over 5000 days of corvée were done annually in the castle's agriculture. From that, one can infer that field-cultivation work was performed at Häme Castle chiefly as corvée. Olle Ferm has shown that also on the large Swedish estates the amount of corvée correlates positively with the amount of seeding.¹⁴²

The nearby parishes appear to have had a specific division of functions in tending to the corvée of the landed estates. To the landed estate of Saarinen located on the south side of the castle came the peasants of its nearby parishes, Janakkala and Renko. The work on the landed estate of Ojoinen, which was on the northwest side of the castle, belonged chiefly to Lehijärvi, Hattula and Kalvola. The people of Mäskälä on the east shore of Vanaja worked on both landed estates. The fall threshing was tended to in turn by the parishes of the District of Ylinen. In 1546 was the turn of the people of Lammi. They chose 20 men from among them, who threshed

in drying barns of the castle for over a month. The parishes of the District of Hattula transported the grain to Kuninkaan mylly (the King's Mill) to have it ground. The trip to the mill proceeded best by boat via the river Kotalanjoki and the lake Katumajärvi (Map 2).¹⁴³

Voionmaa has submitted that on the fields of the landed estates of Turku Castle each parish would have had its place. If a parish failed to come sow at the designated place, this part of the field remained fallow.¹⁴⁴ During the years 1542-1545, the landed estates of Saarinen and Ojoinen had their "own parishes," who, in the main, took care of their field cultivation. The tasks of the parishes on the landed estates, however, varied. Renko did not plow the fields of Saarinen every spring, nor did Janakkala harvest the rye crop from Saarinen's fields every fall. Rather, the tasks appear to have been rotated. This guaranteed the peasants that the same work would not suffer every year on their own fields because of the Crown's work.

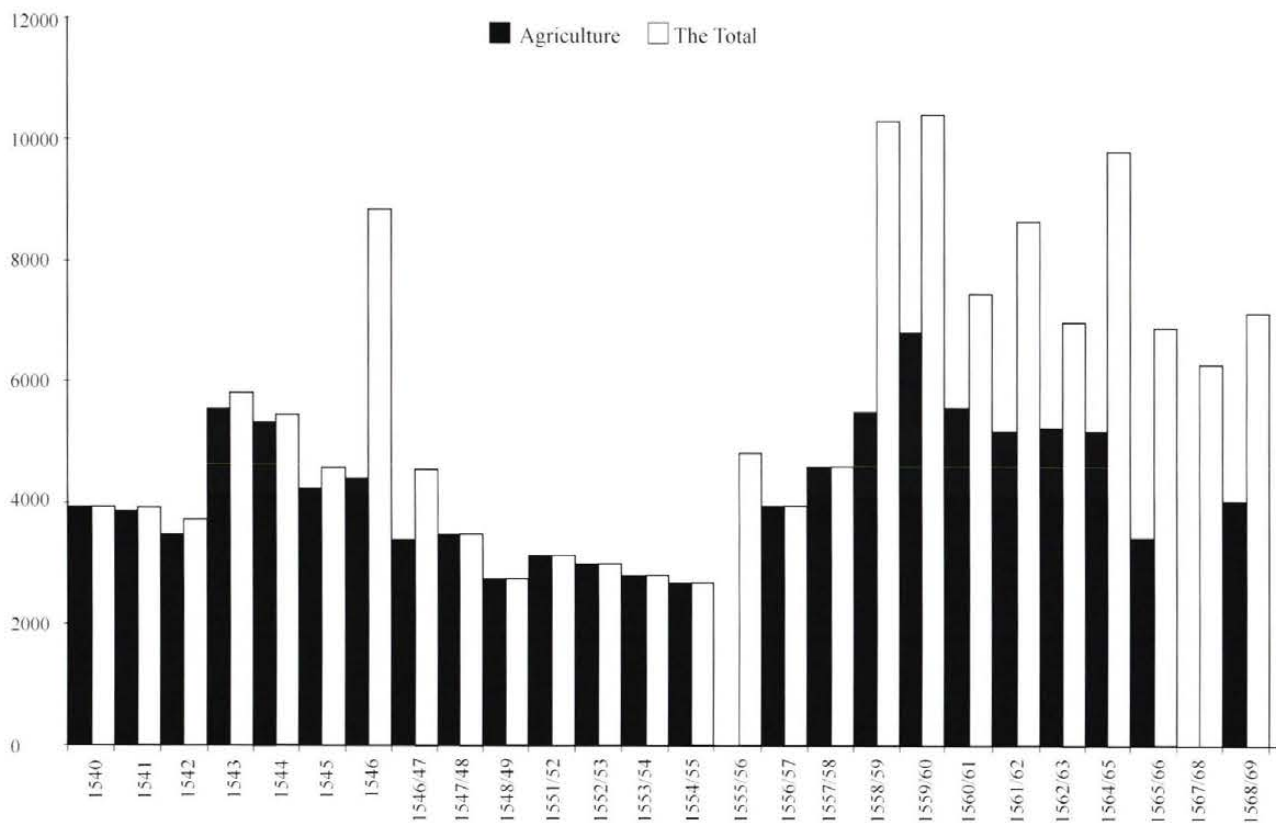


Diagram 1. The corvée used at Häme Castle during the years 1540-1569 and the proportion of agriculture's corvée out of the total corvée.

4.2. The Fields on the Best Lands

The agriculture on Häme Castle's landed estates was chiefly field cultivation, which was supplemented by slash-and-burn agriculture. The conditions for field cultivation were good. Central Häme, especially the shores of Vanaja Waterway, was already in the Middle Ages, along with Varsinais-Suomi and Ala-Satakunta, Finland's most important field-cultivation area. In addition to the potential water supply and weather, the soil most affected where dwellings were built and fields cleared. Of the Finnish researchers, Elias Orrman has clarified the influence of the soil on the spreading of the population. He has reflected upon why the Swedish colony in Uusimaa never spread inland. The Swedes remained in regions where the light, sandy loam was easy to work with their implements. In Varsinais-Suomi and Satakunta, likewise, the light, sandy loam was taken first for cultivation. In Häme, also, the earliest fields were cleared on the lake shores where the soil was sandy loam. The different type of clay soil of the entire waterway area of Kokemäki divided the areas of settlement. The historical Ylä-Satakunta (Karku, Tyrvää, Pirkkala, Hämeenkyrö, Kangasala, Lempäälä and Vesilahti) was connected, both culturally and linguistically, to the Häme settlement.

In these regions, the typical sandy loam of the Häme lake shores was farmed,¹⁴⁵ the likes of which the field cultivation of Häme Castle was also.

The oldest map on which the fields of Häme Castle are represented is the drawing prepared primarily for the measurement of Hämeenlinna's city plat by the surveyor Laurentius L. Schroderus (Map 1).¹⁴⁶ The so-called Schroderus Map is interesting to compare to the soil map completed for the area of the town of Hämeenlinna in 1989 (Map 3). The castle's fields are right in those areas that are marked silty soil, or sandy loam, on the soil map. The landed estate of Ojoinen was located northwest of the castle on hummocky moraine, and the fields were on silty soil around the manor. The same "arable cape" that stretches to the middle of the castle's swamp meadow on the Schroderus Map also appears clearly on the soil map as a silt area. A soil map has not been made of the area of the landed estate of Saarinen, that is to say of modern Hämeenlinna's town center. The lands of the village of Kauriala, annexed to the landed estate of Saarinen in 1556, were fine sand, or field land very suitable for farming. From the soil map, one can infer, based on the quality of the soil, that the fields of Hätilä were on the northeast side of the river Kutalanjoki. Kutalanjoki was at one time

the border between the greater-community holdings of Hätilä and Mäskälä. Hätilä's fields were also on the shore of Vanaja Waterway opposite the castle, as indicated on the Schroderus Map.

The oldest inventory of the fields of Häme Castle is from fiscal year 1557/1558. Preparation of a field inventory was needed at that time, for, because of the recently carried out annexation of area, the castle's field area had grown considerably. In conformity with the custom of the time, the fields of the landed estates were designated according to the points of the compass. In addition to the names of the fields, an entry was also made in the inventory of how many *spann* of grain it was possible to sow in each field.

The landed estate of Ojoinen

East field	60 <i>spann</i>
North field	67 <i>spann</i>
In all	127 <i>spann</i>

The landed estate of Saarinen

East field	29 <i>spann</i>
North field	31½ <i>spann</i>
Kauriala's west field	22 <i>spann</i>
Kauriala's east field	28 <i>spann</i>
In all	110.5 <i>spann</i>

The landed estate of Hätilä

West field	64 <i>spann</i>
East field	79 <i>spann</i>
In all	143 <i>spann</i>
Grand total	380½ <i>spann</i>

*Schedule 3. The fields and seed-grain amounts in spanni that, according to the scribe who prepared the inventory, it was possible to sow in the fields on Häme Castle's landed estates of Ojoinen, Saarinen and Hätilä in fiscal year 1557/1558.*¹⁴⁷

The castle's fields were cultivated in accordance with a two-year rotation plan, and consequently one-half the grain amounts cited in the inventory was sown annually. The field-inventory data fit well with the actual seeding amounts. During fiscal years 1559-1563, the average seeding on the landed estates was as follows: Ojoinen 63½ *spann*, Saarinen 60 *spann* and Hätilä 72 *spann*. In the fall of 1557, 184½ *spann* altogether were sown on the castle's

fields, which was nearly one-half the 380½ *spann* that, according to the field inventory, it was possible to sow on the castle's fields.¹⁴⁸ The fields of Häme Castle were being used effectively.

When the lands of Kauriala were annexed as part of the landed estate of Saarinen, Saarinen's rye seeding increased more than one-third. Previously, about 36 *spann* of rye had been sown at Saarinen annually, and following the annexation, the amount of rye seeding rose to about 57 *spann*. The castle's entire rye seeding grew about 30%. The appropriation to the castle of the lands of the villages of Hätilä and Pintiälä on the east side of the castle as the landed estate of Hätilä had a more noticeable effect on the castle's field cultivation than did Kauriala. Hätilä's fields were seeded for the first time in the fall of 1557, or a year after Kauriala's. The annexations increased the amount of seeding considerably. During fiscal years 1558-1569, the seeding on the castle's fields was, on average, 191 *spann*, whereas at the beginning of the 1550s it had been 84 *spann*. On the basis of the amounts of seeding, the significance of the landed estates for the field cultivation of Häme Castle was nearly equally great. Hätilä's proportion was, on average, 37%, Ojoinen's 33% and Saarinen's 30% of the castle's total seeding.

The Field Area

The size of the castle's field area and the changes in it reflect the significance of field cultivation to the castle's agriculture. Estimation of the area of the fields, however, is difficult, for the castle's accountants were not so interested in the extent of a field as in how much was seeded in the field. In the following, the total area of Häme Castle's fields is estimated with the aid of details and seeding data found in some account books. In the foregoing, the field inventory for the year 1558 has already been dealt with (Schedule 3), in which, in addition to the fields' names, was entered the possible seeding amounts for the different fields. In addition to this, there are data in the castle's accountancy for the 1560s on the castle's field area in terms of *spann* lands (*spannland*). At that time, the Crown's auditors often fixed their attention on the fact that too much corvée was consumed per *spann* land in the castle's seeding and crop harvesting.

Seeding data is the most-used method of estimating field area. The crop to be obtained from the same field could fluctuate considerably by year. On the other hand, one can assume that an equal amount was always seeded to the same field. The seed quantities, however, were not necessarily always the

same. Rye was sown more sparsely than barley or oats. The density of seeding was affected also by the quality of the seed and field land.¹⁴⁹ The problems notwithstanding, the area of Häme Castle's fields has been left to estimation on the basis of seeding. Because rye was cultivated almost exclusively at the castle, one can assume the density of seeding having been very similar from one year to the next.

According to the field inventory for fiscal year 1557/1558, the castle's fields could be sown with 380½ *spann* of grain in all. The field area was thus 380½ *spann* lands if we assume a *spann* land to be the area in which a *spann* of grain is sown. The transformation to *tunna* area and, further, to hectares would be 380½ *spann* lands=253 *tunna* areas=about 126 hectares.¹⁵⁰ In a two-year rotation system, about 63 hectares of field would have been cultivated annually.

In censuring the bailiff of Häme Castle for excessive use of corvée in the field work, the auditor estimated the size of the castle's fields in *spann* lands. These estimates, in fact, fit the amounts of grain sown.

On the basis of the *spann* land data of the field inventory of fiscal year 1557/1558 and that presented in the castle's accounts for the 1560s, one can submit that, after the founding of Hätilä, about 60-70 hectares of field were under cultivation annually at the castle. The total area of the castle's fields was, thus, about 120-140 hectares. For the previous years, it is possible to estimate the area only on the basis of seed quantities. According to these, 91 *tunna* areas, or about 40 hectares, of field were under cultivation annually at the beginning of the 1540s, and a decade later, 56 *tunna* areas, or about 30 hectares.

Häme Castle attained to the group of Finland's largest estates in the amount of seeding after the founding of the landed estate of Hätilä, when an average of 191 *spann* of grain, as well as peas and beans, was sown annually in the castle's fields. The average amount of seeding of Turku Castle's largest landed estate, which received the name Iso-Heikkilä in the seventeenth century, was 148 *spann* of rye and 16½ *spann* of barley during the years 1538-1560. Eastern Finland's most significant manor was Kivennapa, where an average of 150 *spann* of grain was sown annually in the mid-sixteenth century. The

Manor of Kokemäki was Satakunta's center. There the grain seedings were 103½ *spann* in all in 1547, and in 1554 the amount of seeding was 101½ *spann*. Jokipii supposes the seeding area of Kokemäki Manor to have been about 60 ha in all in the mid-1550s.¹⁵² The field area at Häme Castle, that is to say on its three landed estates, cultivated annually after 1557 was of the same order of magnitude as on Turku Castle's largest estate, Iso-Heikkilä, and at Kivennapa, on both of which about 50 hectares were under cultivation at a time.

In a history of Häme, Armas Luukko has estimated the field area in Häme in the mid-sixteenth century. The largest areas of field cultivation were in possession of the Crown, the castle's fields being the most extensive. On the cattle estate of Mustiala, the fields were, all in all, 170 *tunna* areas (85 ha), and on the cattle estate of Sairiala, 70 *tunna* areas (35 ha). The total area of the fields on the Crown's hereditary estate of Vesunta was 66 *tunna* areas (33 ha). Luukko has also proposed an estimate of the field areas of the estates of the nobility. Erik Spåra, who was bailiff of Häme Castle during the years 1562-1565, had 50 *tunna* areas (25 ha) of field in Hauho's Hyvikkälä and Jöns Skytte 40 *tunna* areas (20 ha) in Hauho's Skyttälä.¹⁵³

According to Luukko, the land registers for the years 1586, 1587 and 1589 are the most useful in estimating the fields of the peasants of Häme. For the previous years, hook figures are in use. In Luukko's opinion, however, the hook figure does not directly disclose the household's field area, because the amount in the hook was also affected by the fishing waters at the disposal of the household, as well as the possibilities for slash-and-burn clearing and animal husbandry. The peasants in central Häme on the shore of Vanaja Waterway had the largest farms. In Hattula, there was an average of 7½ *tunna* areas (3.8 ha) of field per household, and at Lehijärvi 7 *tunna* areas (3.5 ha). There were still few large peasant farms in Häme in the sixteenth century. If 20 *tunna* areas (10 ha) is considered the cutoff point for a large farm, there were no large farms in possession of the peasants at the end of the 1580s other than 5 in the District of Sääksmäki and 3 in the District of Hattula.¹⁵⁴

*Schedule 4. The data concerning Häme Castle's fields, put forward by the auditor in his censure, in spann lands, as well as spann lands transformed further into tunna areas and hectares.*¹⁵¹

Fiscal year	In <i>spann</i> lands	In <i>tunna</i> areas	In hectares
1560/1561	187½	125	about 60
1564/1565	211½	141	about 70
1565/1566	195½	130	about 65

4.3. The Agricultural Yield

About 85% of Häme Castle's field seeding during the research period was rye. During the years 1546-1562, no other grain was cultivated at all. At the end of the 1520s already, clearly more rye than barley and oats was sown at the castle. For fiscal year 1529/1530, the rye crop was 530 *spann* and the oat crop 60 *spann*. The barley crop gathered was only 25 *spann*. The barley crop was apparently exceptionally poor, because the following fall a crop of 70 *spann* of barley was obtained. A crop of 672 *spann* of rye was gathered in the fall of 1530.¹⁵⁵ The supremacy of rye on the fields of the surrounding area's peasants was not so pronounced as at the castle. There is no tithe list compiled according to grain crop for Häme from the sixteenth century, and consequently the exact proportion of rye and barley farming is impossible to say. Luukko and Suvanto, however, have estimated the proportions of grains cultivated in Häme in the sixteenth century on the basis of taxes paid by the peasants. According to this, clearly more barley than rye was still being cultivated in the mid-sixteenth century. In 1540, the administrative district of Mäskälä paid the state as tax 55 *spann* of rye, 153 *spann* of barley and 125½ *spann* of oats, or 288½ *spann* in all of spring grains and 55 *spann* of winter rye (19% of the quantity of the spring grains). The proportion of rye, however, grew continually.¹⁵⁶

Also, data on the economy of some of the farms of Häme support the conception that barley was Häme's predominant grain in the mid-sixteenth century. In Hattula, on the tenant farm of Valtee, which belonged to Gustavus Vasa's inherited and private farms, 4 *spann* of barley, 2½ *spann* of rye and 2 *spann* of oats were cultivated in the year 1559.¹⁵⁷ At the beginning of the modern age, three tenant farms belonged to the episcopal table of Turku, Vanaja's Kantola, Paikkala and Käikälä. The fields of these farms were seeded in 1549 with 37½ *spann* of barley and 17½ *spann* of rye in all. In the same year, the tenants of Kantola and Paikkala paid the episcopal table as statutory payment 25 *spann* of barley and 12 *spann* of rye. No rye at all was paid from Käikälä. Of the payment remitted by Kuusisto in Varsinais-Suomi to the episcopal manor during the corresponding period, the share of rye was 173 *spann*. Of barley and malt, 27 *spann* in all were collected.¹⁵⁸

The waning of barley's dominant position and the rise of rye as the most important grain was the most notable change of the end of the Middle Ages and the beginning of the sixteenth century in the economy of Sweden's and Finland's best agricultural

regions. In the mid-sixteenth century, the peasants of Uppland already paid one-half their grain tithes in rye, and during the same period rye was also the most cultivated grain in Varsinais-Suomi and Ala-Satakunta. Rye continued its triumphal march toward the north and east. At the beginning of the seventeenth century, it even overtook barley in Häme and by mid-century in Ylä-Satakunta. Rye cultivation at Häme Castle certainly furthered rye's becoming prevalent in Häme. In their work on the castle's fields, the peasants noticed that rye, in well-worked soil, yielded a better crop than barley. Winter rye also was not as susceptible to frost as barley.¹⁵⁹

A particularly large cultivation of rye was a typical feature of the crown farms in the mid-sixteenth century in Sweden as well as Finland. Such was also the case in regions where even the peasants cultivated a great deal of rye. In Uppland, East Götaland and Västmanland, cultivation of rye was 20-30% greater on the royal estates than on the peasants' farms. The most notable rye cultivation was in Uppland, where it was, on average, 70% of the cultivation of the royal estates. The proportion of rye for the peasants of Uppland was 30-40% of the seeding. From the 1570s on, the proportion of rye on the royal estates decreased, while at the same time it increased on the farms of the surrounding countryside.¹⁶⁰ In Finland, also, rye was the main crop on the Crown's farms in the mid-sixteenth century. On Turku Castle's landed estate of Iso-Heikkilä, an average of 148 *spann* of rye and 16½ *spann* of barley was grown annually during the years 1538-1560. At Häme Castle, the peak of rye cultivation was the 1550s. During the years 1539-1569, an average of 85% of the grain sown at the castle was rye, and during the years 1546-1563, the proportion of rye actually increased to 93%.¹⁶¹

On many Finnish crown estates, rye had displaced barley in the 1560s as the main crop. On the cattle estate of Sairiala, 78% of the 1557 seeding was barley. In the following decade, barley was not cultivated at all. On the Royal Estate of Helsinki, as also in the Parish of Helsinki, rye, barley and oats were on a very equal footing at the beginning of the 1550s. At the end of the decade, the manor's seeding was already 80% rye. Rye's triumphal march was comparable also on the Royal Estate of Espoo, the Royal Estate of Korsholma, the Royal Estate of Kokemäki, the Royal Estate of Ulvila and the cattle estate of Koivisto.¹⁶² It was previously mentioned how the rye yield increased on the crown estates during the course of the 1550s. It is possible that the increased yields and the dominance of rye cultivation are connected, for concentration on the cultivation of rye made effective fallowing possible.

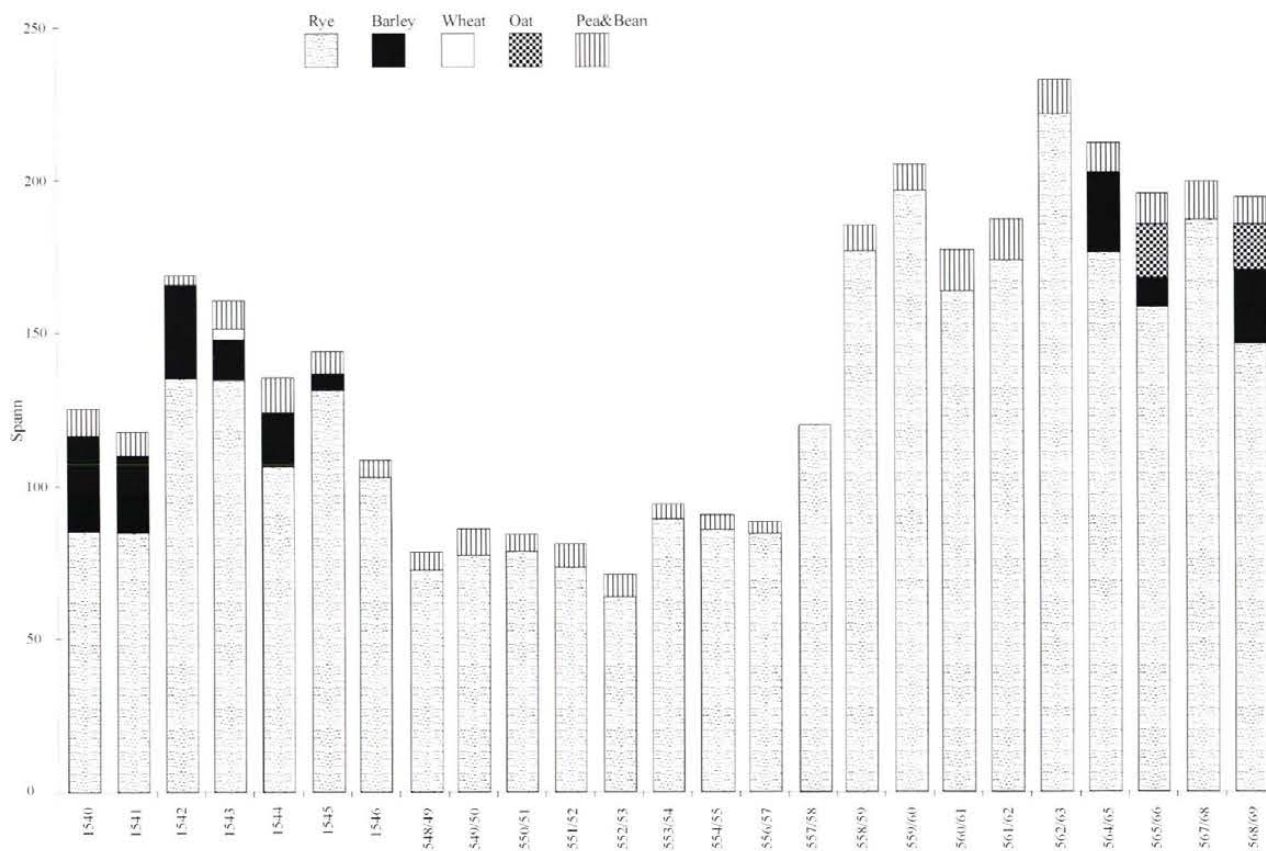


Diagram 2. The amounts of seeding (*Häme spann*) on the fields of Häme Castle during the years 1540-1569 and the proportion of the different grains out of the total seeding. The figures are based on Appendix 6.

Vesunta, located in the vicinity of Häme Castle, had been incorporated in 1531 with Gustavus Vasa's inherited and private farms. The agriculture practiced at Vesunta in the mid-sixteenth century points to the fact that an intensive cultivation of rye was, above all, a typical feature of the central estates. The estate bailiff of Vesunta was the tenant bailiff for the inherited and private farms located in Varsinais-Suomi and Häme during the years 1546-1551. During these years, an average of 28 *spann* of rye, 20 *spann* of barley and 8 *spann* of oats was sown at Vesunta. Vesunta lost its central-estate status in 1552, and during the course of the 1550s, barley became the estate's main crop: during the years 1552-1560, an annual average of 30 *spann* of barley, 19½ *spann* of rye and 15 *spann* of oats was cultivated at Vesunta.¹⁶³

Rye was an upper-class grain in the sixteenth century. On the Royal Estate of Luulaja, established in 1557 in northern Sweden, rye, which had been cultivated before in the Luulaja region only by the heads of constabulary, the clergy and the birkarlars, was also cultivated to some extent. The officials who came to take care of the manor and their assistants preferred to eat rye bread rather than barley bread. A large consumption of rye indicated a high standard of living. The cultivation on Stockholm Castle's

landed estate was 90% rye, the people of the castle consuming enormous quantities of rye bread.¹⁶⁴ The state of affairs was the same at Häme Castle. Nearly all the castle's rye was baked into bread, which was the main nourishment of the castle's people. The large cultivation of rye at Häme Castle is thus explained in part by the need for bread grain. The peasants of the surrounding area cultivated so little rye that the amount needed at the castle could not be counted on from the resources of the tax revenues.

At Häme Castle, only rye, peas and beans were cultivated every year. The rye was winter rye, which, beginning in the mid-1540s, was also sown in slash-and-burn areas. The proportion of slash-and-burn, or burnbeat, seeding was ordinarily less than 10% of the seeding of field rye. During the research period, barley was cultivated only in fiscal years 1540-1545, 1565, 1566 and 1569, and burnbeat barley was not cultivated at all. Barley, and in particular barley malt, was delivered to the castle in great quantities as tax. These were needed particularly in making beer and bread and as feedgrain. The significance of barley as feed, however, was not as great as in Sweden, where it was the most important feedgrain in the sixteenth century.¹⁶⁵

Oats was the most important feedgrain at Häme Castle, the greatest part of which was consumed

by its own and visitors' mounts. It is interesting to observe that the need for feedgrain had in no way affected the selection of cultivated plants: during the research period, oats was cultivated at the castle during only a few years at the end of the 1560s. The peasants of Häme, on the other hand, cultivated a great deal of oats in the sixteenth century, and their deliveries of tax oats to the castle guaranteed the supply of feedgrain. Although barley had been the most important feedgrain in Sweden since the Middle Ages, the significance of oats had grown during the sixteenth century. On certain crown manors in eastern Sweden, the cultivation of oats had even increased slightly. The peasants, however, grew the greatest part of the feedgrain needed on the royal estates. The need for feedgrain, thus, had not affected the direction of the estates' production. The feeding of the animals could be maintained at a high level with the income from tax revenues.¹⁶⁶

In Sweden, it is even debated whether the state manipulated the production of the peasants with its orders. Ulf Söderberg has proposed, on the basis of his own research and the data of Forssell, that there would have been more barley cultivated on the crown farms specializing in stock raising than on the other farms. According to Myrdal, such a connection is nonexistent. Large livestock production did not signify a specialization in feedgrain. Eva Österberg is familiar with sixteenth-century Värmland. She has not been able to adduce orders from above in this quarter that would have affected the peasants' production. Österberg explains the direction into different kinds of grain as proceeding, above all, from consumption habits.¹⁶⁷ The essential question in relation to Häme is whether the needs of the castle compelled the peasants to concentrate on the cultivation of oats. Was it a matter of a division of labor between the castle and its surrounding area, the castle cultivating the rye needed in its economic management and the peasants taking care of the production of concentrated feed? In Suvanto's opinion, the needs of the castle had compelled the peasants to concentrate on the cultivation of oats.¹⁶⁸ In any case, the peasants of Häme had to cultivate oats for themselves anyway, for they used horses almost exclusively as draft animals. Obviously, the needs of the Crown, however, required a more extensive cultivation of oats than their own need. On the other hand, the peasants' rye cultivation was not so considerable that it would have been able to guarantee the bread-grain needs. There was a concentration on rye at the castle.

The cultivation of wheat was experimented with at the castle during the years 1542-1544. The amount of seeding varied from $\frac{1}{2}$ *spann* to 3 *spann*. Although

the yield was moderately good (4.5, 9.5 and 10.0), the cultivation was not continued. Wheat was seldom needed in the food economy of the castle. Only for special occasions, as in honor of a visit by Duke John, were wheaten cakes and rolls baked. Wheat had not become established in large quantities on the fields of Häme's peasants in the sixteenth century. There are a few scattered references to its cultivation, of which the earliest is from the year 1536.¹⁶⁹

The intensive cultivation of peas and beans at Häme Castle is a very interesting and important feature of the castle's agriculture. Peas and beans were sown in the castle's fields nearly every spring, their proportion being 6% of the total seeding and 4.5% of the crop.¹⁷⁰ There is not more exact data on the extensiveness of the pea cultivation of Häme's peasants until the following century. According to the tithe list prepared in 1619, the cultivation of peas was considerable in the oldest parishes of the District of Sääksmäki. The proportion of peas in the total seeding was, for example, 13.6% in Akaa, 7% in Tyrväntö and 6.9% in Sääksmäki. In the Districts of Hattula and Hollola, the proportion of peas in the total seeding was 3.8% and 2.2% in 1626. Obviously, the peasants of Häme cultivated peas already in the mid-sixteenth century, because they were familiar with beans as well. Forty-eight peasants in Somero are known to have cultivated beans in 1552, and in the fall court sessions in Kulsiala in 1558, some households from Lahdentaka were fined for appropriating bean land. In Sweden, peas were cultivated on royal estates around the country. The proportion of peas in the cultivation, however, remained less than one percent. Myrdal considers the cultivation of peas' becoming general an important step forward in agriculture. The pea plants bound nitrogen with their root systems, which fertilized the soil. There are examples of the cultivation of peas from Finland's other royal estates as well. In 1553, $4\frac{1}{2}$ *spann* of peas were sown on Kokemäki Manor, which was 3% of the total seeding. According to Jokipii, the northern limit of the cultivation of peas proceeded, in the sixteenth and seventeenth centuries, to the north of Pori, Tampere and Lahti to the mouth of the river Kymijoki.¹⁷¹

In addition to grain, peas and beans, a little cabbage, turnips and hops was also grown at the castle. Cabbage and turnips were possibly cultivated at the castle more, but in the accounting there are references to the cultivation of these only during fiscal years 1557/1558 and 1558/1559. In the summer of 1557, four spoonfuls of cabbage seed were sown, and the following summer five spoonfuls, in the cabbage patch next to the castle. The crops were excellent: the first summer, a cabbage crop of 203 barrels was

obtained, and the following summer, 160 barrels of cabbage were harvested. In addition, there is reference to cabbage from the year 1562, when seven independents engaged to work at the castle harvested the castle's cabbage crop in a period of four days.¹⁷² Turnips were sown on two small burnbeaten areas in Kauriala's outer forest. In 1557, five spoonfuls of turnip seed were sown to burnbeat area, from which 127 barrels of turnips were obtained. The following summer, two spoonfuls of seed were sown, and in the fall a crop of forty barrels was harvested. Of the vegetables used by the peasants, turnips were most popular, and there is even data from the sixteenth century on their turnip clearings. On the other hand, there are few references from the sixteenth century to the Häme peasants' cultivation of cabbage. Luukko, however, assumes the cultivation of cabbage to have been general in Häme. For example, the villagers of Lahdentaka were fined in the fall court sessions in Kulsiala in 1558 for the theft of their neighbor's entire load of cabbages.¹⁷³

Large amounts of hops were used in the castle's beer making. Its own hop growing, however, was very brief. The greatest part of the hops was obtained from the peasants of Häme, in whose yards the hops grew in warm and sheltered spots. The cultivation of hops had been ordered as obligatory in the law of the land, and the Crown monitored the carrying out of the order.¹⁷⁴ The regular growing of hops did not begin at the castle until 1557, when the peasant villages of Kauriala, Pintiälä and Hätilä and the hop gardens belonging to them were annexed to the castle. In the beginning, the designations Hätilä, Pintiälä and Kauriala were used for the three hop gardens according to the villages. Because the lands of the village of Pintiälä were annexed to the landed estate of Hätilä and Kauriala's lands to the landed estate of Saarinen, the names of the gardens of Pintiälä and Kauriala gradually disappeared from usage. Later, only Hätilä's two, and Saarinen's one, hop gardens were spoken of. The annual crop of hops at the castle averaged six *lispund*.

The Grain Yields

Yield, that is to say the ratio of the crop to seed, has been used of old in the history of European agriculture to reflect the productivity of farming. One must remember that the yield used does not measure yield per area or the productivity of labor. It measures only the yield of the seed. Despite the shortcomings of this method of calculating yield, it is used a great deal in estimating productivity. This proceeds in largest part from the fact that it is easy to calculate and, in connection with older agriculture, the only

available means of estimating productivity.¹⁷⁵ The auditors of the accounting chamber at Stockholm Castle calculated the yield of the crown farms in the sixteenth century already, and the king imposed high yield requirements by ordinance. If the production objectives were not achieved, the crop deficiency was entered as a credit to the bailiff. The control mechanism certainly increased the bailiff's desire to report the crop data as accurately as possible. The accounts' crop data can be considered as corresponding closely to actuality, and consequently they give a good basis for calculation of the yield.

One must, of course, take into account the effect of bad years on the yields. During the years 1542-1546, poor crops were suffered in Finland, and this certainly explains, in part, the castle's yields during the first half of the 1540s. In the following decade at least the years 1550 and 1553 were years of crop failure.¹⁷⁷ These years, however, do not appear as exceptionally poor crop years at the castle (Diagram 3, fiscal years 1550/1551 and 1553/1554). The crop failures, thus, do not fully explain the yields' rising trend.

On the royal estates of eastern central Sweden, the yields rose from the beginning of the sixteenth century, reaching their peak in the 1550s. On an average, the best yields (6-8) were during the years 1550-1575 on the Royal Estates of Uppland, Västmanland and Södermanland. On certain estates, the yield was even 10 or more in good years. In the latter part of the century, a decrease in the yields began, which did not level out until the beginning of the seventeenth century. For example, on Uppsala Castle's landed estate the mean value of yields in the 1550s and 1560s was 7-8. In about 1600, the yield had dropped to four. At Gripsholm, the yield decreased during the same time period from six to five. The high yields in the mid-century were by no means a matter of course, for the scattered data on yields at the end of the Middle Ages reveal considerably smaller crops. On Uppsala Cathedral's farm in Billingen, three was a normal yield for rye around the year 1500. At the same time, crops were harvested on the estates of Uppland and Södermanland whose yields were 3-4. In all central Europe and Scandinavia, the mean value of rye yields was five in the mid-sixteenth century, and when we come to the eighteenth century, the yield has dropped to scarcely four.¹⁷⁸ The development in Sweden, thus, fits well into the general European picture.

A wavelike change in yields, corresponding to the development on the royal estates of eastern Sweden, is also found at Häme Castle. Here, the yields were at their highest in the early 1550s (av. 11.1), when they were at their peak nationally. For

the entire research period, the productiveness of Häme Castle's fields must be considered very good: the rye yield's mean value was 9.4. The 1556 order to the bailiff for an eightfold rye crop was thus realized. In the new ordinance issued in 1558, the yield was set at 12, which was too high to be achieved in a normal year. The rye yield on Turku Castle's largest landed estate, Iso-Heikkilä, was 3.9 during the years 1541-1557, the crop varying from a yield of 1.3 to a yield of 7.5.¹⁷⁹

At the end of the 1550s, also, good crops were gathered at Häme Castle compared to the production of Finland's other crown estates. The average yield of field rye was 11 at the castle at that time, and on

In the following schedule the yields for field rye are presented from the 1560s on the crown estates in the different parts of Finland.

Espoo's royal estate	5.4
Helsinki's royal estate	4
Häme Castle	9.5
Koivisto's cattle estate	4.7
Porvoo's royal estate	4.7
Sairiala's cattle estate	5.6

*Schedule 5. The mean value of the yields of field rye for the years 1563-1570 on some of the crown estates in Finland.*¹⁸⁰

Helsinki's royal estate it was 6.1. As at Häme Castle, the crops had risen during the 1550s on the other crown estates, also. On the Royal Estate of Helsinki, only a 1.7-fold crop of field rye was gathered in 1552. Two years later, the crop was already 5.5-fold, and at the end of the decade, the mean value of the yield of field rye was 6.1. At the end of the following decade, the yield of field rye decreased on the Royal Estate of Helsinki. On the Royal Estate of Korsholma, a 6-8 yield of field rye was obtained at the end of the 1550s. In the following decade, the yield rose to the high side of 10 in many years.¹⁸¹

In following the progress of the yields of several eastern Swedish royal estates, Myrdal has concluded that the yields of the royal estates were generally one degree better than those of the region's peasants. The estates' preconditions for farming were good. They always had corvée labor at their disposal on their fields, the large livestock herds guaranteed sufficient fertilizer and part of the implements was of iron, and so their use was more effective. Unfortunately, yields are not available for the peasants of Häme from the mid-sixteenth century. Luukko has estimated that, in the mid-sixteenth century, the average yield in Häme would have been six.¹⁸² One must remember that the

peasants cultivated barley, the yield of which was usually lower than that of rye. Also, comparison of the yields of barley and rye at the castle shows that a poorer crop was usually obtained from barley than from rye. In fiscal year 1566, the yields of rye, barley and oats were 7.9, 5.5 and 5.5 at the castle. Three years later, the corresponding yields were 11.2, 5.6 and 4.3. In 1600, the yield of rye obtained at Ojoinen was 12.4 and of barley 4.4, the yield of oats being only 1.8. Also, the other estates' data reveal rye's yield generally being better than that of barley and oats. There were, of course, exceptional years. On the Sairiala cattle estate of Tuulos, only a four-fold crop of oats was obtained, barley's yield being 10.5 and that of rye 8. Two years later, the harvest of oats obtained was hardly the amount of the seed grain.¹⁸³ At the turn of the 1540s and 1550s, the average yield of barley harvested at Vesunta was 4.9 and of rye 5.4. On the Royal Estate of Helsinki, the mean values of yields for the years 1555-1557 were 6.1 for rye, 4.2 for barley and 4.2 for oats. At Korsholma, the yield obtained for rye in 1556 was 7, and for barley 2.8. On the estate of Sairiala during the 1560s, an average 5.6-fold crop of rye was harvested, and a 5.4-fold crop of barley.¹⁸⁴

Ramsay has shown, in the matter of the estate of Espoo, that rye yields a more dependable crop than barley or oats. He has followed the estate's yields for a period of 30 years. In the latter part of the sixteenth century, a 5- to 6-fold crop was generally obtained for rye. The yield for barley varied between 3.5 and 5 and for oats between 2.5 and 4. Both barley and oats, more than rye, had really good and really bad years, when the yield exceeded seven or remained under two.¹⁸⁵ Concentration on the cultivation of rye, thus, explains in part the very good crops at Häme Castle in the mid-sixteenth century.

It was already stated earlier that the castle's fields were on the best spots cleared in the Middle Ages. The soil was thus the best possible. In addition to the good soil, climatic factors furthered the good crop years. On the basis of climate research, it has been possible to infer that the years 1551-1571 were a particularly warm period. The period known as the Little Ice Age started at the beginning of the 1570s, lasting to the middle of the seventeenth century. During the Little Ice Age, Europe's weather was, on average, about 1-2 degrees cooler than now, and above all extremely variable weather conditions were typical of the period.¹⁸⁶

Slash-and-Burn Cultivation

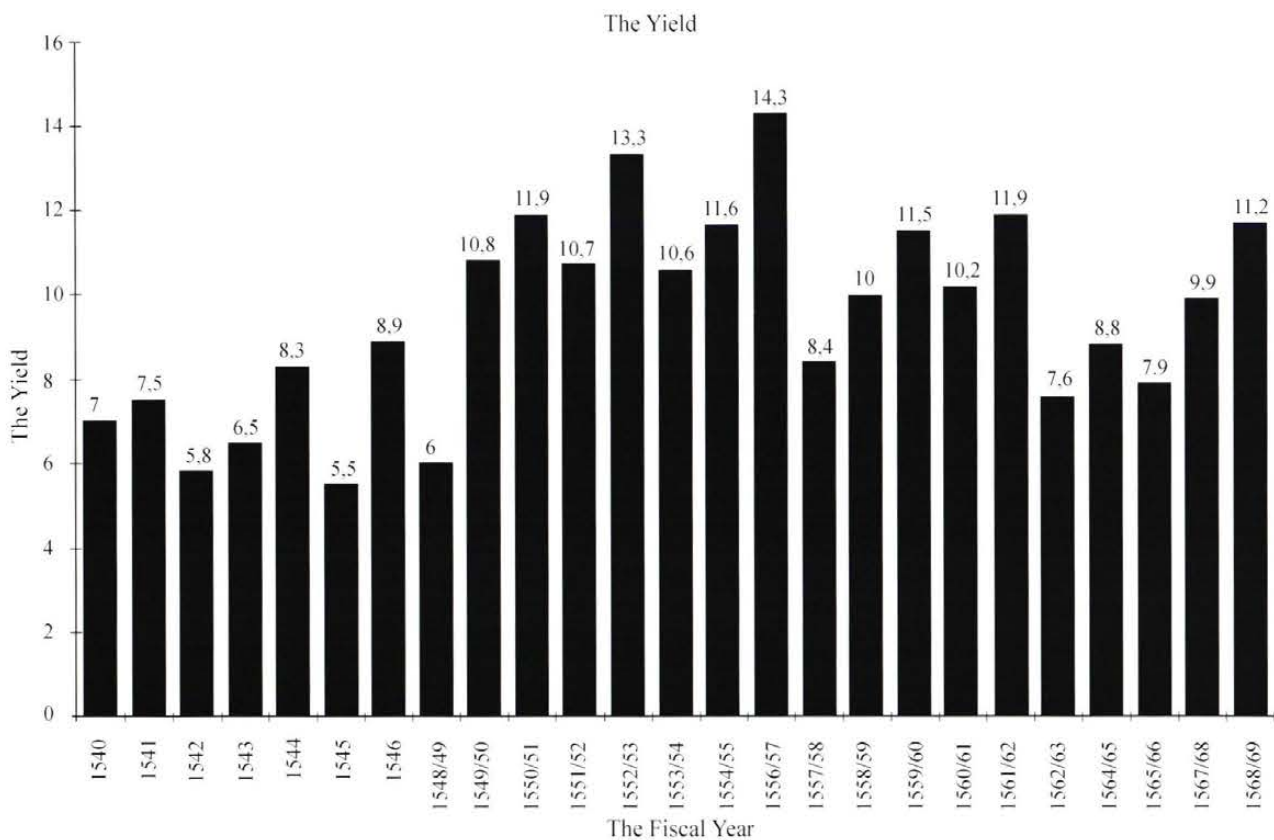
Slash-and-burn cultivation was practiced with many different methods, which had in common the burning of a growing stand of trees on the land to be tilled. The prerequisites and methods for burnbeating varied according to the type of forest. Many generations of burnbeaters had learned from experience to choose the suitable mode of burnbeating for each condition. There was considerable burnbeating on the Swedish royal estates in the 1540s and 1550s. In these years of intensive burnbeating, the burnbeaten area's share of the seeding could be 10-30%. Temporarily, burnbeating even attained considerable proportions. In 1552, 628 *spann* of rye were sown on two burnbeaten areas on the estate of Uppsala, for which 70 men had actually been hired for felling. Burnbeating clearly diminished with the coming of the 1570s, and its new boom period was at the end of the century with the arrival of the burnbeaters of Savo in the forest regions of central Sweden.¹⁸⁷ The eastern Finns brought the *huuhtha* slash-and-burn method to Sweden at the end of the sixteenth century, and a new variety of rye, woodland rye (*tuvråg*). There is no proof of the age of woodland rye. The researchers, however, agree with the statement of Olaus Magnus that woodland rye was already known at the beginning of the sixteenth

century. Notable about woodland rye is the large yields obtained from it. Its use in the field cultivation of Häme Castle, however, cannot account for the large yields of field rye. Woodland rye thrived best in a *huuhtha* slash-and-burn area, and its stem weakened quickly in the field. There are conflicting data on the use of woodland rye in an ordinary burnbeaten area according to Soininen. The dominant variety in the ordinary slash-and-burn area, as also in the field, was a native variety of rye like woodland rye.¹⁸⁸

Burnbeating was also done on all the crown estates in Finland in the mid-sixteenth century. The 1550s, in particular, appear to have been a time of enthusiastic burnbeating. On the western Finnish estates, burnbeating supplemented the field cultivation, and consequently, at its greatest, the burnbeaten area's share was 20% of the seeding. The greatest significance of burnbeating was for the economy of the crown estates of eastern Finland. During the years 1553-1556, 24-50% of the seed-grain on the landed estates of the castle Olavinlinna was sown in burnbeaten areas. The significance of burnbeating waned even in Savo at the end of the century, when the burnbeaten area's share of the seeding was 19%.¹⁸⁹

Even at Häme Castle, burnbeaten areas were cultivated nearly every year from the fall of 1544

Diagram 3. The yields of field rye cultivated at Häme Castle during the years 1540-1569.¹⁷⁶



to the fall of 1561. Winter rye was sown on the castle's burnbeaten areas. Another burnbeat plant was the turnip, which was grown at least during the summers of 1557 and 1558 in two small burnbeaten areas in the backwoods (*utmark*) of Kauriala. At Häme Castle, the amount of seeding on burnbeaten area varied between 1 and 16 *spann*, and the same burnbeat land was seeded at least two years in succession. In the 1540s, the seeding of burnbeat rye was 1-6% of the seeding of field rye. During the years 1552-1554, when the field seeding was less than the previous decade, the seeding of burnbeat rye rose to 17-19 percent of the seeding of field rye. During the last years of burnbeat cultivation, an average of 10 *spann* was sown in burnbeat areas. The share of seeding at that time, however, remained under 10% of the seeding of field rye, field cultivation having recovered considerably after the founding of the landed estate of Hätilä. Häme Castle's slash-and-burn cultivation is interesting to compare to that of the crown farms of eastern central Sweden. On these farms, the burnbeat area was seldom cultivated more than one year in the mid-sixteenth century, although elsewhere in Sweden burnbeat areas were seeded many years in succession in accordance with the medieval custom. In this sense, a simple form of burnbeating was practiced in eastern Sweden, of which one objective was the clearing of new meadows and pasture. The burnbeat turnip was a common cultivated plant in Sweden in the Middle Ages. At the beginning of the modern period, on the other hand, these are mentioned only rarely.¹⁹⁰ The burnbeat rye and turnips cultivated at least two years in succession at Häme Castle reveal a traditional outlook on burnbeating.

Finally, the yields of Häme Castle's burnbeat rye and their relationship to the yields of field rye will be discussed. The claim generally put forward in the history of agriculture is that the burnbeat area yields a better crop than the field.¹⁹¹ During the fiscal years 1545-1562, the mean value of the yields of Häme Castle's burn-beat rye was 9.5, and of field rye 9.7, that is to say that the yields were nearly equal. A nearly equally large crop was obtained annually from the field. The burnbeat area's crop, on the other hand, fluctuated sharply from excellent to poor. A good example is Kuninkaanniitty's burnbeat area. In the first year, in the fall of 1558, a crop was harvested whose yield was 17. In the following fall, the yield from Kuninkaanniitty was only 1.6. The burnbeat area yield was at its best in the year 1550, when it was 21.7. In a comparison of the yields of burnbeat rye and field rye, it is still notable that during only four years was the burnbeat area's yield clearly better than the field's.

On the Royal Estate of Helsinki, a six-fold crop of burnbeat rye was harvested in 1557, the yield of field rye being 8.6. On the Royal Estate of Tavisalmi, the burnbeat yield obtained in 1559 was actually 25. Even in eastern Finland, however, it was not a matter of course that a better crop was always harvested from the burnbeat area than from the field. On the Swedish royal estates also, the yield of burnbeat rye often remained below the yield of field rye.¹⁹² In Sweden, the burnbeat area's proportion of the grain crop on the crown estates was 1/20. In these economies, the significance of burnbeating was above all to procure new meadow and pastureland. Even at Häme Castle, the yield of the burnbeat area was not always better than that of the field. The burnbeat area's proportion of the total rye crop varied between 0.5 and 14 percent.¹⁹³ There were, certainly, still deficiencies in the technique of burnbeating in the mid-sixteenth century: the burnbeat forests were not thoroughly felled, the trees were not given time to dry and they were not burned sufficiently well. It is even possible that the woodland rye, with its yields of good crops, was not yet in use in the castle's burnbeat cultivation. Apparently, at Häme Castle, too, as on the Crown's farms in the mother country, one purpose of burnbeating was the clearing of new pasture and meadow. With the cessation of cultivation, the burnbeat area remained a grass-growing clearing, which could be used until the woods again took over the area. The burnbeat clearing made for Kuninkaanniitty, again, would point to the clearing of new meadow.

4.4. The Crown as a Stockbreeder

The role of the castle and estates as maintainers of the government imposed demands also for stock raising. A significant part of the produce of animal husbandry required on the Crown's farms was obtained as tax revenue, but Gustavus Vasa, in particular, also emphasized the significance of the Crown's own animal husbandry. The Crown had special requirements in its financial management that had to be observed. The administration and army needed horses continually, and the army's food supply in the event of war had to be secured. Thus the agricultural development of the state also included increasing the production of animal husbandry.¹⁹⁴ In the ordinances of 1556 and 1558, along with requirements touching on other areas of financial management, were directives for stock raising. During slaughter, specific amounts of meat, sausage, headcheese, tallow and

lard had to be obtained from the animals. During the year, the cows were to calve once and were to be milked so that 5 *lispund* of butter could be churned per cow. Corresponding production goals were also set for the other livestock. In addition, directives were issued in the 1556 ordinance as to how much fodder could be fed to the different animals during the winter. In the development of the animal husbandry practiced by the state was also included the delivery of breeders to Finland to improve the local livestock populations.¹⁹⁵

At the main castle were located the stables for the staff's and visitors' mounts, as well as at least a part of the castle's oxen. Otherwise, Häme Castle's livestock was taken care of on the landed estates.¹⁹⁶ Also, the mounts to be raised for the needs of the Crown were located at the landed estates. A part of the longhaired, thick-skinned hogs, however, got to run free in the castle area year round, rooting in the garbage and eating the people's food scraps.¹⁹⁷ At the end of the 1550s, Ojoinen had two cowsheds and one stable, and Saarinen three cowsheds. Thus, there would have been few livestock shelters compared to the large number of the castle's livestock. In addition to other livestock, about 100 cows and 70 horses were tended at Ojoinen and Saarinen altogether. In 1560, a new cowshed was built and, in the following year, a new stable and sheepfold.¹⁹⁸ Possibly, there was, at that time, a matter of new construction on the recently established landed estate of Hätilä. Information on all the livestock shelters has not been preserved, and perhaps some of the shelters were even lightly constructed sheds.

In the Middle Ages, the problem of feeding the horses was resolved in part by sending the castle's men into the province with their mounts to take *gestning* at the homes of the quarter-district men. The *gestning trips* had ceased in the 1530s, and the greatest part of the horses stayed over winter at the castle. The feeding of the horses during the winter months, however, could produce ongoing difficulties, whereupon the horses were sent for additional compensation to the homes of local heads of constabulary for feeding. In the winter of 1545, one of the heads of constabulary of the District of Ylinen had 4 of the castle's horses to take care of, two of the heads of constabulary of the District of Sääksmäki had 8 and three of the heads of constabulary of the District of Hattula 12. During the following winter, 28 of the castle's mares were situated in the stables of seven heads of constabulary in different parts of the province.¹⁹⁹

The pasturelands around the castle were the areas that had not been fenced off for fields or meadows. Also, apparently one purpose of the

burnbeating practiced in the mid-sixteenth century was the clearing of new pastureland. Around May Day, the animals were let out to pasture just as soon as even a little new, green nourishment was discovered on the ground. Herders were hired at the landed estates, who were sent with the livestock into the nearby forests for the summer. The herder's work was demanding, for predators were a continual threat. Particularly grim was the year 1544, when wolves killed 4 hogs, 10 kids, 4 nanny goats and 27 sheep. During the same year, a bear slew, as the castle scribe characterized the matter, 1 bull, 2 cows and 2 oxen. The animals ranged on the pastures as late as the weather permitted. Generally, they were rounded up to shelter from the pastures in the latter part of September, around Michaelmas. At the conclusion of spring sowing, the workhorses were also put out to the forest, from which they were rounded up at the end of summer for harvesting crops. In 1572, the peasants of Hattula complained to the Crown that they always had to go looking for the Crown's horses in the forests during their best harvest time. Close to the castle were also two enclosed pastures, where the saddle horses and oxen grazed in the summer.²⁰⁰ Possibly, the pastures were on a cape in Vanaja Waterway located on the north side of the castle, which is still called Hakalanniemi (Paddock Cape).

Numbers of Livestock

Häme Castle, with its three landed estates, was a large livestock farm in mid-sixteenth-century Finland. Livestock were raised at the castle for various aspects of the Crown's needs. In the second quarter of the sixteenth century, the number of livestock had increased noticeably. At the turn of the 1520s and 1530s, the castle's livestock included, on average, 8 oxen, 35 cows, 20 bull calves and heifers, 2 bulls, 62 sheep, 15 nanny goats and 71 hogs. Ten years later, the numbers were quite different: 65 oxen, 134 cows, 58 bull calves and heifers, 4 bulls, 312 sheep, 31 nanny goats and 129 hogs.²⁰¹ The *gestning trips* into the province had ended at the beginning of the 1530s, so that the people of the castle were being maintained in ever-greater numbers at the castle. In addition to the changed administrative arrangements, more people than before were quartered at the castle.

In the schedule 6 are presented the average numbers of livestock at Häme Castle during the years 1540-1571. In addition, the mean numbers of livestock before and after 1558 are calculated. From the calculation appears the kind of impact the founding of the landed estate of Hätilä had on the castle's animal husbandry. The animal units are an international convention for indicating wealth in

livestock, and with their aid one can compare the wealth in livestock of Häme Castle with that of the other crown farms. During the research period, the average annual wealth in livestock of the castle was 461½ animal units. Before the founding of Hätilä, the annual mean value was 435½ animal units, and after its founding, 487½ animal units. The numbers of calves and young stock increased most. The improvement in hay production that accompanied the founding of Hätilä did not appear immediately as an increase in the number of cows. The numbers of calves and young cattle, or the bull calves and heifers under 5 years of age, began, however, to increase, and this was felt a few years later in the numbers of cows also.

One can presume the improved food situation's having also affected butter production, in addition to the number of calves raised. Up to the end of the 1550s, an average of 117 *lispund* (1 *lispund* = about 6.6 kg) per year of butter was churned at Häme Castle. The production varied from 91 *lispund* to 135 *lispund*. After the founding of Hätilä, a clear rise occurred in production. In 1560 already, it was possible to make 255 *lispund* of butter. An average of about 220 *lispund* of butter per year was made during the years 1558-1571.²⁰³ The gradual increase in number of cows on the landed estate of Hätilä naturally had an effect on the increase in butter production. A quantitative increase, however, does not alone explain the growth. An improvement in quality also occurred in butter production: the cows gave more milk than before and the butter production per cow grew.

Before the founding of the landed estate of Hätilä, barely 2 Stockholm *lispund* of butter per cow were churned at Häme Castle during a year. After Hätilä, the amount rose to 3 Stockholm *lispund*.²⁰⁴ The castle's butter production is easy to compare with that of the other sixteenth-century crown farms, for it has generally been the custom in researching an area to calculate the amount of butter per cow churned on the farms. On the royal estates of eastern Finland, the average butter production per cow was

3 Stockholm *lispund*. Säihke submits that on the six crown farms of Varsinais-Suomi a good two Stockholm *lispund* of butter per cow were made, on average, each year during the years 1545-1573.²⁰⁵ Because the production on the farms of Varsinais-Suomi appears to have remained smaller than at Häme Castle beginning in the latter part of the 1550s, there is reason to calculate how much butter was produced on the three landed estates of Turku Castle, Iso-Heikkilä, Ruissalo and Kuusisto, beginning with the year 1558, on the basis of the table data presented by Säihke. There appear to have been large differences among the estates. The average annual production per cow was barely 3 *lispund* at Iso-Heikkilä and Ruissalo, and at Kuusisto, only 1½ *lispund* were churned. Kuusisto's small production is surprising, for there was the same number of cows there as at Ruissalo. Of the landed estates of Turku Castle, Ruissalo had concentrated on animal husbandry.²⁰⁶ Häme Castle's butter production was, thus, on the same order of magnitude as that of Turku Castle's landed estates of Iso-Heikkilä and Ruissalo, as well as of the crown estates of eastern Finland.

Ramsay has presented the butter-production data for the Royal Estate of Espoo for the turn of the 1550s and 1560s. On the basis of these calculations, an annual average of 2½ Stockholm *lispund* of butter per cow was made at Espoo. On the Royal Estate of Kangasala's Liuksiala, the production for one cow was a little over 2 *lispund* in 1558. The most notable stockbreeders in Finland were the Royal Estates of Korsholma and Helsinki, on both of which the annual production per cow was about 3 Stockholm *lispund*. On the crown farms of Sweden, also, the annual mean value was 3 Stockholm *lispund* per cow. The greatest production was on the landed estates of Gripsholm and Stockholm Castle, where the mean value was as much as 3½ *lispund* per year.²⁰⁷ On the castle's landed estates, thus, as much butter per cow was churned, beginning with the latter part of the 1550s, as on Finland's most noteworthy landed estates and as the average on the crown farms in Sweden.

	1540-1571	Before 1558	After 1558
Breeding horses	32	45	7
Work horses	23	22	24
Oxen	90	92	86
Bulls	7	7	8
Cows	103	99	110
Young stock	89	62	137
Calves	38	30	54
Sheep	268	260	280
Hogs	113	112	114

*Schedule 6. The numbers of Häme Castle's livestock as mean values during the years 1540-1571.*²⁰²

Capital in Livestock

The animal units are useful in comparing the livestock capital of the different farms with each other. In addition, it is possible, with their aid, to establish the value of the animals in relation to each other and clarify the significance of the different animals for the castle's animal husbandry.

Breeder horses	14%
Work horses	10%
Foals	1%
Oxen	19%
Bulls	1%
Cows	23%
Young stock	10%
Calves	4%
Sheep	8%
Hogs	10%

*Schedule 7. The animal units' average percentage distribution at Häme Castle during the years 1540-1571.*²⁰⁸

It is interesting to compare how the animal units are distributed at Häme Castle and in the economy of the Häme peasants. A comparison of the Crown's and the peasants' livestock reveals the Crown's own requirements for its stockbreeding. Söderberg has calculated, with the aid of the 1571 silver-tax rolls, how the animal units of the peasants were distributed in Häme: 33% horses, 2% oxen, 53% cows, 6% sheep, 2% nanny goats and 4% hogs.²⁰⁹

Cattle, and especially cows, held the greatest significance in the economy of the Crown as well as that of the peasants. The peasants had even more cows in relation to the other animals than the castle, over half the wealth in livestock. Suvanto emphasizes that the crop failures of the previous years are reflected in the silver tax of 1571. For example, the livestock capital in the western part of the District of Sääksmäki during the collection of the silver tax was smaller than the good years of the 1550s. Matti Vilppu's son of Vilppula (at modern Kylmäkoski) had some ten cows at the turn of the 1550s and 1560s, and consequently, he was the largest stockbreeder in the peasant community. According to the silver tax, there were only 6 cows. Relying merely on the silver tax would, thus, not reveal Matti Vilppu's son's specialization in stockbreeding.²¹⁰

The proportion of the peasants' horses must be compared to the castle's workhorses, for the freeholders had no mounts. The difference is seen in that case between the draft-animal culture of the

castle and that of its surrounding area. The castle had relatively fewer workhorses than did the peasants because oxen were used as draft animals in the fieldwork at the castle. In addition, the oxen were beef cattle. After the cows, the oxen were the castle's most important group of livestock, whose proportion of the animal units was an average of 19% during the years 1540-1571. About 90 oxen were kept annually in the castle's ox barns, the greatest part of which was raised for slaughter. There are data on the proportion of draft oxen from the years 1552 and 1554. Out of the castle's 100 oxen during the first of these were 48 draft oxen, or 24 pairs. During the latter year, there were 96 oxen, of which 36, or 18 pairs, were considered draft oxen. The raising of oxen was a typical feature of the royal estates throughout the kingdom. On some of the Swedish royal estates, oxen were as much as 30% of the animal units. Certain of the estates were state-organized ox-transport centers. In Sweden, also, oxen were used considerably more as draft animals on the royal estates than on the peasants' farms.²¹¹

The great number of oxen on the Crown farms was the most important difference between the stockbreeding of the Crown and that of the peasants, both in Sweden and in Häme. In Häme, the peasants harnessed an ox in front of the plow only in certain western Häme parishes. The ox was not used as a draft animal on the fields of the Häme peasants as much as in Varsinais-Suomi and Ala-Satakunta, which were old draft-ox-culture areas. According to Luukko, the draft-ox culture in Häme had spread to the Districts of Sääksmäki and Hattula during the silver-tax roll's period in effect. The draft-ox parishes were Tammela, Somero, Leijärvi and Saarioinen. In the Districts of Hattula and Sääksmäki, there were fewer horses per household (1.3 and 1.1/household) than in the District of Hauho and Ylinen (1.9/household) and the District of Hollola (1.6/household).²¹² Also, because of a lack of feed, the peasants did not have the means to maintain oxen merely as slaughter animals as was done at the castle.

Few oxen were delivered to the castle from Häme Castle's fief. The delivery data available, however, support Luukko's conception of the spread of the draft-ox culture in Häme. During the years 1540-1571, 21 oxen in all were delivered to the castle from the District of Sääksmäki, 17 oxen from the District of Hattula, 8 oxen from the District of Hauho and 2 oxen from the District of Hollola. There were deliveries from both the Districts of Hauho and Hollola in eastern Häme in only one year, and there were no deliveries at all from the fief's easternmost and northernmost parishes. The ox was better suited to the level fields of western Häme than to the

wilderness and burnbeat forests of eastern Häme.²¹³ Surely, the draft-ox cultures of Varsinais-Suomi and Häme Castle also contributed to the use of oxen as draft animals in western Häme.

According to Luukko, the twenty-five-year war promoted the spread of the ox culture in Häme beginning with the last quarter of the sixteenth century because the horses taken to war were replaced in agriculture with oxen. At the same time, Häme was also changing to an agricultural province in which the wilderness and slash-and-burn culture had to give way. In the latter part of the century, the proportion of ox parishes had grown in the Districts of Sääksmäki and Hattula, and, in eastern Häme's parishes of Hauho and Tuulos, there were three times as many oxen as in the year 1571. In this kind of situation, one would expect that at Häme Castle, too, there would have been more oxen than previously and that there would have been correspondingly fewer workhorses than at mid-century. In the fall of 1571, nearly half the castle's oxen, however, were slaughtered (48%), and the number of oxen, after this, never again rose to its former figure. It was wartime, when the oxen were to the Crown, above all, beef cattle.²¹⁴

Annually, an average of 7-8 bulls was kept at the castle. These were breeding stock, which the peasants of the surrounding area also possibly borrowed. The rare peasant found it worthwhile to keep his own bull, consuming the small feed stocks. In the peasant community of Varsinais-Suomi, at least, it was customary that the wealthiest households fed a bull, which the others borrowed for payment. Three to five households might form a ring, in which a bull traveled around, while being raised, from one household to the other.²¹⁵

A few more hogs and sheep were raised at the castle than among the peasantry because there were resources at the castle to feed slaughter stock. On the other hand, there were no nanny goats at all.

The peasants kept some nanny goats, from whose milk they made cheese. Although Häme Castle had its own weaving mill, in which textiles were made for both its own needs and those of the kingdom, the castle's wool production was not at a high level. During the years 1540 - 1553 an average of only 1 *nål* (about 425 g.) of wool was sheared per sheep at Häme Castle. The lack of shearing data beginning at the end of the 1550s may even reveal a certain indifference. On the royal estates of Sweden, the average production was 2 *nål* per sheep.²¹⁶ No significant effort was made for the improvement of production. Although King Gustavus' agricultural program also included stockbreeding, no breeder animals were delivered to the castle other than 4 English rams in the early part of the 1550s. The rams were sent from Turku Castle, where the sheep economy was well developed. In 1545, there were 40 Finnish, 160 Swedish and 225 English sheep at Turku Castle.²¹⁷

The combined wealth in livestock of the crown estates in Häme was 900-1000 animal units in the 1560s, which was 2.5% of the total livestock wealth of Häme.²¹⁸ Half the Crown's livestock capital was at the castle, where there were a little less than 500 animal units annually. On the three landed estates of Turku Castle, Iso-Heikkilä, Ruissalo and Kuusisto, there were 584 animal units altogether in 1553.²¹⁹ Unfortunately, Sähke has not presented data on the animal units for Turku from later years: after the founding of Hätilä, Häme Castle's livestock capital, also, exceeded 500 in some years. The Royal Estate of Korsholma was established by Gustavus Vasa's charter of Nov. 30, 1555, with its center Korsholma Castle. In the year following its founding, there were only 131 1/5 animal units on the estate. In 1559, there were 79 cows at Korsholma. The economy of the estate of Korsholma improved in the 1560s, when the numbers of livestock also grew: in 1571, there were already 332 animal units. On the cattle estate

Schedule 8. The figures presented by Hans Forssell of how many animals and animal units there were, on average, on one crown estate in Sweden in 1555. Alongside are the data for the same year for Häme Castle.

	Mean value on Sweden's crown estates in 1555	At Häme Castle in 1555
Oxen	35	72
Cows	64	82
Young stock	70	105
Sheep	156	298
Hogs	90	154
Total animal units	226 au	295.1 au

of Koivisto, the number of cows rose over 80 soon after its founding. On the royal estates of Satakunta, there were 608 animal units in all at the beginning of the 1550s.²²⁰ On the estate of Espoo, the number of cows exceeded 80 in some years during the 1550s and 1560s. Generally, there were a good 60 cows on the estate. A great number of livestock was raised at Vesunta at the end of the 1540s, when the estate was the central estate of Gustavus Vasa's inherited and private farms. In 1549, there were over 80 cows. In the following decade, the number of cows began to decline, and in 1566, there were only 10 cows. On the other crown estates, the number of cows remained smaller: there were 40 cows at Sairiala in the 1560s and an average of 50 cows at Helsinki in the 1550s and 1560s.²²¹

As the foregoing makes clear, Häme Castle was Finland's largest cattle farm. One can also compare the castle's livestock capital with that of Sweden's royal estates with the aid of Forssell's calculations. Forssell has presented the livestock capital of 63 Swedish crown estates for the year 1555.²²²

Häme Castle was, thus, clearly a larger than average cattle farm in the kingdom, but not quite the largest of the group. In 1555, there were ten estates in Sweden whose number of cows exceeded one hundred.²²³

Slaughter

Slaughtering was done mainly in the fall, when the animals were fattened up after pasture season. Also, with the passing of summer, the weather had cooled down and preservation of the meat was easier. In the fall of 1557, for example, 54 hogs, 348 sheep, 102 cows, 2 bulls and 5 oxen were slaughtered. Annually, the largest part of the sheep and cows slaughtered were tax animals driven to the castle by the peasants, and consequently, the slaughter did not effect any significant change in the numbers of the castle's own

livestock. It is difficult to estimate the proportion of the castle's own livestock in the slaughter. The most reliable data are obtained from the years 1549-1553, when it was reported in the joint accounts of the landed estates of Ojoinen and Saarinen how many cows were driven from the landed estates to the castle in the fall for slaughter.²²⁴

The slaughter was celebrated by eating part of the meat immediately. The greatest part of the meat, however, had to be preserved at once. The smokehouse was warmed and tubs were filled with strong salt water. The beef was dried, smoked and salted. The mutton was mostly smoked, and the pork was salted. Headcheese and sausage were made from the internal organs, the heads, the blood and the offal. A part of the tallow was reserved for dipping candles. In the fall of 1546, there were 36 barrels of black sausage and 8½ barrels of blood sausage made. Of the sheep's heads, 60 were eaten immediately and the remaining 470 heads were used in making headcheese. In addition to black sausage and blood sausage, meat sausage was also sometimes made. The sausage dough, into which barley groats could be mixed, was crammed into washed intestines, and the ends were tied with hemp string. To the castle bailiff and his inner circle belonged the privilege of gourmandizing on fresh meat outside the fall slaughter, also. Throughout the year, the slaughterer butchered suckling pigs, calves and lambs for the bailiff and his inner circle for their feasts or as provisions for a trip to Stockholm.²²⁵ In 1540, there were still 350 chickens at the castle. Meals of chicken meat, which was considered a great delicacy, were, however, prepared so often for the bailiff's entourage that after 1547 there were no longer any chickens at all. Clear up to 1553, a couple score of geese were also raised at the castle, a part of which was fattened for slaughter on a special feeding allowance of barley and oats.

Schedule 9. The slaughter cows belonging to Häme Castle's own livestock during the years 1549-1553 and their proportion as a percentage of all the cows slaughtered. The slaughters of the falls of 1549 and 1550 obviously had the purpose of reducing the number of the castle's own cows, for after that, the number of cows fell from around 100 to about 80 and remained such nearly the whole 1550s.

Fiscal year	Slaughtered in all	Castle's own cows	Castle's share in %
1548/1549	99	21	21%
1549/1550	113	32	29%
1550/1551	175	1	1%
1551/1552	101	5	5%
1552/1553	102	3	3%

4.5. Fish from the Nearby Waters and the Fisheries

Matti the miller was well provisioned with food when he left for spring fishing at the lake Lehijärvi in 1543. He had with him smoked beef, salt pork and bread. In addition to Lehijärvi, the castle's fishermen checked and emptied their traps at the castle in Vanaja Waterway.²²⁶ In spring, pike and bream, in particular, were caught in the nearby lakes when the fish came to spawn in the shallow shore waters. It was not possible to eat the whole catch immediately, and consequently, the greatest part of the spring fish was preserved by drying. Also, the peasants had dried the pike and bream they delivered to the castle as tax. To speed up the drying, the pike and bream were split, after which they were put up on an outside wall or pole to hang in the sunshine. The dried pike were easy to gather into a bundle for shipping. Stockfish was our most important export fish, and it was conveyed by way of merchants to the dining tables of the princes of central Europe.²²⁷ At the castle, also, stockfish was considered a delicacy, which, in largest part, was eaten at the meals of the courtiers.

Each year, the castle engaged 1-7 fishermen.²²⁸ Fishing with a large seine, in particular, required many people, and the castle's seines appear to have been bigger than the ordinary. In use in 1582 were an old 89-fathom-long seine and two new seines, whose lengths were 86 and 80 fathoms. A seine woven especially for catching bream was 20 fathoms long. The seines and nets were made domestically by knotting hemp. The seine ropes were woven from bast. Net fishing was very far advanced. In 1572, the castle had 27 whitefish, 10 bream and 8 pike nets. Salmon fishing, also, had its own nets, and the fishermen dragged the wading nets by wading in the shore waters. The boats were tarred and repaired, and sometimes a new fishing boat was also built domestically. It was more usual, however, to buy a boat, which, apparently, was the handiwork of a local master. In 1562, fish were caught in Vanaja with 2 seines, 7 nets, 19 fykes, 50 weirs and 11 traps, the entire year's catch being 12 barrels. The lake Lehijärvi was fished chiefly with traps.²²⁹

During a year, 10-20 barrels of fish were caught in nearby waters, and consequently, the castle's own fishing could cover only a fraction of its total consumption of fish. According to the food-consumption list for fiscal year 1549/1550, for example, 304 *lispund* of food fish (dried fry) were consumed at the castle during the year, as well as 218¾ *lispund* of stockfish, 62¼ barrels of barrel fish (salted fry), 38 *lispund* of dried bream, 32¾ barrels

of salted Baltic herring, 51½ bags of fresh-caught fish, 2 barrels of salted salmon, 2½ barrels of salted whitefish, 1¾ barrels of salted eel, 6½ *lispund* of dried eel and 2 *lispund* of pike bellies. The greatest part of this amount was tax fish. The fishing waters neighboring the castle were not particularly good, and there were many fishermen in the thickly settled region. The fresh fish obtained from the nearby waters, however, brought variety to the dining table. The peasants of the Districts of Ylinen and Sääksmäki delivered to the castle annually as tax fish an average of 580 *lispund* of stockfish, 51 barrels of barrel fish, 620 *lispund* of food fish and small amounts of dried bream; and, as a real specialty, there were in the lot dried pike bellies.²³⁰ Although, in these districts, the number of peasants who went wilderness fishing declined in the mid-sixteenth century, the peasants still owned extensive wilderness lands in central and eastern Finland. In addition, Päijänne and Vesijärvi were nearby lakes abounding in fish in the area of the District of Ylinen.²³¹

The fish caught in the wilderness lakes had to be preserved immediately. Barrel fish were salted fry named after the container for preservation, and dried fry were called food fish. Were the barrel fish delivered to the castle really ordinary salt fish? The Crown, indeed, attempted to increase the salting of fish by shipping salt to the province for barrel fish. Salt was, however, a valuable commodity among the peasants, and it seems strange that the peasants would have had the means for salting large quantities of fish, the Crown's help notwithstanding. In addition, salting was still a new manner of preservation among the people in the sixteenth century, drying, smoking and souring being the age-old methods of preserving fish. Soured fish was generally included in the food economy in the Middle Ages, and a lot of soured fish was still eaten in the eighteenth century. It is very possible that the much-eaten barrel fish at the castle was just this soured fish. The fish were, indeed, sprinkled with salt before being put out in the sunshine to sour slightly. When the fish were suitably soured, they were packed as tightly as possible in barrels, which were closed almost airtight with a cover. At that point, the souring process stopped. Well-packed fish could keep up to two years.²³²

Salted Baltic herring was held in high esteem. In the 1540s, the peasants of the District of Ylinen still delivered barrels of salted Baltic herring to the castle. Possibly, the peasants had gone, in accordance with the old custom, to the shores of the Gulf of Finland, fishing for Baltic herring. The coastal fishing of the peasants from the interior, however, began to fall off during the course of the sixteenth century already, the coast's own settlement becoming established.²³³

Baltic herring straight from the coast was also bought at the castle, and the estimation in which the fish was held made itself felt in the price. A barrel of salted Baltic herring cost 4 marks in the mid-sixteenth century, which was as much as the price of two barrels of rye or one cow.

Häme Castle had salmon fisheries at the river Kymijoki's Ankkapurha and the rapids Valkeakoski as well as an eelery at Anianpelto's rapids, Vääksynkoski, where the lake Vesijärvi flows into Päijänne. The eels were caught in traps at Vääksynkoski. To increase the efficiency of the eeling, a dam had been built, which the peasants of Asikkala had had to build for their corvée. The salmon ascended along the river Kokemäenjoki to the rapids of Valkeakoski to the spot on which the modern town of Valkeakoski is located. This, as well as one of the country's best salmon rapids, Kymijoki's Ankkapurha, the Crown had taken into its possession already in the Middle Ages, and Gustavus Vasa succeeded further in increasing the Crown's share of the fisheries. At the beginning of the 1570s, there was still going out from the castle to fish at Valkeakoski and Anianpelto. In the mid-1550s, there was, to be sure, a stage when the Crown's miller at Valkeakoski rented the fishery and paid the castle a barrel of salmon a year in rent.²³⁴ Ankkapurha, on the other hand, was given up at the beginning of the 1550s already. The whitefish fishery at the rapids Konnekoski came along as a new fishery at the end of the 1560s. In connection with Häme's reduction of wilderness, the Crown had taken into its possession the well-known fishing spot of Konnekoski located on the pond Rautalampi between the lakes Konnevesi and Hankavesi. In the year 1572, 328 *lispund* of whitefish were taken from Konnekoski with 39 seines, one net, six hoop nets, and seven traps.²³⁵

A special eel bailiff served at Vääksy during the years 1542-1544. One of the castle's squires might be sent as foreman to the other fisheries with the fishermen to look out for the interests of the Crown. Preparations were made for a long stay at the fisheries. Salmon nets and traps woven from hemp were taken along. In the load as provisions were smoked beef and mutton, as well as salted ham. Transporting beer barrels all the way to Ankkapurha would have been troublesome. And so the containers for brewing beer awaited ready at Ankkapurha, and malt and hops were packed up to take along upon leaving the castle.²³⁶

The fish had to be preserved at the fishing place, and so spruce barrels and salt were sent to the fisheries from the castle. The greatest delicacy was cold-smoked salmon. A hut was built on the shore of

the rapids for cold-smoking. The cleaned fish were raised, bound in pairs, to hang from the roof beams of the hut, and a fire was maintained below, in which hardwood was burned. The fish cured slowly in the smoke until it was delicious. The cold-smoking of salmon, however, was so troublesome and time-consuming that the smoking of large quantities did not come into issue. Cold-smoked salmon also spoiled faster than salted salmon.²³⁷ At Vääksy, the eel was dried or salted before transport to the castle.

One or two barrels of salmon were obtained annually from Valkeakoski, but up to 14 barrels of salted salmon were delivered to the castle annually from Ankkapurha. In a kingdom-wide comparison, however, the catches at Ankkapurha and Valkeakoski remained small. The Crown collected its tax from the tens of different weirs and salmon dams on the rivers Kokemäenjoki and Kemijoki, which were located in numerous successive salmon falls. By the beginning of the modern period, salmon fishing had been successfully transformed into a monopoly of the Crown, or a regality. The peasants formally rented salmon fishing from the state by paying half their catch for fishing rights. The Crown's share on Kokemäenjoki, for which there are good accounts from the period of Pori's enfeoffment as an earldom in the period 1650-1670, varied from about 50 to 90 barrels of salted salmon and 20 to 50 barrels of salted whitefish. On the river Kemijoki, the peasants had succeeded in 1618 in making the, very advantageous for them, so-called Scheduling Agreement, in which the state tax on salmon fishing was set at 55 barrels of salted salmon per year.²³⁸ Thus, Finland's most productive salmon river did not pay the most national tax.

Dried and salted eel, as well as salted and cold-smoked salmon, were delicacies that were served only to the castle bailiff, his inner circle and the most refined guests. At the end of his letter addressed to the bailiff of Häme Castle, Isak Nilsson, in 1552, Gustavus Vasa states: "Our intention is that you send some of the salmon from the fishery at Ankkapurha to Stockholm and not eat it all at the castle." On this point, the king was too severe, for the greatest part of the salmon catch was delivered annually to Stockholm Castle.²³⁹

5. Professionals of Many Trades

In the early part of October, 1558, a large group of artisans worked at Häme Castle: Eskil the gunsmith, Acustinus the blacksmith, Heikki the fuller, Matti the major-domo, Jaakko the cellarer, Perttu the shoemaker, Henrikki the castle cook, Deonisius the porter, Sipi the porter, Jaakko the cooper, Mikko the cooper, Sipi the brewer, Simo the brewer, Martti the cook's helper, Olavi the cellarer's helper, Eerikki the major-domo's helper, Nuutti the cook's helper, Simo the fuller's helper, Sipi the fuller's helper, Jyrki the fisherman, Kerttu the baker, Valpuri the baker, Anna the dormitory matron and Pirkko the dormitory matron. In the castle storehouse, Kaarina the matron of the storehouse, Valpuri the spinster and the weavers Maria Esko's daughter and Pirkko Sipi's daughter wove bedclothes and furnishing fabrics.²⁴⁰ Clear to the end of the 1550s, about 25 artisans were regularly engaged in the service of the secondary sector. In 1558, their number rose to over 30, and in several years during the 1560s, 40 regularly employed artisans worked at the castle. The increase in numbers is accounted for by a continuous period of construction beginning in 1559, for which professionals from different trades were needed.

Häme Castle can be considered a prominent craft center. The professional handicraft trades were equally well, and even as diversely, represented at the castle as in the Finnish towns. During the research years, 13 different professional trades, on average, were represented at the castle. Experts in the most diverse different trades were hired in the 1560s. There were 17 different professional trades altogether in 1561. In only a few years at the turn of the 1540s and 1550s there were less than 10 different professional trades.²⁴¹ In the first half of the seventeenth century, according to Ulla Heino, craftsmen from 8-16 different trades were to be found in the town of Pori. There were professionals from still fewer different trades in Rauma: during the years 1600-1649, there were 4-8 different professional trades represented.²⁴²

5. 1. Everyday Implements

The blacksmith, the shoemaker and the cooper were included almost every year in the castle's staff. A tailor is also often mentioned among the squires on the payrolls. The tailor mentioned at Häme Castle was either a person who had obtained the epithet of

tailor or he sewed clothes only for the highest in rank at the castle, the others tending to their own clothes. The leather-dressers, the saddlers, the cannon founders, the turners and the charcoal burners served at the castle for a few years, and, starting at the end of the 1550s, a gunsmith and a fuller were also included among the craftsmen. In the following, we shall examine more closely the functions of the blacksmith and the shoemaker.

The greatest amount of iron, 334 *lispund* in the shop, was used in 1554, when six light guns, that is to say falcons, were made. The other peak years of consumption were the gun towers' construction years, 1559 and 1566, when 191 *lispund* and 231 *lispund* of iron were used per year.²⁴³ Although weapons production and construction consumed a significant part of the iron, one can presume that these trades indirectly served other areas also. Along with equipping the soldiers, shoeing the mounts and the construction work, the blacksmiths forged implements for the economic needs of the castle. Iron was more in use in the economy of the Crown than among the peasants, and there were professionally competent blacksmiths in the service of the Crown. It was typical that many innovations occurring in the implements in the sixteenth century required a lot of iron.²⁴⁴

In order that even the most demanding work should be managed, the standard of equipment in Häme Castle's shop was upgraded in the mid-sixteenth century. There were more girders, pliers, sledgehammers, hammers and drills in the shop at the beginning of the 1560s than a couple of decades earlier. In 1540, for example, the shop's tools included 2 pairs of girders, 6 pairs of pliers, 3 sledgehammers, 3 carpenter's hammers, 2 bench hammers. In 1560, the blacksmith's tools were 3 pairs of girders, 10 pairs of pliers, 10 sledgehammers, 5 carpenter's hammers, 2 bench hammers and 6 weapon drills, of which there had not been any at all a couple decades earlier.²⁴⁵ All this benefited the castle's everyday life, for the blacksmiths were better able to make plowshares for the *sahra* and plow, plowpoints, scythes, and sickles for farming. The axes and iron-pointed ditching spades made the work of the men more effective. Iron was sent nearly every year to The King's Mill and to the mill at Valkeakoski for repair of the mills' machinery. Pot handles, kettle rings, gridirons, pot legs, dippers, knives, coal hooks and coal shovels were forged in the shop for the kitchen. The fishermen could chop holes with ice chisels, and for their boats, they obtained nails from the shop.

Beside the curtain wall, between the larder and the armory, was the castle's shoemaker's shop.

There was sufficient work for the shoemakers, for the servants' wages included up to six pairs of shoes per year. Several pairs of shoes, at least, were needed during the year, for the castle's stone and earthen floors wore out the thin-soled shoes quickly. Those in higher positions, such as the bailiff and the scribe, received ox- and cowhides in salary. They had boots and shoes made from these, apparently either by the castle's shoemaker or on a trip to town. Wealthy people could procure up to 20 pairs of shoes for themselves per year.²⁴⁶ In 1542, the castle's shoemakers, Nuutti and Martti, stitched 256 pairs of single-soled everyday shoes with hemp thread. This number of shoes required 30 cowhides, which were treated with grease delivered from the castle's kitchen. Some ten pairs of double-soled shoes were made in later years in addition to the single-soled slippers. Bellows, money pouches, gloves and stockings were also sewn from leather. Calf- and sheepskins were dressed for account-book covers and to cover window openings.²⁴⁷

Many tasks, in addition, were included in the castle's workday, which the hired men apparently took care of. The fishermen, certainly, repaired their own boats. In addition, the mill boats and travel boats also had to be tarred each year, as well as a barge, on which the livestock and large quantities of people and goods could be transported to the opposite shore of Vanaja. Rope, which was needed on the construction site for laying stones up on the wall, was braided from bast. Firewood was cut in the nearby forests, and logs were felled, from which lumber was obtained.

5.2. Eating

New Beer by the Barrel

Beer was important in the economic management of the castle. The continuous production, storage and consumption of enormous quantities of beer required its own organization and staff. Sprouted grain, or malt, yeast, water and hops, which flavored the beer and improved its preservability, were needed. In the Middle Ages already, the hop was an important useful plant in all of southern Finland. The oldest information on the cultivation of hops is from Varikonniemi, located opposite the castle, from the fifth century A.D. At that time, hops also grew wild in the luxuriant groves of the shore of Varikonniemi.²⁴⁸ The castle's growing of hops was insignificant, and consequently, the greatest part of the hops was

obtained as tax revenue. The hop gardens planted in warm and sheltered places in the yards of the Häme peasants were a familiar sight. The malt, also, which was usually sprouted barley, was in largest part delivered to the castle by the peasants as tax. In those years in which barley was cultivated at the castle, maltsters were also hired.²⁴⁹ The brewing of beer was begun by dulcifying the malt derived from barley grains in the warmth of the castle's malt room. The maltsters, who were generally women, lowered the sacks and baskets of barley grains into water to soak. The grains that were sufficiently soaked were brought to the malt room, where they were spread on the floor to sprout. The sprouted grains were dried on the cabin's platform by warming the sauna stove.²⁵⁰

The brewers worked in the brewery cottage located on the shore of Vanaja.²⁵¹ Handling the large beer containers was very strenuous, and so the brewers were usually men. There was in the brewery cottage, for warming water, a copper cauldron bricked into place, whose capacity was 7 barrels. Also in use were 2½- and 1½-barrel-capacity copper cauldrons. First the malt was steeped to mash by slowly adding water to it. There were usually three or four steepings, and each time the water was hotter than the previous. Finally, the mash was the consistency of thick gruel. Then it was cooked, either by means of hot stones or in the large cauldron. Red-hot stones were put into the tub until the mash began to boil. At first, the stones had to be stirred briskly, so that they didn't burn the bottom of the wooden container. According to Matti Räsänen, cooking with stones was still a part of brewing beer even in the twentieth century. The mash could also be scooped from the tub into the large cauldron, where it was allowed to simmer, but not boil too hard.²⁵²

Next, the liquid, which was called wort, was strained from the mash. The boiled mash was spread on straw placed over a trough, mixed in with which could also be juniper boughs. Hot water was poured over the mash, at which time the wort filtered through the straw into the trough. Flavoring hops and yeast were added to the wort. The yeast was the so-called surface or top yeast, which it was customary to keep in the hops when they were picked and dried. The hops were pressed from the fermenting wort and put to dry, awaiting the next usage. The yeast could also be used in baking.²⁵³ Surely, the leftover mash was also made good use of in baking or as animal feed. No mention of its usage, however, has been preserved.

The initial fermentation usually occurred in open wort-tubs, in which the progress of the fermentation was easy to monitor. The largest fermentation vessel in the castle's brewery cottage was an 18-barrel-

capacity wooden vat. The smaller vats, equipped with bungs, were 4-7 barrels in capacity. When the surface foam receded, the beer was transferred into barrels. The fermentation was monitored by sticking a burning splint into the barrel's filler hole. If the fire went out, the beer was good. When the wort had fermented enough, the barrel's filler hole was closed and the final fermentation in an airtight barrel began. Depending on the type of beer, the drink was ready to enjoy after 2-6 months. The best containers were oak barrels, for which boards were bought as far away as Denmark.²⁵⁴

Some thirty barrels of new beer were made weekly, or a full 1550 barrels in a year. The amount was not exceptionally large. At the royal castle of Stockholm, a full 6000 barrels of beer were brewed in 1539, and 4358 barrels of beer were made ten years later on the Royal Estate of Uppsala. At Häme Castle, lord's beer, bailiff's beer, cavalier's beer, everyday beer and vinegar were brewed.²⁵⁵ Beer was by no means made in accordance with the castle's own recipe. The king had issued national guidelines for how much malt and hops could be used in making different grades of beer. At the turn of the 1550s and 1560s, the stipulations of the Royal Ordinance of 1558 were observed at the castle, according to which, in making the different grades of beer, one had to use malt, in Stockholm measures, per barrel of beer as follows: bailiff's beer 1 *spann* 1 firkin, cavalier's beer 1 *spann* and everyday beer ½ *spann*. Hops were allowed per barrel in proportion: bailiff's beer 3-4 *nål*, beer 2-3 *nål* and everyday beer 1-1½ *nål*. In addition, vinegar was made, which was used as a base liquid in food preparation.²⁵⁶ It was a general custom in continental Europe in the Middle Ages to use wine vinegar as a soup stock in food preparation together with wine, milk or water. The vinegar gave food a sour taste, which the upper class, in particular, favored. The use of vinegar was also based on its stimulation of appetite and its effect of improving the preservability of food. In England, especially

among indigent people, vinegar made from beer was also used in food preparation.²⁵⁷

According to the royal recipe, a barrelful of vinegar required 1 *spann* 1 firkin of malt and 1½ (1) *nål* of hops. Häme Castle's vinegar was made according to a slightly better directive, for 1 *spann* 2½ firkins of malt and 2 *nål* of hops were allowed per barrel of vinegar. The making of lord's beer was not mentioned in the Royal Ordinance of 1558, and apparently this beverage was not brewed in all the crown households. At Häme Castle, 2 *spann* of malt and 4½ *nål* of hops were included in a barrel of lord's beer. Lord's beer was the strongest, the alcohol percentage being 3.5. The other grades' alcohol percentages were bailiff's beer 2.8, cavalier's beer 2.3 and everyday beer 1.1.²⁵⁸

According to Gustavus Vasa's directives, the soldiers were supposed to get at least 1½ tankards of beer a day on weekdays, and on the Sabbath the ration rose to two tankards. According to other data, a tankard a day was the beer ration at the castle for adult men and women. In 1542, 1½ tankards of beer, or 3.85 liters if we assume the capacity of a tankard to be 2.45 liters, were drunk per person at Häme Castle daily.²⁵⁹ During the years 1559-1561, nearly ten barrels, or 1175 liters, of beer were consumed per person at the bailiff's table annually. The daily ration at that time was 3.2 liters. During the same years, the servants drank an average of 7½ barrels, or 880 liters, per year, in which case their daily consumption was 2.4 liters.²⁶⁰ At the monastery of Vadstena, the monks, nuns and workers drank 3 liters of beer daily per person. At Kastelholma, fully 4.4 liters per person were consumed daily. The copious consumption of beer is traditionally accounted for by the salty and often slightly spoiled food, which was easier to swallow with abundant drink.²⁶¹ The significance of beer was, however, more complex. First of all, beer was the principal drink. Other refreshments, such as coffee and tea, were not yet known. Particularly in regions that were densely populated, well water was



Figure 7. In private households, the brewing of beer, like baking, was women's work. In the economies of large households, such as monasteries, estates and castles, on the other hand, men also served as beer brewers. At Häme Castle, the making of malt was entrusted to the women, and the brewers were exclusively men. Olaus Magnus, *A History of the Nordic Peoples*.

often contaminated. Experience had taught one to avoid it. On the other hand, beer made by fermenting in boiled water was a healthful and nourishing drink. Nearly all the milk at Häme Castle was churned into butter. Buttermilk, to be sure, was obtained in connection with the churning; it was not enough, however, for all the people. One must also remember that the cows were dry nearly the whole winter. Grain was the most important source of nourishment, and it was more pleasant to drink part of the grain as beer than to eat it all as porridge or bread. Porridge and bread were also easier to swallow with plenty of drink. Beer soup was a common food, and beer could be drunk warmed on cold winter days. Beermaking was also a solution to the problem of preserving the grain.²⁶²

Bread—The Basis of the Food Economy

At the medieval estates, monasteries and castles was a special baking cottage, in which the bread of the greater household was baked domestically. At Häme Castle, there appear to have been two baking ovens in use: in 1559, Staffan the mason made a baking oven and chimney in the storehouse room. In 1560, the oven in the baking cottage at the main castle was repaired.²⁶³ Bread was the main food of the castle folk, and so new bread had to be baked weekly. During fiscal year 1550, over 17 barrels of bread were baked each week on an average, and consequently, about 920 barrels of bread were made during the year. Because the nourishment included little butter and other fats, grain was the most important source of energy. In addition to about three liters of beer, each resident of the castle consumed an average of 700 grams of bread flour a day.²⁶⁴ In the food preparation, porridge made from rye flour and barley groats was used to some extent. The amounts, however, were minimal compared to the consumption of bread grain. In 1561, the per capita consumption of bread flour at the bailiff's table was 171 kg, and in the same year, 16 kg of rye flour and 6 kg of barley groats per person were used in the preparation of other foods. In 1550, the servants' food did not include, besides beer malt, other grain products than bread. Some ten years later, meals were made for them from barley groats, at which time 3.5 kg of groats were consumed during the year per person.

The share of bread in the daily eating has varied during different periods, largely according to how well grain production has been able to cover the demand. Beginning at the end of the thirteenth century, with the growing population in Europe and the cooling of the weather, grain production was not

able to satisfy the need. Obviously, just because of the high price of bread, more meat than bread was consumed in Europe during the Late Middle Ages. Beginning at the turn of the modern age, along with the improvement in agricultural production, the significance of bread again grew, and in the sixteenth century, bread was the most important source of nourishment.²⁶⁵ Bread was the basic nourishment for everyone. In the Crown's court, however, there was feasting on a quite different kind of bread from what the hired men of the castle ate. The bread revealed the social position of the eater. Wheat was cultivated very occasionally at Häme castle. In the granary, however, was always wheat flour in reserve, from which rolls, loaves, cakes and even twists for banquets arranged in honor of Duke John or other important guests were baked. The courtiers' bread was baked from rye. In the everyday routine, even the courtiers had to nibble on the grain husks in their bread, which was called cavalier's bread.

So-called bolted bread, on the other hand, was baked for them from refined flour for banquets.²⁶⁶ The bread eaten by the servants, day in and day out, was everyday bread made from whole-grain rye and from barley flour.²⁶⁷ It is not known for sure whether the castle's bread was thick and soft in the eastern Finnish manner or western Finnish thin, hard rye bread. On the ethnologic map, the heart of Häme falls clearly in the cultural circle of the western Finnish bread. On the other hand, the castle's weekly baking times would point to eastern Finnish soft bread, which it was customary to bake several times during the year. The information on the weekly baking is from the year 1549/1550, when an average of 17 barrels of bread was baked at the castle each week.²⁶⁸

Baking was the basis of the castle's food economy, which could be called a rye-bread culture. Behind the making of enormous quantities of bread was not only the needs of the castle's own people. In the rye-bread culture was also the castle's basis as a so-called storehouse economy. Large stores of rye were maintained at Häme Castle: there was an annual average of 1931½ *spann* of rye in storage. In the early part of the 1540s, many factors contributed to the diminution of the store. The Dacke Rebellion broke out in Sweden in 1542. The German mercenaries in Finland were transferred at that time to Sweden. At the same time, the noblemen were assembled in the castles of Finland as garrison because it was feared that Russia would take advantage of Sweden's internal unrest. In 1542, Gustavus Vasa sent a letter to the bailiff of Häme Castle, Isak Nilsson, in which he demanded the assembling of large mounted and foot troops at the castle.²⁶⁹ The small rye store in

1542 would indicate that Isak complied with the royal order by maintaining the troops at the castle. In the 1540s, the castle also engaged in grain trade in Turku and Viipuri. In particular, the amounts of rye sold on the Turku market could mount up: in 1545, for example, 1750½ *spann* of rye were sold in Turku. Famine years had tried the peasants the whole first part of the 1540s. At that time, the peasants bought grain from the castle. The amounts of rye they bought, however, were small enough (76 *spann* in 1545) that they did not have a great effect on the stores.²⁷⁰ The grain sales in Turku and Viipuri at the end of the decade depleted almost entirely the rye remaining at the castle. The changes that occurred in farming also affected the abundance of rye stores. During the years 1546-1562, the concentration was solely on the cultivation of rye, and at the same time, the productiveness of rye rose.²⁷¹

Table 1. Häme Castle's Rye stores During the Years 1540 - 1569. The amount of rye in *spann*.

year	amount	year	amount
1540	799	1554	1327
1541	589	1555	267
1542	229	1556	1055
1543	937	1557	1406
1544	1844	1558	1385
1545	1221	1559	2235
1546	3183	1560	3362
1547	2679	1561	3754
1548	3364	1562	4561
1549	2819	1563	3117
1550	3147	1565	1000
1551	2935	1566	537
1552	2275	1568	672
1553	2823	1569	565

The rye reserves were clearly drained in times of war, when the castle had to be ready to feed large military detachments and to send food to other crown castles and estates. During the period of Gustavus Vasa's Russian war in the mid-1550s, 94 barrels of cavalier's bread were delivered from the castle to the Royal Estate of Helsinki and to the royal fleet anchored off Helsinki. There were large bread deliveries to Helsinki and to the fleet some ten years later, also, and in 1566, fully 234 barrels of cavalier's bread were sent to Norrköping's central warehouse.²⁷² The material demands of a storehouse economy were not possible for just anyone. By means of its own production supported by tax deliveries (barley and oats), large stores of grain could be maintained at

the castle. Bread grain was ground in the castle's own mill, Kuninkaan mylly (The King's Mill). A very nonperishable rye bread was baked in the ovens from rye flour. The stores of rye bread gave the castle prestige and the Crown the possibility of preparing for war. The castle's food stores were the support of the army.

The Organization of Eating Practices

From the Middle Ages clear up to the nineteenth century, eating showed the social hierarchy, and especially the position of those in power. The quantity and quality of the food distinguished the upper class from the peasantry. Many foodstuffs and dishes were food of the elite. At Häme Castle, everyone's social position on the staff determined what kind of food he got to eat. In order that eating should be easy to control and to prevent abuses, it was divided between the bailiff's table and the servants' table.²⁷³ The bailiff and other high officials, the bailiff's attendants, the squires and the professional people took their meals at the bailiff's table. The number of people at the bailiff's table could become very large, for the visitors at the castle participated in dining at the bailiff's table. The castle's servants and the staff of the landed estates ate their meals at the servants' table. In practice, large numbers took their meals at the table. The strongest beer, the best cuts of meat and the choice fish were enjoyed by a small, but high ranking, group at the meals. Grain products were the basis of the meals at both tables, but a greater abundance of different kinds of meat and fish dishes was available at the bailiff's table than at the servants' meals.

The sources indicate that there were two kitchens. In the castle's accountancy is mention several times of the bailiff's kitchen and of the servants' kitchen. There were often two cooks engaged, for one of which the designation castle cook was used. Possibly, the servants' cookhouse was located outside the main castle and the kitchen in the main castle was the bailiff's kitchen. The main castle's kitchen was located on the ground level, as was customary in medieval castles (Fig. 8 p. 130).²⁷⁴ The center of the kitchen was an enormous hearth, in which an open fire burned from morning to evening. In the hot and smoky kitchen, the castle cook, Henrikki, who had the main responsibility for cooking for a period of several years in the mid-sixteenth century, had, with his helpers, to handle the heavy kitchen utensils. In 1548, there were 19 iron and copper pots and kettles in the kitchen, of which the largest copper kettle held about 120 liters and the weight of the heaviest pot was about 12 kilos. Part

of the kitchen utensils was legged pots that could be placed directly on the coals. There were tripods for the legless pots. Also, hanging from chains above the fire were pots, in which pea soup could be boiled from salted or dried meat and peas. The best cuts of meat were cooked on a spit. While the meat was cooking on the spit, a grease pan was placed underneath. All the grease left over from the preparation of food was carefully saved and was used, for example, in oiling hides or making wash soap. Salted fish was fried and boiled or eaten as it was. Dried fish was made into lutefisk or soup. Regardless how the fish was fixed, it was customarily served with bread, gruel, porridge or beer soup. There was also a gridiron in the castle's kitchen for cooking fish.²⁷⁵

In addition to the requirements of the Crown's own hierarchy, the regulations of the Catholic Church also affected the arrangement of dining practices. The Church required division of the week into fish and meat days, in which meat could be eaten only three days a week. Many Church festivals were preceded by fast, the longest of which were before Christmas and Advent. There are no data on the observance of fish and meat days at Häme Castle in the mid-sixteenth century. It is certain, on the other hand, that there was still fasting at the castle in 1550, at least. At that time, 40 days before Easter were spent in fasting, during which time meat was not eaten at all.²⁷⁶

The eating utensils were wooden cups, either turned on a lathe or made in the manner of compound utensils, from which it was easy to either eat or drink. A knife with one's own mark, which was part of everyone's personal equipment, was the most important eating utensil. Eating proceeded best with the fingers or by drinking straight from the cup, the bottom of which was cleaned at the end with a slice of bread. Part of the bread was baked in a thin, hard disk resembling hardtack, which was easy to use as a plate. In 1548, the castle's service included 10 wooden tankards, 28 mugs, 30 goblets, 6 beaked tankards and 16 scoops, or tankards made from stumps. The castle lord's personal service could include drinking glasses, which were a luxury import. When the castle lord went with his guests to mess, the table was set with copper and tin pitchers, tin platters and copper roasting platters. During the feast, the servants went around the table with a finger bowl, in which the diners now and then washed their fingers. Their hands were dried on a long hand towel hanging around the servant's neck.²⁷⁷

Its own specialized staff was engaged permanently in the food management, the number of which fluctuated on either side of ten persons. Certain food-service functions were filled from

one year to the next. On the payroll were one major-domo, one cellarer, one or two cooks and one miller. The numbers of bakers and brewers, who had responsibility for the most significant part of the food management, could even rise to four. The castle's food management was a storehouse economy based on grain. With the termination of the castle's own cultivation of barley in 1545, malt was delivered as a tax revenue and the in-house maltsters were no longer needed. The slaughterer is not found on the castle's payroll after 1549, and the slaughter was attended to by, at least, the master of the landed estate of Ojoinen, Bertil.

Major-domo (*ruokailuvouti*) is translated into Finnish from the Swedish word *redesven*. In the court of Gustavus Vasa, the *redesven* was responsible for the setting of the table and the serving of the food. He was thus a sort of butler of later times. A *redesven* was generally included on the staff of the other castles, too, where his functions were certainly more multifarious than at court.²⁷⁸ In the medieval Swedish dictionary, *reposven*, or *redesven*, is defined as a bailiff, a manager or a food-materials agent. According to Ailio, the *redesven*, or household bailiff, supervised the progress of the service, attended to the sufficiency of the food materials and distributed the candles to those who needed them.²⁷⁹ The Finnish translation *ruokailuvouti* (major-domo), thus, well describes his functions, which included responsibility for the arrangement of eating practices. The organization of the eating of one hundred, or even, occasionally, close to three hundred, persons at Häme Castle several times during the day was not an insignificant task. The information is recorded from the royal estates of eastern Finland in the sixteenth century that wake-up time would have been 4 o'clock in the morning. Breakfast was eaten at 7 o'clock, dinner at 12 o'clock and supper at 8 o'clock p.m. Thus, meals would have been eaten on the royal estates three times a day. The more general custom in the medieval Nordic Countries was to eat two warm meals a day, and only in the seventeenth century was it changed to three warm meals.²⁸⁰

5.3. The *Fatabur*—The Castle's Weaving Mill and Storehouse Tower

In writing to the bailiff of Häme Castle, Isak Nilsson Banér, in January, 1552, Gustavus Vasa was not satisfied with the bailiff's activities on behalf of the storehouse: "You ought to plant flax seed and hemp seed for the betterment of the castle and the storehouse just as you do on your own estate for your own needs. We should like to know what you have done with the feathers that were delivered to the castle after you were given command there? For scarcely any mattresses and pillows have been made at the castle during your tour of command. We know, of course, that an abundance of birds is delivered to the castle annually from the bailiwicks, and also, the castle's own hunters have shot birds. Therefore, We would be pleased to see mattresses, pillows, bench pillows and cushions made from them, as well as ryas, cloaks, rough fabrics, tapestries, quilts, sheets and suchlike. You come annually to deliver shipments to Stockholm, Gripsholm or elsewhere, and people, to whom pertain wages and upkeep, must be kept there in the storehouse at Häme Castle. We should think there would be some benefit from its being managed with greater care."²⁸¹

The *fataburs* were tower-like cloth and supply storages that had come into usage in eastern Sweden in the Middle Ages. Often these had 2-3 levels and a narrow recess wrapped around the second level as in a two-story outbuilding. At Kokemäki Estate, among other places, was such a two-story-type *fatabur* storehouse in the mid-sixteenth century. The *fataburs* were often located apart from the other buildings. The storage rooms included in large buildings could also be called *fataburs*.²⁸² The pentagonal tower on the northwest side of the curtain wall served as Häme

Castle's *fatabur*, and consequently, the *fatabur* could also be called the *fatabur* tower or storehouse tower (Figs. 5 p. 19 and 9). The textiles and threads necessary in the housekeeping were made and kept in the *fatabur*. It was also the storage for the most valuable metal objects such as the tin tankards and the copper roasting platters. In the cottage next to the tower worked the matron responsible for the *fatabur* and her maid also used for the *fatabur* cottage was the designation women's cottage, which was a common designation for the medieval castles' weaving mills.²⁸³

The medieval laws reflect the old conception of the woman as maintainer of the household. As an indication of her responsibility, the woman had in her possession the household keys, which also symbolized her power. The position of the castle's *fatabur* matron could be compared to the position of the mistress of a household. The *fatabur* matron had exclusive right to the keys of the *fatabur*, and at the same time, she also had responsibility for the valuable contents of the *fatabur*. The textiles, whose making required a great deal of work, were an important part of the castle's property. The *fatabur* matron's special position is revealed by the fact that she was the only woman among the castle's best-paid artisans. Her wage was as great as that, for example, of the major-domo, the cellarer, the shoemaker and the blacksmith. The number of the *fatabur*'s permanently employed maids varied from two to six. At Häme Castle, as at the other castles, spinners and weavers in the strict sense are rarely mentioned in the payrolls.²⁸⁴ The women spun wool, flax and hemp threads, and from these, wove bedclothes, furnishing fabrics and clothing fabric. There was shearing, spinning and weaving also on the landed estates: in 1542, 136 ells of frieze were made at Ojoinen and 142 ells at Saarinen.

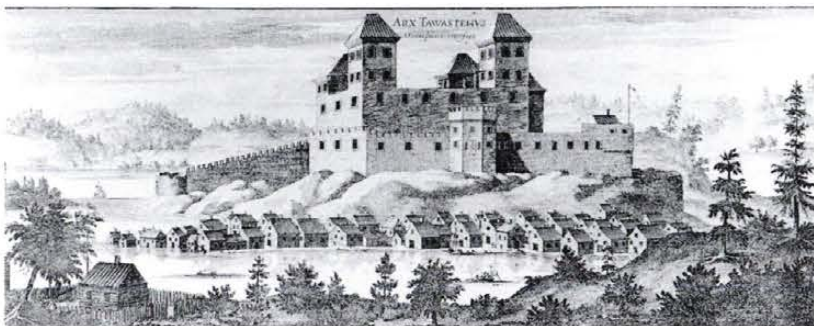


Figure 9. In the engraved copperplate based on Eric Dahlberg's drawing made at the end of the seventeenth century, Häme Castle is pictured from the north side. On the north side of the castle a town was founded in 1639, whose predecessor could be called the castle village. The pentagonal *fatabur* tower dominated the view seen from the direction of the castle village. At the juncture of the seventeenth and eighteenth centuries, a medieval picture representing the Crucified Christ was still visible on the façade of the *fatabur* tower. In question is whether it was a fresco or relief. *Suecia Antiqua et Hodierna*.

The Greatest Part of the Textiles is Bedclothes

The most usual work in the *fatabur* cottage included the weaving of ryas, bedcovers and blankets to be used as bedclothes. Woven in addition were frieze and broadcloth, which, in the wage payments to the Crown's people, was known by the name Häme broadcloth. Häme broadcloth was considered to be of poorer quality than the broadcloth woven at Turku Castle. Now and then, new bench cushions, wall drapes and tablecloths were made. Particularly from the latter part of the 1540s on, truly many bedclothes, and especially bedcovers, were made in the *fatabur*.²⁸⁵ In 1542, the *fatabur* matron, Anna, and the maids, Anna and Gertrud, wove two ryas, 4 bedcovers and 12 blankets for bedclothes. Ten years later, 8 ryas, 20 bedcovers and 14 blankets were made during the year. During the year 1554, all in all, 6 ryas, 31 bedcovers, 2 blankets, 3 pairs of sheets, 7 mattresses, 5 pillows, 2 tapestries, 1 wall drape, 2 scarves and 2 hand towels were made. In addition, 112 ells of frieze were also made on a hand loom. Although, in 1552, a weaver and two more maids than ten years earlier had been hired, one can nevertheless consider the pace of work fast. (Fig. 10 p. 130).

The new bedclothes were needed for the soldiers quartered at the castle, whose numbers began to grow from the end of the 1540s on. To replace the worn-out blankets and bedcovers, new had continually to be woven. There always had to be bedclothes in storage in the *fatabur* also, so that high-ranking visitors and officials out on royal matters could be offered a decent bed. There also had to be a readiness to deliver ryas, bedcovers and blankets to other crown centers. According to Riitta Pylkkänen, the quantities of ryas at the Finnish castles were at their greatest in the 1560s and 1570s. Clear up to the conclusion of the Treaty of Täysinä (1559), the castles of Finland were important military places, in which it was necessary to be prepared to quarter large troops. In the area of 1600, there were still some worn ryas kept in the *fataburs* of the castles.²⁸⁶

The greatest part, about three-fourths, of the textiles kept in Häme Castle's *fatabur* were bedclothes: ryas, bedcovers, under-blankets, mattresses, pillows, sheets, pillowcases and curtains.²⁸⁷ The number of ryas, which were considered the most valuable of the bedclothes, remained in the neighborhood of 40. On the other hand, the numbers of bedcovers and blankets clearly rose during the mid-sixteenth century. In the early part of the 1540s, there were about 30 bedcovers and about 30 blankets in the storehouse. In the following decade, there was an average of 81 bedcovers and 74 blankets. The numbers of mattresses and pillows

also grew: in 1540, there were 9 mattresses and 12 pillows at the castle, and in 1561 the numbers of both had risen to 23.

In the Middle Ages, leather adapted as bedclothes was common in the castle. In the sixteenth century, textiles woven from wool, flax and hemp, however, had almost completely displaced the leather sheets and head pillows. Leather coverlets, to be sure, were still used as covers and on the floor under the straw in sleeping. In Häme Castle's *fatabur* in the mid-sixteenth century were still found some leather pillows and leather mattresses, which, however, were described as old and in poor condition. Still more popular as material was wool, which was pleasant to use in the castle's damp and cold rooms. In addition, wool fabric retained its body even when unwashed for a long time. This was an important quality, for it was customary to wash woolen under-blankets, for example, only once a year.²⁸⁸

The greatest part of the people of the castle slept the night on loose straw on the benches, the tables and the floor. On top of the straw in place of a sheet was spread a sturdy woolen blanket, or under-blanket, which held the straw well in a pile and prevented its pricking the sleeper in the back. A blanket could, thus, be popularly called an under-sheet. On the blankets were generally gray, black or red stripes on a white background. There were, to some extent, also blue-striped blankets. Mattresses could also be covered with under-blankets. Bedcovers were usually used as covers. The bedcovers and blankets were the everyday bedclothes of the people, and the ryas, which were considered the most valuable covers, were reserved for the highest-ranking persons. The newest and most beautiful ryas belonged to the master of the castle, and when the ryas became worn they were donated in turn to those lower in order of importance. The ryas that were considered completely worn out might be given the poor and the ailing. When Herman Fleming relinquished command of the castle to Jöns Brun, he handed over to his successor at the same time six of the castle's finest multi-colored ryas. The castle's bedclothes included, in addition, some tapestries (*täpette*), which are thought to have been patterned and more rare as bedding.²⁸⁹

The greatest part of the ryas was undyed wool. The oldest information on colorful ryas at Finland's castles is from Häme Castle in 1548. There were at the castle at that time, in addition to 33 old ryas, 13 new, colorful ryas, of which 11 were presented to the king in 1551. In the ryas reserved for the castle's gentlefolk might be red and yellow stripes on a black-and-white background. The stripes were in the ryas' bottom woof, or surface side, because the pile side

was always hidden, being turned toward the sleeper. Gradually, the making of brightly colored ryas at Häme Castle ended. The old, colorful ryas were used up and the stock of ryas was changed to black and white. The bedcovers, also, were often woven striped, using two or three colors. The common colors in the bedcovers, also, were black, white, red and yellow. In size, the under-blankets, ryas and bedcovers were normally 4 ells (about 240 cm) long and 2½-3 ells (about 180 cm) wide. The bedclothes could be even larger, for they were proportioned according to the size of the bed. The beds usually were capable of sleeping several persons, and the rya, for example, covered everyone sleeping in the same bed.²⁹⁰

The family of the castle bailiff, the most important officials and military personnel as well as high-ranking visitors already in the sixteenth century had beds for their use, on which were feather-filled mattresses, feather pillows and linen under- and top-sheets. As a casing material for the castle's mattresses and pillows, both frieze and tow cloth were used.²⁹¹ The clergymen of Häme also used sheets at the turn of the modern period: the estate of Pälkäne's vicar, Master Jöns, included, among other things, 1 pair of sheets. The sheets were truly a luxury, for the peasantry needed flax above all for underclothes and work clothes. A proper bed with linen sheets did not become general in peasant households until the early part of the twentieth century.²⁹²

In the older Vasa period, orders often arrived in Finland to send the castle's ryas and other bedclothes to, for example, the castles of Stockholm and Gripsholm. On July 8, 1545, the *fatabur* matron of Stockholm Castle, Margareta, receipted for a load arrived from Häme Castle, which included 10 ryas, 8 red-and-white bedcovers, 5 red-and-yellow bedcovers, 3 black-and-yellow bedcovers, 8 black-and-white bedcovers and 20 gray under-blankets. In 1554, 168 ells of frieze, 295 ells of fine linen and feathers were sent to Stockholm Castle. In the following years, 56 bedcovers, 5 ryas and 18 blankets were delivered to the Royal Estate of Helsinki. In 1562, the commandant of Häme Castle, Erik Spåra, sent his colleague at Rääveli Castle 5 new, white blankets trimmed with black borders.²⁹³ Even in the shipments, the proportion of bedding is pronounced.

Stocking Yarn, Garment Material and Furnishing Fabrics

Gustavus Vasa was quite right in criticizing Isak Banér for neglecting to grow flax and hemp, for neither had been cultivated at the castle. On the other hand, the peasants of Häme grew plenty of flax and hemp, and consequently, these fiber plants were collected as tax at the castle. The greatest part of the hemp came from the castle's nearby parishes, that is to say from the District of Hattula. The fine linen woven by the peasant women was also delivered to the castle. The extensiveness of the weaving engaged in is revealed by the fact that, especially in the 1560s, a great deal of sailcloth, in particular, was sent from Häme to Stockholm.²⁹⁴

Hemp's wide range of usage is a good example of how skillfully the materials were able to be utilized. The greatest part of the hemp delivered to the *fatabur* was hemp thread. The rough hemp yarn was woven in the *fatabur* cottage into so-called sack linen, and the finer hemp yarn into so-called two-shaft or four-shaft tabby, which was used in making the more exacting textiles, such as tablecloths and hand towels. Warp yarn for the ryas was also spun from hemp. Hemp thread was distributed to the fishermen for weaving nets and seines. Hemp, which withstands moisture well, was splendidly suited for these. Shoes were stitched in the shoemaker's shop with hemp thread, and in dipping candles, hemp was used for the wick. The rope and halters needed at the castle were also braided from hemp along with bast.²⁹⁵

Wool stockings were distributed to the servants from the *fatabur*, and for the children both sack linen and frieze for coats, pants and blouses. In 1540, the stable hands each received 11 ells of frieze, and Lasse the shepherd, Perttu the shepherd and Matti the swineherd each 8 ells of frieze for clothing. While the servants went about in their sack linen and frieze clothes, the castle's better-paid professional men, officials and soldiers were dressed in broadcloth, which was part of their annual wage. Their red, black, brown and green broadcloth clothing was easily distinguished from the gray clothing of the servants. The broadcloth obtained for payment of wages was kept in the *fatabur*.²⁹⁶

In the 1540s, the bailiff of Häme Castle bought foreign broadcloth fabric chiefly in Turku. The most popular and highly regarded was English broadcloth. In 1543, 121½ ells of English fabric was paid for with rye and malt, and two years later, 256 ells of red, black, brown, green and gray English broadcloth were bought for 630 marks. Also in 1543, 48 ells of fabric woven in Amsterdam were

procured. In the following decade, the payment of wages was attended to by royal paymasters, who concentrated their procurement of fabrics on Stockholm and Turku. Quantitatively, the most-bought was Brabantine broadcloth fabric and that produced by a few other central European centers of the fabrics industry. In 1556, for example, 96 ells of Brabantine, 78 ells of Stendelsk and 18 ells of English broadcloth were distributed to the people of the castle.²⁹⁷ The English broadcloth was always reserved for the bailiff and the other higher officials because it was still considered to be the best quality. Also, fabric made in the cloth mill of Turku Castle was used in the payment of wages. It was considered of poorer quality compared to foreign fabric, and consequently, Turku broadcloth was not distributed to the highest officials.²⁹⁸

The stock of furnishing fabrics included only 30-50 textiles, of which the largest part was flax and hemp linen tablecloths of various sizes. In safekeeping in the *fatabur* were also woolen bench pillows, as well as woolen wall and ceiling curtains, which were brought out, especially on festive occasions, to introduce some coziness. Decoration of the walls and ceilings with textiles was a general custom in the Nordic Countries in the Late Middle Ages. The castle's black-and-white and red-and-yellow wall hangings were impressive stretched on the wall, for the lengths of these were 12-21½ meters. In the *fatabur* were also found the long, narrow hand towels, which either hung around the servant's neck at banquets or were spread on the laps of diners sitting next to each other. There was in the castle's *fatabur*, to be sure, even some silk among the wool, linen and hemp fabrics, for one hand towel was edged with silk.²⁹⁹

In the early part of Isak Banér's term as bailiff, there were, altogether, about 200 textiles in the *fatabur*, and at the end of his term, the quantity had risen by nearly one hundred, so the king was too severe in accusing Isak of the total neglect of the *fatabur*. Obviously, there would have been room for improvement in the care of the *fatabur*, for during the term of Isak's successor, Herman Fleming, the total number of textiles rose to about 350. The king was right in wondering about the fate of the feathers, for Isak had made no mattresses or pillows from them. Herman Fleming had 7 feather mattresses and 5 feather pillows made in the *fatabur* as the first order of business.³⁰⁰

5.4. Guest Artisans

The turner Niilo made 250 platters and plates for the needs of Häme Castle and taught the hired men to operate a lathe. Knut the mason was paid a wage of 1½ marks for building stoves in the scribe's quarters and visitors' quarters and firing 1500 bricks. Lasse the potsmith repaired pans in the castle's kitchen. Olavi tanned 30 cowhides, from which shoes were afterward stitched for the people of the castle.³⁰¹ Häme Castle's own staff included professionals of many trades. There were, however, tasks in which recourse was made to the help of visiting craftsmen by paying them a wage for performance of a specific contract. The masons, carpenters, leather-dressers, tanners and potsmiths were frequently-seen visitors at the castle. In addition to them, there were visits a time or two, on work of a contract nature, by a joiner, a glazier, a strap maker, a turner, a pan founder, a gunpowder maker, a gunsmith, a sword sharpener and a few other professionals.

In Table 2 is represented the number of visiting craftsmen in the different trades at Häme Castle in the mid-sixteenth century. In Appendix 9, in addition, are listed the visiting craftsmen whose names or places of residence are known. Now and then, in addition to a visiting carpenter, leather-dresser or turner, there was also working at the castle a professional who was regularly engaged in the same trade there. Generally, the visiting craftsmen were professionals, of whom there were none employed at that time on the permanent staff. It didn't pay to keep a carpenter or mason permanently on the payroll if full-time work was not available for him. A visiting craftsman was summoned to work when his professional skill was needed.

Before the turn of the 1550s and 1560s, when the nearly decade-long period of continuous fortification construction began, there were no regular masons at the castle. Thus, a mason visited almost annually. In fiscal year 1529/1530, a mason was paid a wage for building new stoves and a dungeon. As leader of a five-mason work team, the mason Matti built a gate tower in the castle in the summer of 1547. Generally, the visiting masons' tasks included chiefly the building of new stoves and chimneys or the repair of old heating appliances. A more specialized masonry skill was represented in 1546 by the visiting tiled-stove mason Hans, who is the first known master of this trade in Finland. He made one tiled stove at the castle, and only a couple of years earlier, he had made the first known tiled stove in Finland at Turku Castle.³⁰²

Two carpenters built a powder mill in 1542 under the direction of Claes the fusilier, and in 1545, the carpenter Klemetti Lauri's son from the village of Hattelmala was hired to help the gunsmith Olof. A carpenter of Viipuri did joinery work in 1544 on the floor and bins of Häme Castle's granary located in Viipuri. Before 1559, a brickmaker visited at the castle only in 1546, when the brickmaker Per made and fired 3450 bricks, apparently for the gate tower to be built the following year.³⁰³ All in all, building-trades professionals were rarely hired on the permanent staff before the end of the 1550s. The increase in the work functions of building-trades professionals and the permanent establishment of their jobs beginning at the end of the 1550s is treated in the following chapter.

The task of the visiting leather-dressers was to dress the sheepskins and make leather skirts from these for the servants. The tanners, on the other hand, soaked the cowhides in a willow-bark solution, after which they were used chiefly for making shoes for the people of the castle. The strap maker made different halters and straps from leather, which were needed for the horses, cattle and, among other things, binding the loads of goods sent to Stockholm. The itinerant turners, potsmiths and pan founders made the platters, plates, kettles, pots and frying pans for the castle's kitchen. A potsmith who arrived at the castle in 1546 had come from the fief of Kymenkartano. He made two new kettles and mended four broken ones.³⁰⁴

In addition to the tiled-stove mason Hans, one can count a glazier, a powder maker and a gunsmith among the visiting experts in specialty trades. The fusilier Claes was skilled in powder making. In 1542, he made a powder mill and four different grades of powder. The coppersmith Jacob, who poured the powder mill's stamp for the castle's armory, was also hired for the job at the same time. The permanent staff included a gunsmith beginning in 1557. Prior to that, Herman the fusilier made weapons at the castle in 1543, and Olof the gunsmith two years later. Under Olof's direction, one quarter-culverin, one double falcon, two double hooks, 690 pikes and 61 iron bullets were forged for the castle's armory in 1545. The culverin and falcon were long-barreled, small-caliber cannons.³⁰⁵

Window glass began to become common at the end of Gustavus Vasa's period, with domestic production lowering the price of the glass. The data on Turku Castle's first glass windows are from 1530, and Häme Castle's glass windows installed in 1544 were the castle's first, or at least among the first. The glazier Clemet, who had his workshop in Turku and also worked at Turku Castle, made, at that time, four glass windows in the scribe's quarters, one big glass window in the new tower and two glass windows in the ladies' chamber.³⁰⁶ Before this, the window openings of even the best rooms were covered with dressed parchment from sheepskin or calfskin. Window glass was, however, brittle, and so, in a storm, the window openings still had to be protected

Table 2. The Numbers of Visiting Craftsmen at Häme Castle During the Years 1540 - 1569...

	1540	1541	1542	1543	1544	1545	1546	1546/47	1550/51	1551/52
mason	1	1		2	1		2	5	1	1
strap maker	1					1				
leather-dresser	1	1	1	1	1	1	1			
turner	1			1	1	1				
tanner	1			1		1	1			
powder maker			1							
coppersmith			1							
cooper			1							
gunsmith				1		1				
potsmith				1			1			1
carpenter			2		1	2				
wheelwright					1					
glazier					1					
blacksmith						1				
"brygegwtäre"						1				
brickmaker							1			
fuller										
joiner										
cutter										
sword sharpener										
Total	5	2	6	7	6	9	6	5	1	2

by wooden shutters. A glazier visited the castle the next time in 1558, when the master Mats installed 86 lead-framed glass panes and fixed the broken panes. The glazier in question was possibly Mats Jönsson, who was engaged at Turku Castle in 1568 as permanent glazier. He remained in this capacity all the way to 1599, and visited Häme Castle at least in the years 1576, 1579, 1582 and 1586.³⁰⁷

The specialty craftsmen, such as the gunsmiths, the tiled-stove makers and the glaziers, commanded, at the time, new and sought-after professional skills. They circulated about the country in the service of the Crown, and they usually arrive in Häme from Turku, where the innovations had first become established. The greatest part of the visiting craftsmen at the castle was, however, from Häme. There were peasants in the province who sought additional income in handicraft.³⁰⁸ In Sääksmäki's village of Ritvala lived leather-dressers. In 1546, the leather-dresser Niilo from Ritvala's Vanhala dressed 110 sheepskins and, from these, made 90 leather skirts for the people of the castle. His father, Jussi Niilo's son, had already been a leather-dresser. Also, Niilo the tanner, who was a native of the village of Järviöinen, worked at the castle as needed. Particular reliance was placed, at the castle, on the professional skill of the mason from Pälkäne, Ragvald Antti's son. In 1544, he worked on the stoves and chimneys in the servants' quarters and on the landed estates. After a couple years, he was at the castle repairing the baking oven. Ragvald was a farmer in Pälkäne's Onkkaala.³⁰⁹

5.5. The Construction of the Gun Towers

The development of firearms, and especially of artillery pieces, from the fifteenth century on, changed the nature of warfare in Europe. The builders of fortifications had to resort to new defenses. Even in Finland, the castles had, already at the end of the fifteenth century, been changed from quadrangular towers to more durable round towers. The castle Olavinlinna is an excellent example of this. Round towers were also built in Raasepori and Kuusisto. Artillery, however, continued to develop, whereupon the defensive towers became lower and more massive than before. The new, sixteenth-century type of round gun tower was called a rondel. The rondel was a thick-walled, generally three-level, tower, in which the intermediate floors were usually of wooden construction. There were batteries on all levels. Built into the corner of the castle just right, it considerably increased the effectiveness of even an old castle's firepower. The real period of construction and modernization of Sweden's fortifications began in the 1540s. In the aftermath of the Dacke Rebellion (1542), Gustavus Vasa feared domestic and foreign unrest. He trusted the castles to provide protection in the face of the threat. Rondels were built in Kalmar, Nyköping and Stockholm Castles. A new castle fulfilling the modern requirements was built at Vadstena. The first rondel in Finland was constructed during the years 1547-1550 for the protection of Viipuri city wall's Karjaportti. This "Round Tower,"

...Table 2. The Numbers of Visiting Craftsmen at Häme Castle During the Years 1540 - 1569

	1552/53	1553/54	1554/55	1556/57	1557/58	1558/59	1559/60	1560/61	1561/62	1568/69
mason	1	1	1	2	1	17	4		2	
strap maker							1		1	
leather-dresser										
turner										
tanner						1	1			
powder maker										
coppersmith										
cooper										
gunsmith										
potsmith	1	1					2	2		
carpenter		1		1	6	1		1	20	
wheelwright										
glazier					1					
blacksmith										
"brygegwtäre"										1
brickmaker						1	1	5		
fuller				3						
joiner					1					
cutter						1				
sword sharpener									1	
Total	2	3	1	6	9	21	9	8	24	1

which has been preserved to the present day, is well known to Viipuri's visitors. Subsequent construction continued from the border toward the interior. Olavinlinna's and Häme Castle's first rondels came into being at about the same time during the years 1559-1560 under the direction of the same builder. The foundation work for Häme Castle's second rondel was begun in 1563. A rondel was built in a corner of Turku's new castle yard during the years 1568-1574. Upon conquering Käkisalme, the Swedes even built a round gun tower there during the years 1586-1587. Häme Castle's rondels belonged, thus, to the middle stages of the series.³¹⁰

The East Prussian Henrik von Cölln had at one time arrived in Sweden as a commander of mounted troops. Apparently, his professional skills also included a command of architecture and fortification technology because Gustavus Vasa summoned Henrik into his service upon hearing of his participation in the fortification work at Kalmar. We know of Henrik's working at Strängnäs in 1556 in the court of Duke Eric. Two years later, he entered the service of Eric's younger brother John at Turku Castle, from which he was soon appointed director of the work in Häme and Olavinlinna. The very first thing Henrik did was meet at Häme Castle with the master mason Staffan Olsson, who served the following summer, accordingly, as master on the construction site of the gun tower. This time, Staffan had time to stay at the castle only a week, Henrik remaining on the site to organize the procurement of construction materials and a labor force so that construction work on the rondel could begin in the spring.³¹¹

After a few weeks, that is to say in the next-to-last week of April, 1559, the master mason Staffan arrived again at Häme Castle with his men and gradually the tower's masonry work got underway. The first rondel was built in the eastern corner of the curtain wall, on the side toward Vanaja Waterway (Fig. 11 p.130). There were 10-13 masons at work on the construction site at a time, and altogether 16 masons in addition to Staffan participated in the work during the summer.³¹² Along with the masons were their apprentices, who mixed the mortar, erected new scaffolding as the work progressed and hoisted the stones onto the scaffolding within reach of the masons. Also, their own part on the gun tower's construction site was reserved for the peasants of Häme. They participated in the construction as *corvée*, and, in addition, they took care, in part, of the delivery of materials. In the castle's brickoven, bricks were fired for the gun tower. They were not, however, sufficient for the entire need, and consequently, even the peasants of Häme had to

make bricks in their home regions. From all over the province were delivered to the castle 6929 bricks, 644 barrels of lime and 6420 loads of granite, of which fully 3564 loads were brought all the way from Hollola and its surrounding parishes. The District of Hollola's great amount of granite was affected by the fact that the obligation of the peasants of this district did not include the delivery of bricks and lime to the castle. Several subsequently well-known quarries were already in use in the Middle Ages. Lime was brought to the castle in the mid-sixteenth century at least from Janakkala's Ridasjärvi.³¹³ The building of the tower also brought other building-trades professionals to the site, such as Heikki the brickmaker, Lasse the joiner with his apprentices and a carpenter, who worked nine weeks at the castle.

The maintenance of the growing number of people required additional quartering and household space. During the year, 12 cottages and 3 cabins rose alongside the castle. The masters of the castle's landed estates surely also participated in the construction work, for all three are mentioned as being carpenters. Stoves and chimneys were built in the new structures. Lasse the joiner made window frames in them and furnished the rooms with chairs and beds. He had arrived as a visiting craftsman at the end of 1558, and he remained, with his men, at the castle, staying on the payroll all the way to the mid-1560s. The blacksmith's pace of work was also now fast. During the year 1559, 5 firewood axes, 8 large and small stone sledges, 2 lime-mixing irons and 15 masons' trowels were made in the shop.³¹⁴

The work went on the whole summer, and at the beginning of September, the gun tower's construction site became quiet. The last of the group to leave the castle was Henrik von Cölln, who was responsible for the work. The weather was already so cold and damp that the masonry work could no longer continue. Everything also indicates that the gun tower was gotten finished during the summer of 1559. Construction on it was not continued during the following summers. Granite was, indeed, delivered to the castle and additional bricks were fired in the castle's brickoven, but both the granite and the greatest part of the bricks were stored for future construction projects.³¹⁵

In the longer-range plans was continuation of the fortification work by building a second gun tower in the western corner of the curtain wall.³¹⁶ A new brickoven was built in the vicinity of the castle in 1560 for making bricks. There is no information, however, on its exact spot. In addition to a firing oven, there was, at the place of manufacture, a brickbarn for drying the cast bricks. The necessary clay was dug from the brickbarn's neighboring clay pit. Bricks

had, to be sure, been made before, especially in the early part of the 1540s. At that time, 3500 bricks, at most, had been cast in a year. In 1560, fully 538,380 bricks were fired during the summer, and 60,000 bricks were made in 1566.³¹⁷ The peasants had to perform their *corvée* in the castle's brickbarn, and it was also their task to haul the finished bricks to the castle's construction site. In addition to the *corvée* workers, professional brickmakers and burners were also hired for the job in the 1560s, both for year-round and shorter employment. Also, the masons' professional skills included that of firing bricks: upon completing the brickoven in 1560, five masons remained another ten weeks firing bricks. Lime was also needed for the increased construction activity. Nearly every year in the 1560s, the peasants had to work at the lime mountain, as the castle's limestone quarry was called, quarrying and firing lime. Henrik the limeburner had been hired as their foreman in 1569, and at the beginning of the decade, also, their staff included a limeburner. There is no information on the exact location of the lime mountain. There are limestone quarries in the vicinity of the castle at least in Pälkäne's village of Äimälä and in Saarioinen, near Kivijärvi.³¹⁸

Foundation work was begun on the new, western gun tower in the summer of 1563. Real construction work didn't get underway, however, until two years later. This time, the responsible master builder from the foundation stages on was the country's leading master mason, Staffan Matsson. At the same time, he also worked at Turku Castle, which was his main workplace. In addition to the gun tower, a new curtain wall was also built, and consequently, over two year's time, the work consumed fully 180,000 bricks, 18,366 loads of granite and 9600 barrels of lime. Again, the largest quantities of granite had to be hauled to the castle from the easternmost parishes of Häme. The masonry work on the new gun tower and the curtain wall attached to it was still in progress at the end of the decade.³¹⁹

The masonry work, which continued through the end of the 1560s, reveals that the number of regularly-employed masons grew. Beginning with the construction of the first gun tower, one encounters in the payrolls, in addition to the regular masons, the fact that the large projects still took visiting masons. Were the masons local professional men or itinerant professionals in the employment of the Crown, part of whom was foreigners? During the years 1559-1569, there were 32 different masons working at Häme Castle, 12 of whom worked at the castle several years.³²⁰ Staffan Olsson, who served as the mason in charge on the work site of the first gun tower, was still in the castle's service even ten

years later. His work partner, Erik Ragvaldsson, also had a long career at the castle. Henrik Larsson, who came from Turku in 1563 with master builder Staffan Matsson, worked several years at the castle. The real master builders were from distant places: Henrik von Cöllen was an East Prussian and Staffan Matsson a native Swede.³²¹ Certainly, some of the masons, too, were skilled specialized professionals, who traveled about in the service of the Crown. The Crown had several construction sites in progress in the mid-sixteenth century, and so there could have been a shortage of specialized professionals. One can well presume that a large part of the masons working at the castle was composed of local experts.³²²

Professionally skilled masons were certainly to be found in Häme. In the early part of the sixteenth century, Klemetti the mason worked in the District of Sääksmäki. He apparently lived in the village of Ritvala, and, according to Niitemaa, Klemetti participated in the construction of the churches of Sääksmäki and Pälkäne. During the same time, a peasant called Tiili-Pieti (Brick-Pieti) also worked in Ritvala, who possibly supplied stone to Klemetti from his brick works. The mason from Pälkäne, Ragvald Antti's son, visited the castle in the 1540s, making stoves. The skills were known in the province for making bricks and for stove and chimney work. The height of stone-church building was on both sides of the year 1500 in Häme, but it continued, waning, to mid-century.³²³

The gun tower's construction period is an excellent indication of how the Crown's construction activity brought work opportunities to the professionals of the different trades. On the other hand, the needs of the Crown furthered professional specialization. During the course of the 1560s, there were engaged at the castle carpenters, a joiner, a glazier, masons, brickmakers, limeburners and their men. The castle's own production of construction materials was upgraded by building a new brickoven and beginning the quarrying and firing of lime. It was also attempted to make their own sawing operations more efficient. In 1560, a saw iron and sawmill blade were forged. According to Voionmaa, one of Finland's first water-powered saws, or sawmills, was at Häme Castle. The location of the sawmill is, unfortunately, unknown. One possible location, of course, is at Kuninkaan mylly (the King's Mill), where even the castle's grain was ground by waterpower (Map 2). The saw logs felled by the castle's men were sawed into floor planking and beams. The sawmill was improved in mid-decade, and in 1565, 100 planks, 91 beams and 100 boards were cut for the gun tower's construction site.³²⁴

6. The Overseers of the Crown's Interests

6.1. The Bailiff and His Assistants

The Castle Bailiff

Isak Nilsson Banér, who belonged to Gustavus Vasa's circle of relatives, served as bailiff of Häme Castle during the years 1540-1553. This was the longest period in this function in the sixteenth century. Nils Eskilsson Banér's son Isak was a native of the estate of Östra Husby Skenäs. Initially, Isak received his upbringing in Denmark, and he transferred into the service of Gustavus Vasa's father-in-law, Duke Magnus, in Saxony-Lauenburg in the early part of the 1530s. Gustavus Vasa separated Isak from service as bailiff of Häme Castle for obscurely expressed reasons. A few years after his separation, however, Isak Nilsson participated with the king's troops in the Russian War (1555-1557). In 1564, he led a diplomatic delegation in negotiations with Russia at Dorpat. Apparently for political doubts arising out of this, the generally suspicious King Eric condemned Isak to death in 1565. He was, however, pardoned and appointed envoy to Russia. The king's change of mind is also revealed by the fact that, two years after the death sentence, Eric XIV presented Isak with the office of judge of the District of Sääksmäki. Isak, however, did not return to Häme. He merely enjoyed the yield of the office, a deputy taking care of the court circuits. Before his death, which occurred in 1589, Isak Nilsson also managed to serve as Councilor during the years 1569-1573.³²⁵ The stages of Isak Nilsson's life illustrate well how the Crown's highest officials were transferred from one function to another in Finland and Sweden. Now and then they could fall into disfavor and even be sentenced to death. Historical research long supported the conception of thieving, peasant-oppressing and rootless bailiffs moving from one function to another until Renvall clarified the depiction of them. He showed that the bailiffs settled, usually after short-lasting periods of service, into new functions that were advancements in their careers. The Crown had so few officials capable in their jobs that there were none to spare.³²⁶

Erik Spåra, who served as bailiff at Häme Castle during the years 1562-1565, represented the Finnish nobility. He was born in Naantali in the estate of burgesses, from which he very quickly

rose to become a member of the nobility. He took his university studies in Rostock. A marriage transaction with the heiress of Hauho's Hyvikkälä estate, Gertrud Gudmund's daughter, brought him to Häme. Erik Spåra served Häme Castle's bailiff as bailiff's attendant at the turn of the 1520s and 1530s already. After this, he served Gustavus Vasa and Eric XIV in many roles in Sweden, Finland and Tallinn, among others in the bailiff functions of Savo, Porvoo and Raasepori. During the years 1550-1551, he was involved in establishing the Royal Estate of Helsinki. His responsibility in 1560 was to collect the silver articles of Finland, with the purpose of covering the expenses of King Eric's English trip. He wanted to spend his old age in his home province of Häme, and so command of the castle suited him very well. Since the days of his youth, he had, as the province's leading nobleman and as judge of the District of Hattula, often visited the castle. In 1548, for example, he supervised preparation of the castle's inventory along with Björn Klau's son of Lepaa and Jöns Vestgöte. Erik Spåra died during his period as bailiff in the fall of 1565.³²⁷

The king himself appointed the bailiffs of the local administrations to their office. There were no real regulations for the bailiffs yet in Gustavus Vasa's time. Instead, the king often sent his bailiffs, jointly and personally, letters, in which he intervened, even very minutely, in the affairs of the bailiwick. The bailiwick was to be taken care of like one's own fief.³²⁸ As representative of the royal power, the bailiff of Häme Castle was responsible for the execution of the orders of the public authority in his castle fief. The demands on the bailiff, thus, were intense so that the reforms pursued by the king should be realized. Responsibility for the districts was transferred, from the end of the 1540s, to their own bailiffs, whose superior the castle bailiff continued to be. The castle bailiff's most important function was to be responsible for the collection of taxes and their accounting. He had to look out for the Crown's economic interests and increase the economic activities of his fief. It was necessary to keep an eye on the financial management of the peasants so that their tax-paying ability should not be compromised. There were additional mills and drying barns to be built in the castle fief, hop gardens to be planted, mines and saltpeter boileries to be established and fishing to be increased. Responsibility for the castle fief's roads, bridges, inns and organization of postal delivery belonged to the bailiff. Travelers moving in the area of the fief had to be observed, and vagrants had to be employed. The bailiff had to look out for the king's interests in the courts, which chiefly meant securing the fine monies for the Crown. He, thus, had

very diverse administrative and economic functions. He does not appear to have had real military rule, but it was up to him to take care of the quartering and provisioning of the armed forces moving in his area.³²⁹

In the mid-sixteenth century, the designation *fogde* was generally used for the bailiffs of Häme Castle. Only Erik Spåra was called by the appellation *hövitsman*. This meant that he had the power to use the castle's military force. Along with his fief, the bailiff had to look after the castle entrusted to him. The castle was not to be let fall into decay, and there was to be the necessary number of squires for its security. The staff was to be sufficient that the work could be managed as long as possible with its own efforts. Superfluous persons were not, however, to be maintained, so that the Crown should not be caused excessive expenses.³³⁰

*The bailiffs of Häme Castle during the research period were.*³³¹

1540-1553	Isak Nilsson (Banér)
1554-1555	Herman Fleming
1555-1561	Jöns Brun
1561-1565	Erik Spåra
1566 together	Henrik Jakobsson (Tavast) Anders Jönsson Jakob Sigfridsson
1567-1568	Tönne Olofsson (Wildeman)
1569-1570	Kristoffer Blome

Of the bailiffs, Isak Nilsson represented the Swedish nobility and Jöns Brun was obviously of Danish descent, and so the proportion of the domestic nobility in the bailiff functions at Häme Castle was large. Henrik Jakobsson was lord of Hauho's Kokkala, Anders Jönsson lived in Juttila and Kristoffer Blome came from Piiloinen. Even after Erik Spåra, thus, the castle's bailiff functions were well taken care of by local talent. The bailiff trio of 1566 also included Jakob Sigfridsson, who had served as castle scribe since 1559. Truly nationally prominent persons were no longer appointed commandant of Häme Castle. Generally, the bailiffs belonged to the lower nobility, for whom working in the service of the Crown guaranteed a stable livelihood. In addition to the production of their own farms and enfeoffment incomes, the cash wage and payments in kind of the Crown guaranteed the bailiffs a good living. Cash reserves were often sufficient for investment in landed property.³³²

Control of the Bailiff's Activities

Gustavus Vasa sent harsh letters to Isak Nilsson starting at the end of the 1540s, in which he criticized the bailiff's actions. The peasants of Häme had complained of the bailiff's selling them grain at entirely too dear a price. Angry at this, the king wrote to Isak, forbidding him to treat his poor subjects badly. Dissatisfaction was not to be spread among the peasants.³³³ The criticism of Isak reached its climax in the letter written in Västerås on January 27, 1552.³³⁴ After the letter's preliminary formalities, the king went to the heart of the matter: "We have noticed, Isak Nilsson, that there at Häme Castle little attention is being paid to animal husbandry, such as the butter produced by the cows, the cheese produced by the sheep and the wool obtained from the sheep, as well as the condition of the calves, the lambs and the piglets. The impression gotten of these does not please Us. . . . You are to pay more attention to the aforementioned stockbreeding. . . . You cannot let your own stockbreeding interfere with Our stockbreeding, which We have believed to be your duty."

Having criticized the stockbreeding, the king moved on to the *fatabur*, where he found much neglect.³³⁵ Fault was also found with the unnecessary consumption of tax candles at the castle, for the castle was to get by with the candles it made itself. The needed butter was to be produced likewise. Isak Nilsson was obliged to buy lynx and fox skins as well as moose hides for the king. In addition, the king wrote, "Unnecessary persons are not to be lodged at the castle at Our maintenance. Necessary persons boarded at the castle's upkeep are to be enumerated in writing weekly, by name. Nor is the inventory to be jotted down haphazardly, as has been done heretofore."

From Gustavus Vasa's letter emerge stiff requirements placed on the castle bailiff for the development of the castle's economy. The letter also reveals how closely the activities of the bailiffs were controlled for increasing the effectiveness of the administration. Had Isak Nilsson really handled his bailiff's duties so badly, or was there a dramatization of the situation in the tone of the letter? A comparison of the accusations presented with the facts reveals that, on the one hand, there was matter for criticism and, on the other, the king exaggerated in his accusations. Clear to the latter part of the 1550s, the average annual amount of butter produced at the castle was 2 Stockholm *lispund*/cow, which was average for Finland. After the founding of the landed estate of Hätilä (in the year 1557), butter production clearly increased and covered the castle's own consumption. Cheese was not made at the castle,

and wool production remained below the average for the country: on the crown farms of Sweden, an annual average of 2 *nål* of wool was sheared per sheep, and at Häme Castle, a production of 1 *nål* was usually reached. There was experimentation on other farms with increasing production with the aid of foreign breeds of sheep. Some English rams were delivered to Häme Castle from Turku Castle as breeding stock in 1554, or not until the period of Isak's successor.³³⁶

Neither hemp nor flax was planted for the needs of the *fatabur*. In any case, the weavers made textiles in the *fatabur* annually, not only for the castle's use but also for that of the other crown establishments. The population of the castle had not essentially changed from the situation of the previous decade, and so unnecessary persons were certainly not a great problem. Preparation of the weekly list of persons that the king required had, indeed, been let slide. Had he wished, the king would have been able to find even commendable economic management. Good crops had been gathered from the castle's fields throughout the 1540s, and the first rye crops of the 1550s were 10- and 12-fold. Animal husbandry was clearly the place in the economy where there would have been room for improvement. On the other hand, the weak productivity was a common problem on all the Crown's farms: the optimistic production goals established by the Crown were rarely achieved.

In any case, the king's letter indicated the lack of confidence that had arisen between Isak Nilsson and Gustavus Vasa, and in 1553, Isak had to give up his bailiff function. Although the king required the bailiffs to care for the castle as their own estate, Isak had apparently begun to exercise excessively arbitrary exceptions during his long career as bailiff. How was the king, who had never visited Häme Castle, able to be so well in the know concerning matters at the castle? The king wrote the abusive letter to Isak Nilsson in January, 1552, and only two months earlier, in November, 1551, Häme Castle's scribe, Simon Nilsson, had visited the court. Could Simon Nilsson, at that time, have presented criticisms of Isak's activities? Simon's complicity is indicated by the fact that he is not mentioned as Häme Castle's scribe during the year 1552. Two years later, when Isak Nilsson had left the castle, Simon again served as castle scribe. Apparently, Simon Nilsson had drawn up a list, appended to the 1553 accounts for Häme Castle, in which Isak Nilsson's wrongdoings were compiled. These were in broad outline the same as the defects mentioned in Gustavus Vasa's letter.³³⁷ In addition to the information obtained from Simon Nilsson, the king had, certainly, familiarized himself

with the previous years' accounts for Häme Castle in the accounting chamber.

Nor were the later bailiffs spared from criticism. Jöns Brun was dismissed for practicing illegal rural trade. The auditors of Häme Castle's 1565 accounts criticized the experienced administrator Erik Spåra: "At the castle and on the landed estates would have been 22 maids and men and prisoners and others, who would have been able to help in field tilling, hay making and seeding. It would not have been necessary to use *corvée*. For gathering a load of hay, 7 *corvée* days have been used, when 4 *corvée* days should have sufficed." A defect was seen in the chaplain's salary: "The castle's chaplain, Master Erik, has been paid an annual wage of 30 marks, a 16-mark cloth allowance and maintenance, and in addition, Erik Spåra has paid him 20 *spann* of grain. This is not advisable, because, on the other crown estates, nothing but annual wage and maintenance are paid." Erik Spåra had also sold some furs that should have been sent to the king's fur chamber. He had personally handled functions belonging to the king's paymasters and had not ordered the men to make firewood.³³⁸ The preparation of the Crown's economic accounts and their examination were developed, in particular, during Gustavus Vasa's period, and the accounts gave the king an excellent possibility for controlling his economic activities.

Other Civil Staff

In addition to the castle bailiff, the highest group of the official staff included the castle scribe, the underbailiff, the assistant scribe and the chaplain. Generally, the bailiff got to select his staff himself, and it was customary that, when there was a change of bailiff, the other staff was also changed. This kind of clear relationship, however, is not found at Häme Castle. Simon Nilsson, who became scribe in the middle of Isak Nilsson's term, still continued as scribe during Herman Fleming's service. During the years 1552 and 1553, he was off the castle's payroll. One might wonder whether the reason was the conflict between him and the bailiff that was treated previously? At the beginning of Jöns Brun's term, the castle also got a new scribe. The scribes were changed frequently at the end of the 1550s until Jacob Sigfridson began in the function, in which he served during the time of Erik Spåra and his successors all the way to 1570. In 1566, he also attended to the bailiff functions together with Henrik Jakobsson and Anders Jönsson. During the years 1563 and 1564, Jacob Sigfridson also took care of the accounts of the District of Hattula. It was usual during Gustavus Vasa's time that the central castles

were also responsible for the bookkeeping of the nearby bailiwicks.³³⁹

Häme Castle's scribes during the years 1539-1570,

Bertill Jönsson	1541-1547
Simon Nilsson	1547-1551, 1554-1555
Morthen Jönsson	1552
Jöns Svenske	1553
Pedher	1557
Tomas Bertilson	1558
Jacob Sigfridson	1559-1570

The castle bailiff needed the king's consent for the selection of the castle scribe, for the scribe's function was not insignificant: mastery of accountancy required great professional skill, and upon need, the scribe was stand-in for the bailiff (Figs. 12-13 p.131). By class, the king's scribes were, generally, trained commoners, lower nobility or clergy. In a society bound to a strict division of classes, work in the service of the Crown guaranteed the scribes the possibility of social rise. Despite the good wages of the scribes, a clear social difference prevailed between the scribe and the bailiff: the scribe was the castle's number-two man, who, as need arose, represented the bailiff.³⁴⁰ The wages also reveal the scribe's position between the bailiff and the other officials. In 1552, for example, the bailiff Isak Nilsson was paid an annual wage of 40 marks cash and 8 ells of broadcloth fabric. The scribe Morthen's wage for the same year was 30 marks and 6 ells of broadcloth. The underbailiff and assistant scribe were clearly beneath him, for they each received 20 marks and 6 ells of broadcloth. In the mid-1560s, the cash wage's part of the highest officials' annual wage was as follows: castle bailiff 100 marks, castle scribe 60 marks, assistant scribe, underbailiff and chaplain each 30 marks. Although the bailiff's and scribe's wages, in particular, rose over the years, a relative difference in wages was maintained between the different groups.³⁴¹

The scribe's most important task was keeping the castle's accounts. For the enhancement of control, the accountancy was technically advanced, which placed demands on the scribes. Nor was it sufficient that the castle scribe took care of the accountancy as well as possible. He, also, along with the bailiff, had responsibility for the account up to the point where it had been examined in Stockholm's Royal Accounting Chamber. Neither the bailiff nor the scribe could leave unexamined

accounts to his successor. The greatest part of the accounts preserved from the sixteenth century is in the form of transcriptions in the accounting chamber of Stockholm Castle that are written in practiced handwriting, following a uniform model. In addition, it is very often narrated at the beginning of the account when it was examined in Stockholm and who performed the examination. According to the Chamber Regulations of 1541, the bailiffs had to deliver their accounts to Stockholm annually for examination by a deadline. The examination period for the bailiffs of Finland was the period between Midsummer and Martinmas (November 10).³⁴² The annually recurring audit afforded the king better possibilities for following the economic management of his bailiffs, and the exact audit times shortened the duration of the bailiffs' trips. The bailiffs' waiting period in Stockholm was, in the king's opinion, an unnecessary hanging around at the Crown's expense.

Häme Castle's accounts were examined in Stockholm generally a little less than a year after the end of the fiscal year. Usually, the bailiff went on the trip, but the scribe could also look after the accounts and their pertinent receipts on the way to Stockholm. It is difficult to judge to what degree of completion the scribes took the accounts prior to leaving on the trip. Very few entries can be identified with certainty as the castle scribe's doing. Not a single entry can be found in Häme Castle's accounts for the years 1539-1571 that one would be able to say with one hundred percent certainty was written at Häme Castle. In three cases, however, there can be, on the basis of handwriting, writing style and subject matter, a question of an account entry written on the spot at Häme Castle. In addition to the copied versions, other versions of the accounts of 1541 and 1542 are kept in Stockholm, the unclear handwriting and unsystematic form of which would point to copies in an earlier version. In the supposed versions of Häme Castle's scribe, in addition, can be seen an archaic bookkeeping style: Roman numerals are alongside Arabic numerals and the dates are entered in accordance with the saints' festivals. Roman numerals were no longer used in the accounting chamber of Stockholm Castle, and only the most important church holidays, such as Michaelmas, were mentioned.³⁴³

In broad outline, the subject matter is completely the same in both account versions for the years 1541 and 1542. Presumably, the versions made on the spot relate the same matters, however, in more detail and with better knowledge of local conditions than the accounting-chamber versions. It was written in the accounting chamber that 278 ells of frieze were

woven at Häme Castle in 1542. The castle scribe had originally represented the matter thus: 9 *lispund*, 5 *nål* of wool were spun on the landed estate of Ojoinen, from which 136 ells of frieze were woven, and 9 *lispund* of wool were spun on the landed estate of Saarinen, from which 142 ells of frieze were woven. In addition, a list from the year 1545 is found of persons who bought grain from the castle. The buyers were peasants from the surrounding area and professional people of the castle. In careless handwriting, the buyer's name and home village or possible profession has been written on the list: Morten Torkilson from Nihattula and Frans Madsson from Hätilä.³⁴⁴ The castle scribe and his assistant had to make notes throughout the year in order to be able to prepare the account. How complete they made the accounts from these before the trip to Stockholm is, however, not certain.

In practice, the assistant scribe and the copyist were the scribe's helpers in the paperwork. All the most routine tasks belonged to the copyist, whose wage was less than that of the assistant scribe. Perhaps the copyists were some of the persons who had to inventory the food stores and cellars. The weekly food-consumption lists required by the king had to be drawn up with exactness of the beer barrels, salted ham and beef tongue. They also made the name lists when the leather moccasins were distributed to the castle's servants on shoe-wage payday. Preparation of the weekly person-list for the often nearly two hundred diners at the castle was also a big job. In the 1550s, there were 1-2 copyists engaged. At least some of the copyists were squires of the castle, of whom the most capable, thus, got to serve as the scribe's assistants. Michil Nilsson, who worked as copyist during the years 1542-1544 and 1547, belonged, in the intervening years, to the castle's group of squires. In the following decade, there is no mention of a copyist. Instead, the function of assistant scribe appears to have become established.³⁴⁵

During Isak Nilsson's time, only the assistant scribe Simon worked at the castle during the years 1545 and 1547. Possibly, the assistant scribe Simon was the castle scribe Simon Nilsson, who attended to that function beginning in the latter part of 1547. The rise from the assistant scribe's spot to castle scribe was unusual in the local administration of the sixteenth century. It was more usual that the assistant scribes moved, seeking additional experience in the service of the military administration, the nobility and the administrative districts. After this, they could return to the functions of castle scribe. Yrjänä Olavi's son served as assistant scribe for several years during the 1560s (1563-1568). His successor,

Martti Lauri's son (Morthen Lutterus), performed a long period of corvée at Häme Castle. In the early part of the 1550s already, he served as a castle squire. In 1566, he was appointed underbailiff and, in 1569, assistant scribe.³⁴⁶

Monitoring of the castle's internal order belonged to the underbailiff. The position does not seem to have been particularly sought after because the underbailiffs changed often, the periods of service remaining short. The only exception was Knut Knutsson's service, lasting from 1559 to 1562. Knut also had a hired man as his helper. During the years 1540-1552, six different persons handled the underbailiff's job, and five of them came to his function from the castle's group of squires or bailiff's attendants. Also, Jören Olsson, who handled the underbailiff's job in 1563, was a former squire of the castle. In giving up his job, the underbailiff did not necessarily leave the castle. He could still work several years in the service of the castle as a bailiff's attendant or squire. A return to the underbailiff's position was also possible. Jöns Staffansson was in the post during the years 1544-1545, 1554, 1558, 1565 and 1566. At the castle Olavinlinna, the underbailiff was, in regard to his position, equal to the castle scribe.³⁴⁷ The underbailiff's position was not as significant at Häme Castle. The castle scribe's wage was clearly better, and the scribes' long terms of service guaranteed them a more stable position than that of the underbailiffs.

Catholic customs did not fall into disuse immediately, although Sweden officially became a Lutheran country in the early part of Gustavus Vasa's reign. The first indication that the Reformation had been achieved in Häme was that from the early part of the 1530s on the churches of Häme and the castle's chapel had to surrender their most valuable items to the Crown. The most important aspect of the Reformation was changing the divine service into the vernacular. This was carried out even in Sweden only after the Council of Uppsala (in 1536) and in Finland only when Agricola had gotten his most important church handbooks translated into Finnish at the end of the 1540s. Agricola is known as a moderate reformer, and so it is to be expected that the Catholic customs long remained unchanged.³⁴⁸

Despite the Reformation, the year continued on at the castle in accordance with the festivals of the saints. The shoe allowance was paid on Michaelmas and Saint Martin's Day. Preparation of the inventory was begun on Saint Bartholomew's Day. In 1550, people fasted at the castle from Shrove Tuesday to Easter. In his prayer book of 1544, Agricola exempts from fasting only "the sick, the pregnant, the nursing, the children, the afflicted, the poor, the

decrepit and the pilgrims.” Häme Castle also had its own chapel. Its equipment at mid-century reveals, however, an unpretentious house of God, from which the valuables had been delivered to the king’s silver room. On Duke John’s visit in Häme in the summer of 1556, he was given 2 gilded monstrances and 2 small gilded crowns from the castle’s chapel as a gift. In addition, the duke received from the church at Pälkäne, as well as the church at Renko, a silver sanctuary lamp.³⁴⁹

In Häme Castle’s chapel in 1541 were 1 small silver monstrance, 2 Communion cups with patens, 1 gradual, 1 silver crown of thorns, 1 small silver crown, 1 small silver sanctuary lamp, 2 vestments, 3 pairs of frontals, 1 tapestry, 1 cushion cover, 2 missals, 2 tin flasks, 2 small brass candlesticks and 1 small seven-branched iron chandelier, and 2 small bells.³⁵⁰ The monstrance was a stemmed receptacle, in which the consecrated wafer was kept. The wine was drunk from the Communion cup. With the chalice was a paten, or wafer dish, which was often designed as a chalice cover. Besides protection for the altar, the frontals were also used as cover cloths for the monstrance and Communion cup. The gradual contained the Catholic liturgical melodies, and it could be a very beautiful book decorated with miniature paintings. On the wall of the chapel was hung a patterned, though to be sure an already slightly worn, tapestry, which also protected against chilliness from the drafty wall. The candles, and the sanctuary lamp hung in front of the altar, in which burned a so-called eternal flame, lighted the chapel. When it was desired to warm the chapel, pans filled with glowing coals were carried inside.³⁵¹

In the mid-sixteenth century, there was a regular chaplain engaged at the castle. The annual wage received by the chaplain, which was 20 marks and a 12-mark cloth allowance or 6 ells of broadcloth in the 1540s, for example, was in the same category with those of the underbailiff and assistant scribe. The size of the wage reveals his serving full-time in his duties. Master Eskil, who preached part-time at Olavinlinna, received an annual wage of only three marks in 1545.³⁵²

Häme Castle’s chaplains during the years 1540-1570,

Master Bertill	1540-1541
Master Jöns	1542-1550
Master Eskill	1550-1554
Master Pedher	1557
Master Hans	1558-1562
Master Ericus Benedicti	1562-1569

The castle’s chapel was associated with the Vanaja Church. The castle, among others, paid the Vicar of Vanaja in rye and barley for the performance of his services. In 1560, Vanaja’s Master Henrik was given 20 *spann* of rye because he preached at the castle and took care of the wine and consecrated wafers. Even the Vicar of Vanaja, thus, preached at the castle, although its own chaplain, Master Hans, was engaged at the castle.³⁵³ At the beginning of the 1570s, the functions of the Vicar of Vanaja and the castle’s chaplain appear to have been combined, for the castle’s long-time chaplain Master Ericus Benedicti tended the duties of both at that time. In the summer of 1569, Master Ericus had also sat, in connection with the courts, at Pälkäne and Kulsiala with the castle bailiff, so he had progressed well in his career. In 1565, the royal auditors criticized the bailiff for the fact that the castle’s chaplain had been paid, in addition to the annual wage, cloth allowance and maintenance, 20 *spann* of rye. Grain was not, at the other castles, part of the chaplain’s wage. The extra rye wage for Master Ericus was explained by the fact that preaching in both Finnish and Swedish caused the chaplain a lot of extra bother.³⁵⁴

The Bailiff’s Attendants and the Squires

In the payrolls of Häme Castle is distinguished the group of men belonging to the bailiff’s inner circle, to whom are not given more exact professional designations. With the aid of wage comparisons, one can divide the group into two and call them bailiff’s attendants and squires. The bailiff’s attendants assisted the bailiff in administration by, among other things, accompanying him on inspection tours of the castle fief. They also served as foremen on various transport and messenger functions. The squires formed the castle’s permanent garrison, and, in addition, they participated in duties connected with administration and transportation. Their function at Häme Castle was, thus, as at Viipuri Castle also, the security of the castle and the performance of special duties. The functions of the porters and the caretaker can also be considered paramilitary guard duty.³⁵⁵ The caretaker’s function was performed in the mid-1560s. In 1568, Jacob Jönsson served as caretaker and was in this function all the way to 1575. The caretaker was, in regard to his position, equal to the underbailiff. To him belonged the supervision of the cavalry and hired men and, as need arose, the arrangement of military defense. His functions thus included, in part, military administration. One or two men worked as porters, or gate guards, all the time.

A clear drop in the numbers of both bailiff’s attendants and squires occurred at the turn of

the 1540s and 1550s. Before 1550, there was an average of six bailiff's attendants and 45 squires engaged annually. After that, the bailiff's inner circle included an average of only four bailiff's attendants and 24 squires. According to Viljanti, there were 348 troopers altogether at Finland's 11 castles and royal estates in 1552. Häme Castle's share was 34 troopers, or bailiff's attendants and squires. This was the fourth largest number of men at Finland's castles. The reason for the reduction of the administration's assistants and garrison could have been the emancipation of the administration of Häme's castle fief's districts at the end of the 1540s. The castle bailiff's practical administrative responsibility decreased and the men were now hired in direct subordination to the district bailiffs. Also, the district bailiffs, who lived at the castle to the end of the 1540s, possibly belonged to this group of bailiff's attendants.³⁵⁶ The only district bailiff living at the castle who was known by name was Jacob Persson, who was appointed bailiff of the District of Sääksmäki in 1546. He lived at the castle clear to mid-1548. Of the new bailiffs appointed in connection with the administrative reform at the end of the 1540s, the District of Ylinen's bailiff, Mats Larsson, had served as bailiff's attendant at Häme Castle during the years 1540-1542 and 1545-1547.³⁵⁷ Nor was a large, permanent garrison necessarily still needed at the castle, for the stationing at the castle of cavalry and infantry detachments belonging to the Crown's army became common beginning in the 1540s.

In 1540, the bailiff's attendant Bengt Kurki took care of the transportation of servants to Stockholm. In the same year, the transport of tax grain, as well as meat and fish, was the responsibility of bailiff's attendant Henrik Jönsson. The bailiff's attendants Hans Olsson and Olof Olsson took rye, barley, peas and butter to Norrköping's central warehouse. The barber (*barskerar*) Hans (bailiff's attendant 1543-1545), who, as needed, served as the castle's doctor, can be mentioned as his own specialty among the bailiff's attendants. The functions performed by the castle's squires show that they were not merely soldiers. The squire Jacob Holst delivered tax monies to Stockholm in 1541, and in the following year, he was, with Clemitt Olsson and Bengt Olsson, transporting workers, money and oats to Stockholm. The squires also oversaw the Crown's rights at the fisheries. In 1549, the squire Anders Matsson spent 18 weeks at the castle's fishery at Ankkapurha and the squire Morten Persson stayed as long at the fishery at Vääksy.³⁵⁸

The lengths of the terms of service of the castle's squires and the rotations of office are possible to examine more closely during the years 1540-1552.³⁵⁹

During these years, 152 different persons served as squire at the castle. The length of the average period of service was three years. There were 63 squires who worked one year or less, and 28 squires remained over five years in the service of the castle. The longest-term squire was Jacob Holst, who served at the castle 11 years. On the basis of the raw data, it appears that fully 32 squires had two or more tours of duty. The squire Henrik Mortenson worked at the castle during the years 1542-1547, and he was again on the payroll in 1549 and 1550.

The squires could also transfer to other functions within the castle. It was already stated earlier that the castle's underbailiffs generally came from the group of squires and that the copyists were the most capable group of the squires. To some extent, there were promotions from squire to bailiff's attendant: during the years 1540-1552, nine of the castle's 152 squires were transferred to bailiff's attendant. The squire was, in three of these cases, transferred back to the squires' group after some years as bailiff's attendant. A squire was apparently appointed to perform a more responsible function, for which he was paid a better wage. Upon taking care of the job, he returned to the squires' group. The bailiff's attendant Benkt Kurki, who took care of the transport of the servants in 1540, received a smaller, squire's wage the following year. The squires can thus be regarded as a sort of labor pool for the castle.

6.2. The Castle as a Military Base

In the Middle Ages, there was not a regular infantry in the service of the king. Sweden's armed forces were based on the cavalry service of the nobility, and, as needed, the peasants were summoned to arms. The development of small arms from the fifteenth century on, however, changed the significance of the infantry, and, in accordance with the continental European models, Gustavus Vasa raised standing infantry-troop detachments. In the beginning, the soldiers were hired chiefly from foreign countries. The foreigners, however, became expensive, for they were used to getting their wages entirely in cash, with which they themselves took care of their upkeep. In the early part of the 1540s, Gustavus Vasa began to consider the possibility of replacing the foreign troops with domestic. The native soldiers were men from among the peasantry, recruited more or less by coercive means, who did not need a large cash wage. The domestic troops were enlisted both from

the country and from the towns. It was attempted, in particular, to recruit the vagrants into the troops, and the clergymen were obliged to find men for the army. During Gustavus Vasa's time, enlistment into the army appears to have changed to involuntary conscription.³⁶⁰

The strength of the domestic troops soon rose during the course of the 1540s from a couple thousand soldiers to 10,000 soldiers. Their support was also felt in the life of Häme Castle. Ever more each year, the castle had to receive infantrymen, or foot soldiers, in addition to cavaliers.³⁶¹ Also quartered were the fusiliers, the soldiers' servants known as pages and the stablemen, who served as grooms, belonging to the light cavalry. The castle, where large quantities of grain, meat, fish and feed were laid up, was splendidly suited for the quartering and provisioning of troops. Unfortunately, it is impossible to follow the size of the army quartered at the castle from one year to the next because the army's payment of wages was taken care of mainly by national paymasters and the soldiers were not always entered on the castle's payrolls. The troops bivouacked at the castle show up best in the number of people taking their meals at the castle, which is, almost without exception, larger than the number of staff permanently engaged at the castle.³⁶² In 1547, for example, an average of 35 more persons took their meals at the castle than were employed there. The greatest part of this group was soldiers.

The numbers of cavaliers (*sventjånare*) and foot soldiers quartered at the castle camp began to rise with the outbreak of the Russian War in 1555. Because the situation between Russia and Sweden was still critical even in the following decade, a large number of soldiers remained quartered at the castle. The size of the troop is best revealed in the lists of diners, which are preserved in their entirety from the years 1559, 1560 and 1562. During these years, the fusiliers, cavaliers, foot soldiers, pages and stable boys of the Crown's army averaged altogether in each year 93, 116 and 147 persons.³⁶³ The cavaliers of the mounted troops formed the largest group (38, 68 and 84 men), because the cavaliers could be at the castle continuously for several months. A German-Swedish mounted troop, which included 93 horse, stayed at the castle the entire year of 1563. The castle scribe had to explain later, in drawing up his accounts, that it had been necessary to feed the horses barley and rye when the oats ran out.

The last week in October, 1561, was exceptional, for 269 just-enlisted foot soldiers stayed at the castle at that time for a week. A longer-term bivouacking at the castle of large foot troops was rare. On the other hand, troops containing 30-50 foot soldiers

could stay a long time. In the mid-1540s, a group of 30 Smålander soldiers stayed at the castle for a period of several years. Apparently, it was a matter of Smålanders who had participated in the Dacke Rebellion of 1542. After the suppression of the rebellion, the Smålanders were sent to castle camps in Finland. In the summer of 1544, the army was summoned from Finland to Sweden because Gustavus Vasa feared a clash with the Danes. The Smålanders who had rebelled, however, had to remain in Finland. In 1545, one of the Smålander soldiers made 8 wagons for the castle's landed estates. This kind of additional duty brought extra income and was surely a welcome change to camp life. In 1551, there is mention of 60 foot soldiers' being at the so-called castle camp at Häme Castle and, in the following year, 49 foot soldiers. In 1553, there were only 39 men of the infantry. In 1554, there were 41 foot soldiers who participated in the payment of the annual wage, of whom 34 had been quartered at the castle already in 1552.³⁶⁴

Häme Castle's significance as quarters and as provisioner for the army became more marked, beginning particularly in 1563, for the entire 1560s. Realizing that war with Poland and Denmark was inevitable, Eric XIV enlisted additional people in the army. Upon the outbreak of war, there were many troops, particularly of non-Finnish men, collected in Finland. Soldiers were sent from Estonia to Finland's castle camps, and likewise, during the winter, men aboard ship were assigned to castle camps. During the year 1564, people were stationed at the camps of Finland's castles as follows: Häme Castle 172 persons, Olavinlinna 11 persons, Viipuri Castle 185 persons and Turku Castle 88 persons. At the same time, the numbers of the castles' permanent staff were as follows: Häme Castle 94 persons, Olavinlinna 160 persons, Viipuri Castle 328 persons and Turku Castle 265. Some examples of troops that ended up at Häme Castle follow. A group of cavalry composed of 80 horse was sent to Häme Castle from Rääveli in 1563. Royal fusiliers and sailors arrived from Helsinki. They stopped overnight on the trip at Hyvinkää and Janakkala. From Tammisaari, 40 soldiers, who had started out from either Rääveli or Sweden, rode to the castle camp. In 1570, fully 170 sailors of the royal navy and 20 fusiliers arrived from Viipuri. The troops did not necessarily stay long, but continued on their trips to Pori, Turku, Tammisaari, Rääveli, Helsinki or Viipuri.³⁶⁵

In the early period, peasants mainly from Småland, Dalarna, and Götaland joined Gustavus Vasa's troops.³⁶⁶ In the 1540s, chiefly foot soldiers from Småland were quartered at Häme Castle. On the basis of surnames, a troop of 49 infantrymen

quartered at the castle in 1552 was composed of men conscripted from Hälsingland, Nyköping, Götaland, Dalarna, Uusimaa, Häme and Porvoo. Already at the beginning of Gustavus Vasa's reign, Finns were enlisted in the royal troops. Finns participated in, among other things, the suppression of the Dacke Rebellion. During the Russian War, the proportion of Finns among the troops increased considerably. In 1555, so many infantrymen were enlisted from Häme that it was possible to establish a separate troop (about 500 men). In 1556 again, Häme peasants were conscripted, for whom spearheads were forged at the castle prior to their being sent to war against Russia.³⁶⁷ During the Nordic Countries' Seven Years' War, many men of Häme ended up far from their home districts. Nils Finne, valet of Hollola District's bailiff, accompanied newly conscripted Häme infantrymen to Stockholm in 1569.

The soldiers of the Crown were also seen and felt in the life of the province. They were stationed at fortified camps around Häme at the places of clergymen and heads of constabulary. War always meant additional burdens. During Gustavus Vasa's Russian War, bread, malt, hops, butter, mutton and beef, oats, hides, candles, tallow, hay and straw, which were delivered in the main to Viipuri and Helsinki, were collected in the province as a subsidy tax. Ninety Swedish soldiers, with their mounts, spent the night at the parsonage at Somero and the homes of the heads of constabulary of Renko and Turenki on the way to Viipuri. The troop's trip continued east from Häme Castle along the Upper Viipuri Road. Around the District of Hollola, extra taxes were collected for the troops passing through the area so that the burden would not be too heavy for those living along the public highways. Arvid Björnsson led a group of 67 men and 60 mounts. Under the authority of Mårten Jönsson were 60 fusiliers, and Lambrecht Diricksson's troop included 120 men and 160 mounts. Castle bailiff Jöns Brun got directions from the king during the Russian War to provide for the quartering of the army. The castle's defensibility was to be upgraded by increasing the manning and strengthening the fortifications. The highway connections between Viipuri and Häme Castles were to be severed by felling abatis in the road.³⁶⁸

During the 1560s, an ever-greater amount of tax revenues was used for military needs. The normal tax revenues no longer sufficed to cover the additional expenses caused by the war, and so it was necessary to resort to a supplementary provisions tax (*kostgärder*). In order that the supplementary taxes, or additional provisions, should be used in as controlled a manner as possible, a Supply-Store

Administration was established during the Nordic Countries' Seven-Years' War (1563-1570). The functioning of the army's supply service was, at that time, a serious problem. The taxes collected from the bailiwicks were sent straight to the local supply stores, where they were distributed to the army and navy. Finland's most important supply stores were in Turku, Helsinki and Viipuri, where they operated during John III's entire reign.³⁶⁹ Beginning in 1563, the supplementary taxes collected in Häme were delivered primarily to the vessels of the royal navy. The Förgylte Leyon, the Wiborgsfalk, the Lille Grip, the Helsingfors jact, the Älfsborgsbarck and many other vessels received deliveries of foodstuffs from Häme.

The Arsenal

From 1557 on, a permanent gunsmith was engaged at the castle. Before that, the development of the arsenal had depended on visiting craftsmen. In 1542, the fusilier Claes directed the building of a powder mill. Jören the fusilier arrived in the latter part of 1544 to teach the people of Häme Castle the use of firearms. Jören stayed at the castle clear to the end of 1547, and during his time, the armament of the castle was upgraded considerably.³⁷⁰ The visiting gunsmith Olof was summoned to the place. He made, in addition to bullets, pikes and hooks, one quarter-culverin and a double falcon for the armory. Precise information on the activities of the armorer responsible for the arsenal does not begin until 1571. Before that, the arsenal appears to have been primarily the responsibility of the commander of the fusiliers in the 1560s, and, in the mid-1560s, the castle bailiff Erik Spåra was the castle armorer. At Olavinlinna, Kastelholma and Helsinki also, the bailiffs were responsible for the armories.³⁷¹

The biggest job was the later casting of falcons and culverins, long-barreled, small-bore cannon. In 1554, six falcons were completed, which consumed a considerable part of the castle's iron stock.³⁷² In 1540, the castle's artillery consisted of one copper falcon and one copper quarter-culverin. A couple decades later, 1 copper falcon, 9 iron double falcons, 2 iron quarter-culverins and 6 iron half-culverins could be inventoried in the arsenal. The arsenal's level of armament had been upgraded, and what is more essential, the amount of ordnance had grown. There was also more shot and gunpowder than before. Alongside the falcons and culverins, the bows, arrows and spearheads were representative of medieval weapons. The custom was to keep the weapons in the castle and distribute them from there, as need arose, to the militia.³⁷³

Häme Castle's arsenal was small compared to the armories of the large castles. Even though small, it nevertheless provided for the defense of the castle and the nearby areas and also served the needs of the kingdom. When the Russian War broke out in 1555, six falcons and three lead molds, as well as lead and various grades of gunpowder from the armory were sent to Helsinki. During the course of the war, powder and lead were delivered to Viipuri Castle on several occasions. In 1569, the armorer of the royal fleet located off Helsinki received 9 falcons, lead, powder and shot from Häme Castle.

6.3. The Crown's Stud Farm

The scribes of the castle Olavinlinna, Sigfrid and Olof, needed new horses. Their problem was made known to the king, who sent a letter on their behalf to Häme Castle. In his message, the king ordered the delivery of two mounts from Häme Castle to Olavinlinna. The Crown's horse breeding was nationally organized in Sweden in the sixteenth century. Even in Finland, there was a stud farm on all the most important of the Crown's estates, where horses were raised for the Crown's needs. In addition to the Crown's staff, the army needed horses, both as mounts and as workhorses for hauling supply wagons and field artillery. There were particularly many fine horses in Finland in the period of Duke John (1556-1563), for, in the manner of a proper Renaissance prince, he always had with him a large, mobile guard and retinue on horseback.³⁷⁴ In connection with Häme Castle, the stud farm meant in practice the raising of mounts and workhorses on the landed estates. One must remember that, in addition to these horses, large numbers of mounts belonging to staff and soldiers were being cared for, the stables of which were in the vicinity of the main castle.

Nationally, the royal head stableman was in charge of the horse breeding. The head stableman specifically responsible for Finland lived at first at Turku Castle, from which he moved to Rauma. The royal estate at Rauma was the horse-breeding center for all Finland during the years 1560-1630, as Mauno Jokipii has pointed out. In addition, there were stud farms on all the most important estates from Korsholma to Olavinlinna. On the stud farms, the head stableman or caretaker was responsible for the horses' feeding, pasturing and training and organized the deliveries of horses.³⁷⁵ According to the payroll, there would have been few stud-farm staff at Häme Castle. Erik the head stableman managed the stud

farm during the years 1540-1543. The next time the head stableman is mentioned, in 1563 and possibly 1565 and 1566, the caretaker was responsible for the stud farm.³⁷⁶ It could also be the task of the grooms to take care of the staff's and soldiers' mounts. Because the horses of the stud farm were raised primarily on the landed estates, one can presume their care's being included in the tasks of the master and men of the landed estate.

At Häme Castle in 1547, four stallions are encountered, 2 workhorses, 39 mares, 18 colts and 17 fillies, thus 80 different horses in all. "The list clearly reflects Gustavus Vasa's organization of a methodical stock- and horse breeding," writes Julius Ailio. "The horses could be on summer pasture ten kilometers away, for example in the forests of Hauho and in the river Padasjoki, in which his royal majesty's mares were on the islands of Havaila and Hirvisalo annually. The horses were branded with a branding iron so they could be distinguished from the horses of the province." They were transported from Häme Castle to the royal estate at Rauma, from which shipment to Stockholm subsequently took place. During the Russian War, on the other hand, a reverse movement took place. In August, 1555, there arrived in Turku from Sweden 160 stallion riders (*hingstridare*), who were directed immediately to Viipuri.³⁷⁷ Apparently, all the Crown's horse breeding in Sweden was at that time organized for the needs of war.

The horses were the castle's most valuable property, and very exact terms were used for them. First of all, the stud farm's mounts (*frishäst*) and workhorses (*verkhäst*) were distinguished from each other. In addition, each group had its own terms for the mares, stallions, fillies, colts, young mounts and young workhorses. Häme Castle's horses were, in greatest part, mares, foals and young mounts. There were only one or two stallions at a time.

An average of 60 horses was raised annually on the castle's stud farm, of which 59% were mounts and 41% workhorses during the years 1552-1571. The mares gave birth to 13 foals in 1553, which raised the number of mounts to over 60. The year 1549 was hard. During that time, 23 horses perished, of which 18 were killed by bears. In 1543, the castle bailiff, Isak Nilsson, sold a studhorse to the Crown.³⁷⁸ The purchase of the stallion was unusual, for the studhorses were generally delivered from the other estates and castles. Three stallions were sent from Stockholm Castle in 1546. In other years, stallions were obtained from the bailiff of the Royal Estate of Helsinki, Anders Korp, and from Duke John's head stableman, Lars Larsson.

The large deliveries effected the most significant changes in the number of horses. Turku Castle's bailiff, Simon Thomasson, sent 28 broodmares to Häme Castle in 1558. This was part of a wider chain of deliveries, for in the same year 22 mares went on to Viipuri Castle and 6 mares to Olavinlinna from Häme Castle. A year later, 28 broodmares traveled to different parts of eastern Finland to royal estates established there. During the period of research, 206 horses altogether left from Häme Castle for all parts of the kingdom. Of these, 125 ended up at castles and estates of the Crown. Fifty-two horses were given to persons in the service of the Crown as, among other things, compensation for the loss of their mounts.³⁷⁹ It is surprising that the greatest part of the horses delivered was not young mounts, whose raising was seen as the chief function of the stud farms. Most commonly, mares were sent to other crown estates to establish the stock of horses of the new estates and to increase the number of horses of already-existing stud farms.

Schedule 10. The horses sent from Häme Castle during the years 1540-1571.

broodmares	107
young mounts and foals	63
workhorses	27
studhorses	7
other horses	2
total	206

The functioning of the castle's stud farm was significant from a national point of view in the mid-sixteenth century, when there were almost as many horses as, and sometimes even more than, at the largest horse-breeding centers at Rauma and Pori. There were 26 mounts altogether at Rauma's stud farm in 1557, during which time there were 49 at Häme Castle. When, in 1560, Rauma was made a center of stud operations, 29 mounts were raised there. At that time, there were only 17 mounts at Häme Castle, because, during the two previous years, large numbers of horses had been sent to the royal estates of eastern Finland. The number of mounts, however, soon increased: in 1569, there were already 49 of them, or as many as on the Royal Estate of Pori.³⁸⁰

The horses were also trade commodities. Cash revenues were obtained from the sale of horses, and horses were a medium of payment, particularly in the salt and wood-products trade. Altogether, 21 horses were sold or traded during the years 1540-1571. Of these, 15 were workhorses, 5 broodmares and 1 a studhorse. A transaction was executed in 1543 with

Danish salt traders, in which three workhorses were exchanged for 16 barrels of salt. At the end of the decade, one workhorse was equivalent to 8 barrels of salt. A valuable studhorse was transported to Denmark from the castle in 1541. The load on the return trip was oak boards, from which beer barrels were made at the castle.³⁸¹ The information on the salt and wood-products trade between Häme Castle and the Danes is important, for independent commercial activity by the bailiffs was still permitted in Gustavus Vasa's time. Later, the Crown sought to concentrate all trade in its own agents so that the merchants would not be able to cheat the bailiffs, whom the king considered inexperienced in commerce.³⁸²

7. Production and Consumption

7.1. Food Consumption as a Measure

In the third week of October, 1549, forty-seven persons participated in the dining at the bailiff's table at Häme Castle.³⁸³ There were few people because a troop detachment of 48 soldiers had recently departed the castle. The bailiff, Isak Nilsson, was there, the scribe Simon Nilsson, the underbailiff Henrik Andersson, the chaplain Master Jöns, the bailiff's attendants and the squires. The greatest part of the craftsmen also took their meals at the bailiff's table. In the same week in the latter part of October, 46 persons dined at the servants' table. They were the castle's men, maids, cowherds, swineherds and people of the landed estates. The miller also participated in the meals at this table. In the preparation of the week's food for the servants, a half-barrel of headcheese, a half-barrel of sausage and 3 *lispund* of dried fry were used. In addition, six barrels of everyday bread baked from rye and barley flour were eaten and one barrel of cavalier's beer and three barrels of everyday beer drunk.

The meals at the bailiff's table were of better quality, more varied and more ample than those of the servants. The food was prepared from freshly slaughtered beef, smoked beef and cow tongue. In addition, smoked mutton, headcheese and sausage were served. The menu also included butter, which was not available to the servants. At the fish meals there were salted eel, smoked pike, smoked bream and dried fry. The bread was rye, and for drink there

was bailiff's beer, cavalier's beer or everyday beer. In terms of quality, however, the food was distributed unevenly among the bailiff and the ordinary soldiers or craftsmen. The strongest beer, the fresh beef, the smoked mutton and the salted eel were feasted on by the bailiff and his inner circle at the meals.

Because the dining at the castle was very hierarchical and socially controlled, it was monitored by preparing inventories of the bailiff's table's and servants' table's dining, both of the food consumed and of the diners at table. The food-consumption inventories do not reveal what dishes were prepared from the raw materials. They provide information on how much of the basic raw materials—grain, butter, meat and fish—was used in the food preparation. With the aid of the inventories, it is possible to calculate how many barrels of rye, barley groats, salt, malt and Baltic herring or how many *lispund* of butter, beef, ham or dried fish were consumed per person in a year. The contents of the meals show how different a life the castle's commandant and the hired help led at the castle. We have no possibility of comparing the living conditions, clothing or health of those living at the castle in the sixteenth century, and consequently, an examination of food consumption is one means of delineating the social differences between the people of the castle. In using the food-consumption inventories, however, one must keep in mind that they were drawn up from the viewpoint of the national economy. The Crown was interested in knowing, above all, how the tax revenues collected at the castle and the foodstuffs produced at the castle had been used. The food-consumption inventories, thus, do not provide any information on the foodstuffs belonging to each personal economy.

Food Consumption as a Subject of Research

The food-consumption inventories of the castles, estates and mines posted in the bailiff's accounts were first used to good effect by Heckscher. He determined the standard of living of the sixteenth century on the basis of the energy content of the nourishment consumed. Disregarding the consumption of beer, which, in large measure, he had gotten confused, Heckscher calculated one person's average daily consumption at 4376 kcal. This corresponds to the Swedish average consumption for the years 1912–1913. In all Heckscher's sixteenth-century subjects of research, except for a few forest regions, more than 3300 kcal a day were consumed per person. In Heckscher's opinion, his results represent sixteenth-century eating on a wider basis as well: in normal years, as much was consumed in Sweden's most

important agricultural regions as in the households of the Crown.³⁸⁴

Heckscher's research provided in his time, and still provides, subject for discussion. The latest criticism presented against Heckscher is that of Mats Morell, both his own and collected.³⁸⁵ The central matters of controversy have been the opinions concerning the reliability and representativeness of the source materials, the picture of social and regional differences given by food consumption and Heckscher's way of changing the old units of measure to modern measures. Most prominent have been the problems of source criticism. Heckscher considered the source value of the food-consumption lists he used great. According to the criticism, however, he also used in his calculations, in addition to actual consumption data, consumption norms, which were provided, for example, for the gathering of food stores. In the accounts, thus, were also contained, in addition to consumption data, normative amounts of how much per person would be consumed, or to reserve for consumption. The differentiation of these from actual consumption required the vigilance of source criticism.³⁸⁶

In the service of the Crown, according to Heckscher, one ate well. It could thus be presumed that the nutritional state of the ordinary peasant was also good. Otherwise, there would have been a glut in the employ of the Crown, and there is no indication that that was the case. Nyström, in particular, has found fault with Heckscher's view of the peasant's high standard of living. In his opinion, Heckscher's idea is based on the conception that, in sixteenth-century society, people had freedom of movement and that they could achieve the position of an independent worker. The sources of the period do not, however, depict members of a peasant society who would have had the possibility of individual decisions.³⁸⁷ Nowadays, the general opinion is that Heckscher's results do not represent the eating of an entire people. For example, if the peasants had consumed as much salt as in the households of the Crown, an enormous quantity of salt would have had to be imported into the country. Customs statistics do not, however, support the idea of such great consumption figures.³⁸⁸

Eating at the Crown's castles and estates does not correspond with eating in the ordinary peasant household. The eating arrangement in the great households has been called a barracks economy, where the greatest part of the nourishment was composed of grain, as well as dried and salted fish. Food was plentiful, but it was monotonous. Later research has held that Heckscher made obvious mistakes in changing the old measures to modern

measures. For example, his figures for sixteenth-century grain consumption are considered 15%-25% too high. In correcting Heckscher's calculations for Främby for 1555, the grain consumption became 13% less. The consumption of butter, meat, fish and salt dropped 20%.³⁸⁹ Although examination has decreased Heckscher's consumption figures, his inference concerning the proportion of animal products is still accepted with a small correction. According to Heckscher, the consumption of animal products was relatively high in the sixteenth century. This consumption, like that of beer, decreased in the following century. Modern research considers the drop less precipitous, however, than Heckscher proposed.³⁹⁰

Is it possible then to calculate the calories contained in the food of times past? As Mats Morell has stated the matter, the purpose is not to calculate the exact number of calories with complete certainty. One must bring out the elements of uncertainty clearly and minimize the risks.³⁹¹ Calculations that take the risk factors into consideration, however, give a reasonably accurate picture of the food consumption. They also increase our knowledge of the living conditions and social differences of times past. The years for study of Häme Castle's food consumption are selected on the basis of the fact that the food-consumption inventory prepared weekly has been preserved from the year 1550 and the summaries for the whole year's food consumption, made with the help of the weekly lists, are available for the years 1548 and 1559-1561.³⁹² In Appendices 12 and 14 are presented the number of calories contained in one person's daily meals at the bailiff's table and the servants' table during a six-month period in 1550. The corresponding consumption during the years 1548 and 1559-1561 is in Appendices 11 and 13. In all the appendices, account is also taken of the proportion of consumption of vegetable and animal products.

In estimating the calories contained in different foodstuffs, advantage has been taken of the caloric values presented by Utterström.³⁹³ In order to be as close as possible to the correct consumption figures, Utterström has calculated a 25% reduction in the number of calories, which Heckscher applied only to butter. With the reduction, consideration is taken of the loss of nutrients caused by preservation, long storage and food preparation. Likewise, consideration is also taken of the fact that a person does not necessarily eat the whole portion of food served to him. Food was an essential part of the wages of the Crown's staff and possibly more food was available than the wage earner was able to eat. It has been suggested that part of the amount of food received

by the staff could have been exchanged for money or used for the maintenance of the family. This would explain, in part, the great food consumption.³⁹⁴ There is no information at Häme Castle, however, on the exchanging of food or the giving of it to the family. In estimating the level of food consumption at Häme Castle, the modern understanding of the numbers of calories needed daily by an adult man and woman has been taken as a starting point. An adult man doing ordinary physical work needs 3000 kcal daily, and a woman 2500 kcal. The caloric need for a man doing heavy physical work is 4500 kcal a day.

Consumption at the Bailiff's Table and at the Servants' Table

The meals at the bailiff's table and at the servants' table have been followed for a period of six months during the year 1550.³⁹⁵ The months have been selected so that, in addition to normal consumption, the effects on eating of exceptional situations such as Christmas and Easter would also become apparent. Surprisingly, consumption at the bailiff's table was at its greatest in July, when it was at its lowest at the servants' table. The consumption of no foodstuff group increased at the bailiff's table more than the others, rather the increase in consumption was uniform down the line. It remains unclear why there was so much eating at the bailiff's table during the summer. The other consumption peak, on the other hand, requires no explanation: overeating appears to have been a Christmas custom already in the sixteenth century. In the dining at the bailiff's table, in particular, the festival was observed with larger and better servings than usual.

The bailiff or scribe enjoyed about 4700 kcal daily during the Christmas 1549 holidays, which were some thousand kilocalories more than everyday fare. The hired hand or swineherd eating at the servants' table got about 2500 kcal a day. The servants' Christmas-period meals contained about 500 kcal more than the everyday food. The beer at the bailiff's table at Christmas was strong and malty, and the bread was baked from bolted rye flour. In addition, the people at the bailiff's table feasted on, along with smoked and salted meat, beef, mutton and pork slaughtered for Christmas. Cow tongue, headcheese and sausage were also included in the meals. In addition to dried and salted fry, salted salmon and stockfish were brought to the Christmas table. Christmastime did not bring extra delicacies to the servants. Compared to the bailiff's table's varied setting, the servants' Christmas-week food was simple: blood sausage, dried and salted fry

and fresh fish. Only smoked beef, which was rarely available to servants in everyday fare, proclaimed their Christmastime meals.

Despite the achievement of the Reformation, in late winter-early spring of 1550, at least, there was still fasting at the castle from Shrove Tuesday to Easter.³⁹⁶ Consumption at the bailiff's table declined during the fast period. Fasting did not essentially change the eating habits of the castle's servants because meat was included in their meals very seldom in any case (on an average, 0.098 kg per day). For the servants, stockfish, which was a rare treat for them, brought a slight variation to their fast-period meals. The courtiers did not replace meat with increased consumption of other types of foods. Only butter was eaten more than usual during fast at the courtiers' meals, and a greater variety of fish than usual was served. In addition to the everyday dried and salted fry, stockfish, as well as dried eel and bream, was prepared for the meals. Salted salmon, whitefish and Baltic herring were served.

During the research years, 6751-3886 (5063-2915) kcal (in parentheses the calorie amounts to which a 25% reduction has been made) per person were eaten daily at the bailiff's table at Häme Castle. The meals containing the most calories were eaten in July-August, 1550, and the food contained the fewest calories during fast in winter-spring of 1550. On an average, diners at the bailiff's table got 5204 (3903) kcal in a calendar day. Without a 25% reduction, the consumption figures are large. After reduction, the calorie amounts settle into a reading that seems realistic and corresponds well to the daily energy needs of a man doing heavy physical work.³⁹⁷ A man or maid eating at the servants' table got 5612-2428 (4209-1821) kcal daily. The smallest numbers of calories were eaten in 1548, and the largest in 1560. On an average, the meals contained 3583 (2688) kcal, that is to say that the amount satisfied the caloric needs of a woman and of a man doing light physical work.³⁹⁸ The wild rise in caloric content of the servants' food from the turn of the 1540s and 1550s to the beginning of the following decade is peculiar. The numbers of calories at the bailiff's table, on the other hand, fell during the corresponding period. Construction work on the castle's east gun tower began in 1559. The workers arrived at the castle took their meals at the bailiff's table, and during the following years, also, the number of persons at the bailiff's table remained high, approaching 200. At the servants' table, on the other hand, about 50 persons dined from one year to the next.³⁹⁹ With the number of people increasing, the castle bailiff and his inner circle hardly reduced their intake for the benefit of the others. Their servings of

food surely remained as ample as before. The lesser valued soldiers and workers, on the other hand, had to reduce their own intake. In the situation in which more people than usual lived at the castle, the barracks-economy effect on the dining came into bolder relief than before: the servants' meals were composed, in ever-greater degree, of high-energy bread and beer. On the other hand, more high-energy butter and meat were also contained in the servants' meals at the turn of the 1560s than ten years earlier.

The numbers of calories eaten at Häme Castle correspond well to the consumption figures of the other crown castles and estates to which a 25% reduction has been made. At the Royal Estate of Uppsala, 3964 kcal were consumed per person in 1557, which was almost the same as the average consumption at Häme Castle's bailiff's table (3903 kcal). At the Royal Estate of Gripsholm in 1555, one person's meals contained 4436 kcal daily. Data on the king's court dining reveals really large consumption figures. In 1573, King Eric's inner circle consumed 6194 kcal per person daily, and, in the court of Duke Magnus, the corresponding consumption was fully 7092 kcal. The meals of Häme Castle's servants also contained as many calories on an average (2688 kcal) as the meals of other crown workers. The people of the estate of Främby ate 2982 kcal daily, and the corresponding consumption at Noraskog's ironworks was 3375 kcal. On the estate of Luulaja, the daily meals contained 4000-5000 kcal.⁴⁰⁰

Grain the Most Important Source of Energy

During the research years, the servants received an average of 86% of their daily energy from vegetable products, that is to say from bread grain, beer malt, peas and beans. Of this, beer malt's proportion was 16%. The calories obtained from animal products were split evenly between meat and fish. Butter was not included in the servants' meals at all during the years 1548 and 1550. Ten years later, butter was available in small amounts: butter's proportion of the energy obtained from animal products was 2%. Although the greatest part of the daily energy at the bailiff's table, too, was from vegetables, the nourishment was, nonetheless, more varied than that of the servants. About 72% of the day's calories was obtained from bread grain, malt, peas and beans. Beer's proportion was considerably greater than at the servants' table, for half the energy from vegetables was derived from beer. The proportion of beer was fully one-third the total number of calories of the food. Of the energy obtained from animal products, an average of 46% was from meat, the proportion of fish was 34% and

butter fully 20%. During fast, when meat as such was not eaten, butter's proportion of the animal calories was one half.

Rye and beer malt were the most important energy sources. In the preparation of food for the bailiff's table, rye flour and barley groats were used to some extent in porridge. In 1561, 171 kg of bread flour were consumed per person at the bailiff's table, and, in the same year, only 16 kg of rye flour and 6 kg of barley groats per person were used otherwise in food preparation. In 1550, the servants' meals did not contain other grain products than beer malt along with the bread flour. Ten years later, meals were prepared for them, too, from barley groats, of which 3.5 kg per person were consumed in 1561. According to Heckscher's calculations, the proportion of animal products in the consumption would have been 30-40%. The figure is too high at Häme Castle, where the animal products' proportion of the daily energy was 18-38% at the bailiff's table and 10-25% at the servants' table. In a barracks economy, it is not unusual to use a kilo of flour a day per person. At Häme Castle, one servant consumed an average of 0.640 kg of flour daily. At the bailiff's table, 0.765 kg of flour per person was consumed. When beer malt is also included, the corresponding figures were 0.900 kg and 1.940 kg. In many places, half the grain allocated for food was used in making beer. At the estate of Främby, near Stora Kopparberg, 36 persons consumed 8960 kg of bread grain (0.680 kg/person per day) and 7240 kg (0.550 kg/person per day) of beer malt altogether in 1555. There were 29 workers in all in Främby's bunkhouse. They drank fully 4.2 liters of beer per person daily, and so 7520 kg (0.710 kg/person per day) of bread grain and fully 9840 kg (0.932 kg/person per day) of beer malt were consumed among them during a year.

The Proportion of Meat and Fish in the Diet

A general feature from the end of the Middle Ages on was that the consumption of meat, and especially of fresh meat, increased in the wealthiest groups. Heckscher has pointed out that the upper class in the castles of Sweden ate fully 38% of the meat prepared fresh in the 1570s. At the servants' meals was only salted and smoked meat.⁴⁰¹ In 1550, 15% of the meat at the bailiff's table's meals at Häme Castle was fresh, but no fresh meat at all was included in the servants' meals. Unfortunately, it is not possible to calculate the proportion of fresh meat in the consumption of other years. During the years 1559-1561, the servants were indeed served small amounts of fresh meat, and, quantitatively, they ate more meat than ten years earlier. Were there, however, clear differences in quality between the tables? Were the best cuts of meat feasted on at the courtiers' meals, and was a greater variety of meat served to them than to the servants?

The main features of the meat consumption are very clear: all the people of the castle ate mostly beef, and the servants' meat meals were considerably simpler than those served at the bailiff's table. In addition to beef, the servants' meals included sausage, headcheese and lard. Mutton and game birds were a rare treat for them. At the bailiff's table, on the other hand, more mutton was eaten than pork. The game birds were wood grouse, black grouse and willow ptarmigan hunted by the peasants and delivered to the castle as tax. We will take an example of the bailiff's table's varied meat selection from January-February, 1550. Beef was available fresh, salted and smoked. Mutton, likewise, was fresh and smoked. In addition, cow's tongue was eaten, salted and fresh pork and game birds, of which there were 100 during

Bailiff's table	1559	1560	1561
beef	70%	75%	57%
mutton	10%	8%	14%
pork	5%	7%	13%
birds	5%	5%	6%
sausage	10%	5%	10%
total	100%	100%	100%
Servants' table	1559	1560	1561
beef	35%	45%	35%
mutton	-	1%	1%
pork	-	6%	6%
birds	-	-	2%
sausage, headcheese and lard	65%	48%	56%
total	100%	100%	100%

*Schedule 11. The proportion of different kinds of meat, sausage, headcheese and lard out of the total consumption of meat at the bailiff's table and servants' table at Häme Castle during the years 1559-1561.*⁴⁰²

the month. It was already mentioned previously that the consumption of fresh meat year-round was a mark of a high standard of living. In the same way, the consumption habits of the upper class included eating meat in variety and abundance. In the mid-sixteenth century, meat appears to have been a more important accompaniment to grain foods than fish for the upper class.

Schedule 12. The average daily amounts of meat and fish in kilograms consumed by one person at Häme Castle's bailiff's table (bt) and servants' table (st) during the year 1550, as well as the mean value of consumption during the years 1559-1561.

	Year 1550		Years 1559-1561	
	bt	st	bt	st
Meat	0.344 kg	0.094 kg	0.315 kg	0.213 kg
Fish	0.320 kg	0.188 kg	0.280 kg	0.270 kg

More meat than fish was used at the bailiff's table in 1550 already, and the relative consumption had not changed ten years later. The consumption of both meat and fish at the bailiff's table was, however, less per person during the years 1559-1561 than earlier. This was caused by the fortification builders' and soldiers' dining at the table, which increased the number of diners. The greatest part of the diners at the bailiff's table surely ate, for the most part, salted and smoked beef. The best quality and most varied meat servings were reserved for the bailiff and his inner circle. A clear change had occurred in the eating habits of the servants: the proportion of both meat and fish in the daily meals had risen. Although the amount of meat was less than that of fish in grams, its relative share of the daily calories was more significant than that of the fish because of the meat's greater energy content.

Consumption by Sector

In the foregoing, eating at the bailiff's table and the servants' table have been compared. The castle's division of labor and production by sector have been treated earlier. There is reason to also consider the consumption of the different sectors. In that case, we are starting out from the assumption that the staff of the tertiary and secondary sectors dined at the bailiff's table and the servants' table included the people of the primary sector. It is possible to make an exact calculation of the division of consumption among the different sectors for the year 1559 because

both the year's summary of food consumption and the weekly lists of diners at the castle are available. The calculation for 1559 is presented in Appendix 15. During this year, 41 persons from the staffs of both the primary and secondary sectors dined at the castle. The greatest part of the primary sector's people worked on the landed estates, and there were also a few swineherds and herdsmen in the group. In the service of the secondary sector were craftsmen of many trades and especially construction-trades professionals, for the masonry work on the gun tower had begun in the spring of 1559. In addition to the public officials of the tertiary sector, there were also on site the soldiers kept at the castle camp, and, consequently, the population of this sector reached 129 persons. The relative size of the different sectors was, thus, typical for the period: the primary and secondary were equally large and the tertiary considerably larger than the others, the soldiers being quartered at the castle.

As the largest group, the tertiary sector naturally also consumed the greatest part of the castle's foodstuffs. In the consumption habits, however, are also found interesting peculiarities, which delineate the social differences among the different groups. First of all, all the oats was used by the soldiers as horse feed. The primary sector's servant staff did not use bolted rye flour at all, and, even in the secondary, its use was very minor. Correspondingly, on the other hand, barley flour was reserved almost in its entirety for the primary sector, and the tertiary sector ate the greatest part of the barley groats and all the wheat flour. The consumption of the peas and beans was very surprising, for the primary sector consumed nearly half of them ($2/3$ *spann*/person). The amounts of peas and beans eaten per person in the tertiary sector were minor ($1/10$ *spann*). In the eating of the Middle Ages, legumes were generally associated with the poor. Peas and beans was the bread of famine years.⁴⁰³ At the castle, legumes were an important protein addition to the servants' diet, which contained little animal protein.

Predictably, over half the butter was consumed by the tertiary sector. The monotony of the primary sector's meat meals also appears clearly in Appendix 15: beef, headcheese or sausage from one day to the next. Fresh fish, also, was not served to this sector. It is notable that more dried fish than salted was eaten in all sectors. The traditional method of preservation was, thus, still much used. In the consumption of meat and fish, in particular, the position of the secondary sector's staff at the castle comes out. Both meat and fish were available to them in greater variety than to the primary's people. Small differences, such as the lack of wheat flour in the

diet of the secondary sector, the large proportion of sausage in the meat courses and their use of barley flour, reveal the secondary sector's, however, being beneath the tertiary socially.

The previously presented calculation of the consumption among the sectors can only be considered indicative because data for only one year has been used. It is, however, interesting to present such early figures of the different sectors' consumption habits. Unfortunately, it has not been possible to make individual consumption calculations within the tertiary sector. One can assume the consumption in this sector being distributed very unevenly: the finest rye flour, the wheat flour, the butter, the best meat and fish were for the dining of the commandant of the castle and his inner circle.

7.2. The Proportion of the Castle's Own Production in the Consumption

Food-consumption data are very useful in discussing the social differences of the castle's staff. In addition, one can, with their aid, estimate the significance of Häme Castle's own production for the consumption: how large a part of the foodstuffs consumed at the castle was it able to produce itself? With the aid of the consumption, one can also examine the castle's own production: what significance did the grain cultivation and animal husbandry have in production? The general conception is that grain cultivation was the foundation of agriculture and livelihood. In Sweden, an interest has been taken in budget calculation, in which the significance of different fields of agriculture has been weighed. Either agricultural productivity or the consumption of agricultural production has been taken as the basis of calculation. In using productivity data, it is possible to calculate the total production in calories or to estimate the production's monetary value. According to nearly all the calculations based on productivity data, about half the foodstuffs were obtained from the cultivation of grain. In the calculations based on consumption, on the other hand, the proportion

Schedule 13. The distribution between Häme Castle's own foodstuffs production and the peasants' foodstuffs deliveries of the kilocalories consumed daily at the bailiff's table during the years 1548 and 1559-1561 and six months of the year 1550. The percentage share of the total calorie consumption in parentheses. The schedule's calorie amounts are based on Appendices 11 and 12.

	1548	1550 (mo. 1) 10-1/10-28-49	1550 (mo. 4) 12-24-49/1-20-50	1550 (mo. 5) 1-21/2-19-50
Own production	2021 (35%)	2620 (46%)	2774 (44%)	2486 (49%)
Deliveries	3745 (65%)	3086 (54%)	3490 (56%)	2580 (51%)
Totals	5766 (100%)	5706 (100%)	6264 (100%)	5066 (100%)
	1550 (mo.7) 3-20/4-16-50	1550 (mo. 10) 6-12/7-9-50	1550 (mo. 11) 7-10/8-6-50	
Own production	2266 (58%)	3345 (58%)	3928 (58%)	
Deliveries	1620 (42%)	2452 (42%)	2823 (42%)	
Totals	3886 (100%)	5797 (100%)	6751 (100%)	
	1559	1560	1561	
Own production	2016 (46%)	1659 (42%)	2064 (46%)	
Deliveries	2344 (54%)	2327 (58%)	2391 (54%)	
Totals	4360 (100%)	3986 (100%)	4455 (100%)	

of grain comes to fully three-fourths. In Myrdal's opinion, there are fewer elements of uncertainty in the calculations based on consumption, and they give a clearer picture of reality than the calculations done with the aid of production data.⁴⁰⁴

With the aid of what has been previously presented of Häme Castle's farm and stockbreeding production, as well as of the foodstuffs delivered to the castle, it is possible to conclude that the castle was self-sufficient in regard to rye, peas and beans, and partly so in regard to butter and meat. The castle's own staff fished for choice fish at the castle's fisheries at Valkeakoski, Vääksy and Ankkapurha. Fresh fish was obtained from nearby waters. These catches did not, however, have a critical significance in the castle's food economy.

The significance of its own production and, on the other hand, of the peasants' deliveries to the castle's foodstuff economy is depicted well by how large a part of one person's daily calorie requirement could be covered by the castle's own agricultural production and how large a part was dependent on outside deliveries. The distribution of calories between its own production and deliveries, at the bailiff's table and at the servants' table, has been calculated for the years 1548, 1550 (six months) and 1559-1561.⁴⁰⁵

In 1548, domestic production covered about one-third of the consumption at the bailiff's table. The follow-up on consumption during the year 1550 reveals that the significance of domestic production grew in the course of a year, the consumption of beer made from "imported malt" decreasing during the year. During the years 1559-1561, in which the figures are mean values for a whole year's consumption, domestic production was able to cover nearly half the consumption.

Because the servants' meals included less rye than the meals of the diners at the bailiff's table, and no butter at all, the proportion of the castle's own production in the consumption remains clearly smaller than the proportion of the deliveries for the years 1548 and 1550. The increase in the proportion of the castle's own production ten years later is explained by the increased consumption of bread, that is to say rye, the increased consumption of peas and beans and the small amount of butter contained in the meals.

The proportion of the castle's own production out of the consumption varied annually and according to season. In summary, one can say, however, that 40-50% of the daily energy needs at both tables was capable of being covered by the castle's own production. The cultivation of bread grain, or rye, had

Schedule 14. The distribution between Häme Castle's own foodstuffs production and the peasants' deliveries of foodstuffs to the castle of the kilocalories consumed daily per person at the servants' table during the years 1548 and 1559-1561 and six months of the year 1550. The percentage share of the total calorie consumption in parentheses. The schedule is based on Appendices 13 and 14.

	1548	1550 (mo. 1) 10-1/10-28-49	1550 (mo. 4) 12-24-49/1-20-50	1550 (mo. 5) 1-21/2-19-50
Own production	738 (30%)	1117 (39%)	1214 (37%)	1069 (39%)
Deliveries	1690 (70%)	1746 (61%)	2110 (63%)	1670 (61%)
Totals	2428 (100%)	2863 (100%)	3324 (100%)	2739 (100%)
	1550 (mo. 7) 3-20/4-16-50	1550 (mo. 10) 6-12/7-9-50	1550 (mo. 11) 7-10/8-6-50	
Own production	1063 (39%)	1067 (38%)	1019 (39%)	
Deliveries	1671 (61%)	1709 (62%)	1564 (61%)	
Totals	2734 (100%)	2776 (100%)	2583 (100%)	
	1559	1560	1561	
Own production	2603 (49%)	2894 (51%)	2611 (47%)	
Deliveries	2668 (51%)	2718 (49%)	2893 (53%)	
Totals	5271 (100%)	5612 (100%)	5504 (100%)	

a great significance for the food economy because nearly all the calories of the castle's own production were obtained from rye, at the bailiff's table an average of 83% and at the servants' table an average of 91%. At the bailiff's table, the share of butter out of the calories of the castle's own production was, on average, 10%. Because the proportion of meat remained clearly smaller (an average of 6% at the bailiff's table and 3% at the servants' table), this would reveal dairying's being more significant to the castle's food economy than beef-cattle production. An average of 5% of the servant staff's calories at the castle was obtained from the cultivation of peas and beans, and, consequently, the growing of these had significance primarily in the feeding of the castle's servants.

8. Conclusion

Castles were, in the mid-sixteenth century, a solution for the achievement of the goals of the Swedish central administration. The castle was, along with the administrative and military arrangements, also an effective means for the control and exploitation of economic resources, based far from the national economy in the local payment of taxes in kind. Growing troops could be maintained at the castle, and its walls and ramparts provided protection against firearms. Häme Castle's economy, like that of the other crown castles, was organized to serve the needs of the centralized nation. Castle administration could be called the central administration's method of financial management.

A sector division proves to be a good technical device in examining the economy of Häme Castle in the mid-sixteenth century. The special requirements imposed on the economy by the Crown and the changes of the period are brought out well with the aid of a sector division. At the same time, a sector division renders it possible to examine the social differences between the people of the castle. The assumption presented at the beginning that the Crown needed a more developed agriculture, professionally skilled craftsmen and a capable administrative staff for the realization of its requirements proves to be correct. The workers of each trade had to concentrate on, and specialize in, the functions of their own trade in order that the Crown's objectives could be achieved. Larger military troops than before were quartered

at the castle. Their maintenance required additional foodstuffs, bedclothes and accommodations. Experts from so many trades were engaged at the castle that it could also be considered a craft center. The concentration of agriculture on rye cultivation and beef-cattle breeding was specialization for the needs of the Crown. In order to secure the food supply, it was necessary to expand the castle's agriculture by transferring the lands of the castle's neighboring villages to the Crown. The economic arrangements show that, in them, the quartering of even large military troops at the castle had been taken into consideration. The defenses and armaments were being developed in accordance with changes in military technology. At that time, there was work for masons, carpenters and gunsmiths. The reform of the administration and the new bookkeeping system required the bailiffs and scribes to apply themselves to their duties. The more specialization that occurred in administration and the crafts, the less time there was for farming. A division of labor developed. The detailed examination of Häme Castle's economy in the mid-sixteenth century reveals their having been far along in Häme in the Crown's requirements as a specialized administrative and economic center.

In the Middle Ages, when Häme Castle was the center of a castle fief that had been enfeoffed to high nobility, one can conceive there having been at the castle a sort of nobleman's court splendor and interest in culture in the manner of the other castle centers. Such was certainly the case during the years 1504-1507, when Ingeborg Aakke's daughter, widow of the Guardian of the Realm Sten Sture, considered the castle her residence. Ingeborg belonged to the powerful Tott family, which further increased her influence.⁴⁰⁶ When Gustavus Vasa had reduced the office of Häme Castle's master to an ordinary hired bailiff's function, this stage was left in the past. The first bailiff of the research period, Isak Nilsson Banér, belonged to the high nobility of the kingdom, but there are no signs in this heartland province from his period of a refined Renaissance culture. One cannot discern at Häme Castle a splendor of the kind at Duke Eric's court at Kalmar Castle (1557-1560) or Duke John's court at Turku Castle (1557-1560).⁴⁰⁷ An ordinary Finnish everyday life was lived at Häme Castle in the mid-sixteenth century. Renaissance influences, to be sure, were carried even here with, for example, master builders supervising masonry work and military troops arriving for wintering. The nobility tried to follow the latest fashions in dress and table manners, and the castle's chaplain disseminated the new religious opinions to his congregation.

Endnotes

- ¹ Knut Drake, who wrote his doctoral dissertation on the construction history of Häme Castle in 1968, has, in his more recent research, dated the castle's medieval construction stages anew in his article *Die Bauherren der Burg Hämeenlinna im Mittelalter. Castella Maris Baltici* 3-4. Turku-Tartu-Malbork 2001. According to Drake, it is indisputably clear that Häme Castle was established at the end of the thirteenth century. It was a matter at that time, however, of only a wooden palisade, which Bo Jonsson Grip, in the period of the second half of the fourteenth century, changed to granite.
- ² Lovén 1996 p. 191; Suvanto 1976 pp. 122-27, 154-55; Drake 1968 p. 40; Fritz 1973 pp. 128-31. The first written mention of Häme Castle is from the year 1308; Alanen 1996 p. 3.
- ³ The Schroderus Map's dating is considered in Chapter 4.2.
- ⁴ Lindeqvist 1926 pp. 387-88.
- ⁵ Suvanto 1976 pp. 127-128, 154.
- ⁶ See Chapter 4.1. Hätilä's fields were seeded with the castle's seed grain for the first time in the fall of 1557.
- ⁷ Suvanto 1976 pp. 115-16; Rytönen 1992 pp. 24-28.
- ⁸ 1539 VA 3668: 151-52; Suvanto 1976 s. 129-130.
- ⁹ Suvanto 1976 pp. 136-37, 154-56; Voionmaa 1938 p. 37.
- ¹⁰ Vilkuna A-M 1998 p. 23.
- ¹¹ Drake 1996 pp. 30-34; Fritz 1972 p. 34.
- ¹² Lovén 1996 p. 211.
- ¹³ Gardberg 1993 p. 52; Drake 1996 pp. 30-34.
- ¹⁴ Gardberg 1993 pp. 56-57.
- ¹⁵ A dwelling was completed alongside the wall in the years 1563 and 1571. In the one completed in the latter year were two parlors and three bedrooms (1563 VA 3692: 37-38; 1571 VA 4068: 16-16v); 1559 VA 3868: 65 and 1559 VA 3869: 55.
- ¹⁶ Luppi 1996 pp. 109, 117-19.
- ¹⁷ Ailio 1917 p. 218.
- ¹⁸ Ailio 1917 p. 177; The picture of the castle's living spaces, work areas and storage structures is complete, but unfortunately we don't know exactly the locations of the room areas in the main castle, nor can we locate the buildings in the castle area. If the locations of spaces are mentioned, the concepts *vid slottet*, *på slottet*, and *in på slottet* are used. *Vid slottet* has been translated at the castle or beside the castle. For example, the sale of grain to the peasants always occurred *vid slottet* (1543 VA 3677: 76v-78v). In 1541, coal was burned in the blacksmith's shop, which was located *på slottet* (1541 VA 3677: 121v). A sooty forge, in which always lay a fire hazard, was hardly located inside the main castle. On the other hand, the phrase *in på slottet* has been translated in the main castle. In 1560, the baking-cottage oven was repaired *in på slottet* (1560 VA 3889: 3v). In 1569, the balcony around the main castle's inner yard at the second-story level was repaired and roofed. The balcony was located *in på borggården* (1569 VA 4046: 22v-23).
- ¹⁹ Vilkuna A-M 1998 p. 27.

- ²⁰ From the year 1541 is mention of a guest dormitory, in which a stove was built (1541 VA 3671: 92v); Lovén 1996 p. 32.
- ²¹ See Section 5.3.
- ²² Larsson and Österberg 1985 pp. 7-8; Myrdal and Söderberg 1991 pp. 9-12, 416-20; Myrdal 1995 p. 199.
- ²³ Myrdal and Söderberg 1991 pp. 489-90; Jutikkala 1992 pp. 158-61; Nummela and Karonen 1993 p. 81.
- ²⁴ Myrdal and Söderberg 1991 pp. 416-19.
- ²⁵ Lindegren 1985 pp. 305, 307; Söderberg 1988 p. 5; Myrdal and Söderberg 1991 pp. 110-11.
- ²⁶ Lönnroth 1944 pp. 147-50; Larsson and Österberg 1985 p. 5-6, 32.
- ²⁷ Lönnroth 1944 pp. 146-50; Hammarström 1956 pp. 362-63; Odén 1967 p. 5; The concept *maktstat* was introduced in the Congress of Historians of the Nordic Countries in Odense 1984 (*Magtstaten i Norden i 1600-tallet og de sociale konsekvenser, Rapporter til den XIX nordiske historikerkongres Odense 1984*).
- ²⁸ Nilsson 1990 p. 9; Lindegren 1985 p. 305.
- ²⁹ Hammarström 1956 pp. 274-275; 353-54; Odén 1967 pp. 4-5; Tawaststjerna 1905 pp. 122, 157.
- ³⁰ Odén 1967 p. 3.
- ³¹ Odén 1955 pp. 64, 152.
- ³² Odén 1967 p. 4; Lindegren 1992 p. 5.
- ³³ Heckscher 1935 pp. 59-62, 80-83. In Heckscher's opinion, Gustavus Vasa showed no desire to change the economy in the direction of a cash economy; Also, Henrik Klackenborg describes in his doctoral dissertation, *Moneta nostra, Monetariseringen i medeltidens Sverige* (Lund 1992), how money replaced natural instruments and materials in the Middle Ages.
- ³⁴ Unfortunately, it is often difficult to distinguish whether the question is one of the change of a commodity tax to cash or of the bailiff's traffic in collected tax goods. In some cases a change of the commodity tax and a sale are distinguished from each other by using the term *sälja* for sale and the term *lösa* for a change (For example, 1545 VA 3686: 5-10 and 1545 VA 3687: 6-10).
- ³⁵ Heckscher 1935 p. 69. Heckscher has put forward the proportion of taxes in kind as 69% during the years 1530-1533 and cash taxes as 31% of the entire tax assessment. Hammarström considers a proportion of 31% too small for the cash tax, for the business conducted by the bailiffs with commodity-tax items increased the amount of the cash tax. (Hammarström 1956 pp. 351, 392, 395 and 397); Odén 1967 p. 7.
- ³⁶ 1543 VA 3677: 73.
- ³⁷ Hammarström 1956 pp. 351, 356-57, 361-63, 392-397.
- ³⁸ Hammarström 1956 pp. 312, 352, 360-61, 466-67; Odén 1967 pp. 5-6.
- ³⁹ Tawaststjerna 1905 pp. 122-23; Hammarström 1956 p. 467; Larsson 1967 pp. 250-52.

⁴⁰ Odén 1967 pp. 6-8; The biggest reason for the shift to domestic troops has been seen as the costliness of foreign troops. At the end of the 1520s, the Crown paid the foreign infantrymen, as well as the best-paid domestic cavalry soldiers, twenty marks per year. The other cavalry soldiers and fusiliers got sixteen marks per year, and the Swedish infantrymen twelve or ten marks per year. In the mid-1530s, the foreign infantrymen began to be paid a monthly wage according to the continental custom, at which time their annual salary rose to ninety marks. (Hammarström 1956 pp. 353-57). Lars-Olof Larsson sees the reasons behind Gustavus Vasa's army reforms as, above all, the country's internal development. After the Dacke Rebellion, the king feared new, internal unrest that the foreign powers would be able to take advantage of. Through impressment, the peasants were bound to the Crown and prevented from the possibility of expressing armed discontent toward the central power (Larsson 1967 pp. 266-67).

⁴¹ Odén 1955 pp. 153 and 165; Hammarström 1956 p. 399.

⁴² Lönnroth 1940 pp. 252-53; Odén 1955 pp. 153-54, 159; Peterzen 1945 pp. 180, 184-85.

⁴³ Odén 1967 p. 9; Pänkäläinen 1968 p. 36.

⁴⁴ Odén 1955 pp. 161-62.

⁴⁵ Nyström 1936 p. 228; Andersson 1943 pp. 206-207, 210.

⁴⁶ Heckscher 1935 p. 85.

⁴⁷ Gustavus I:s Registratur XVIII p. 198.

⁴⁸ Andersson 1943 p. 217.

⁴⁹ Morell 1995 p. 114.

⁵⁰ The bailiff directives were published in Arwidsson 1851 pp. 99-109, 361-65.

⁵¹ Odén 1955 pp. 82-83, 74-75.

⁵² Nyström 1936 pp. 230-32; Viljanti 1957 p. 559; Lundkvist 1960 pp. 350-54; Lindegren 1985 p. 318.

⁵³ Odén 1967 pp. 8-9.

⁵⁴ Arwidsson 1851 pp. 87, 98-109; Nyström 1936 pp. 233-34.

⁵⁵ Forssell 1884 pp. 121-22; Nyström 1936 p. 233-34, 255; Renvall 1949 p. 136; Harnesk 1990 pp. 168-69.

⁵⁶ Ferm 1990 pp. 23-24; Forssell 1884 p. 122.

⁵⁷ Odén 1955 pp. 89-90; KA Strödda räkenskaper och handlingar tom 1630. Fogdarnas räkenskaper volym 1 sidor 31-74 och sidor 721-60. The following year's account contains the period from Saint Jacob's Day 1530 to Saint Jacob's Day 1531.

⁵⁸ Styffe 1856 pp. 1-5, 10-17; Arwidsson 1851 pp. 99-109, 361-65; Eric XIV and John III drew up the limiting statutes for the bailiff's in 1563 and 1583. These are published in Styffe 1852 pp. 6 and 8; Odén 1955 pp. 121-22, 164; Hammarström 1956 pp. 294-96.

⁵⁹ Söderberg 1977, Munktel 1982, Nilsson 1989 and 1990, Ferm 1990 and Myrdal and Söderberg 1991.

⁶⁰ In the research, the usage of the concepts landed estate, cattle estate and royal estate are not always uniform. In this context, by royal estate is meant a farm under control of the Crown that is also the administrative center of its area, such as, for example, the Royal Estate of Kokemäki. A cattle estate was also an administrative center, but in this context, by cattle estate is meant the estates established in connection with the 1555 cattle-estate project, such as, for example, the cattle estate of Mustiala. A landed estate was a crown farm that belonged to a larger entity and lacked administrative independence.

⁶¹ Because the accounts of Häme Castle are not preserved from the year 1570, the tables and diagrams concerning the castle lack information from that year. Instead, account information from Häme's jurisdictional districts for the year 1570 has been gone through. Information on the castle's farming ends in the year 1569, and in animal husbandry the year 1571 is still included, so that the castle's data would be more comparable to the silver-tax inventory for the year 1571.

⁶² Vahtola 1993 p. 334; Suvanto 1995 p. 93.

⁶³ Mäkelä 1989 pp. 119-21; Myrdal and Söderberg 1991 p. 119; Tornberg 1989 pp. 64-67.

⁶⁴ Myrdal and Söderberg 1991 pp. 51-55.

⁶⁵ Magnus Erikssons stadslag 1966 p. 15; Poulsen 1988 pp. 136-39.

⁶⁶ Myrdal and Söderberg 1991 p. 416.

⁶⁷ The dating of the food-consumption inventory is unclear (1550 VA 3712: 1-74). The beginning of the inventory says that it includes the consumption of Häme Castle from Michaelmas 1549 to Michaelmas 1550. A comparison of the consumption data, however, does not tally with the actual castle accounts for fiscal year 1550. Instead, the consumption data tally with the data from fiscal year 1549 (1549 VA 3709); 1548 VA 3700: 57-60; 1550 VA 3712: 1-74; 1559 VA 3868: 96-101; 1560 VA 3889: 64-67; 1561 VA 3907: 65-69.

⁶⁸ Renvall 1934 pp. 143-44; Fritz 1973 pp. 35-36, 130-31.

⁶⁹ Lundkvist 1960 p. 84; The delivery information of the districts has been compared with Häme Castle's own bookkeeping, from which it becomes clear that the deliveries were actually used in the castle's own economy; Martti Pänkäläinen has also written about the deliveries directed to the castle from the District of Sääksmäki in his honors work in Finnish history (1968 pp. 53-54).

⁷⁰ Luukko 1957 p. 434.

⁷¹ Voionmaa 1912 pp. 78-79.

⁷² The corvée inventories compiled by district, for example 1542 VA 3676: 85v and 1543 VA 3678: 108-108v; 1539 VA 3668: 149, 150.

⁷³ For example, the construction of the gun tower in 1559 (1559 VA 3868: 64v-67).

⁷⁴ Voionmaa 1912 p. 225, Blomstedt 1960 p. 195; Suvanto 1995 pp. 312-15.

⁷⁵ Suvanto 1995 pp. 325-26.

⁷⁶ Suvanto 1995 p. 316.

⁷⁷ Suvanto 1995 pp. 317, 321, 323; For example, 1549 VA 3716: 57-58; 1565 VA 3995: 46.

⁷⁸ Suvanto 1995 pp. 321, 325; Viikuna A-M 1989 p. 42.

⁷⁹ Suvanto 1995 pp. 339-40; Vilkuna A-M 1998 p. 66.

⁸⁰ Voionmaa 1911 p. 20.

⁸¹ 1545 VA 3683: 117-122.

⁸² Suvanto 1995 p. 95; Vilkuna A-M 1998 p. 67.

⁸³ Hammarström 1956 pp. 228, 235, 237, 240.

⁸⁴ According to Jaakko Masonen, The Ox Road was the most important route from Häme to Varsinais-Suomi from the ninth century at the latest. Markus Hiekkänen has proposed that the Ox Road was cleared as a big thoroughfare only in the thirteenth century, when the transport of tax items to Turku and Stockholm required a useable road. Masonen 1989 pp. 12, 195 and Hiekkänen 1993b p. 39.

⁸⁵ The following presentation of the economic dealings of Häme Castle and the castle fief with the rest of the kingdom is based on calculations made from the account books for the years 1540-1570 from Häme Castle and the bailiwicks of the castle fief of how many years during the period in question the castle and bailiwicks had dealings with the different towns and administrative centers. The number of separate deliveries cannot be calculated because only how many articles were sent altogether during the year to the different centers is generally entered in the accounts. This presentation of the economic dealings can only be considered indicative. If one should wish to thoroughly examine the relative economic importance of the castle and its surroundings to the other centers, he would also have to evaluate the contents of the consignments. That, however, has not been done at this stage. During the years 1540-1571, the deliveries to Stockholm were twenty per year, deliveries directed toward the markets of Turku or Turku Castle were eight per year.

⁸⁶ Masonen 1989 pp. 61, 62.

⁸⁷ Vilkuna A-M 1998 pp. 70-71

⁸⁸ Masonen 1989 pp. 81, 83.

⁸⁹ Vilkuna A-M 1998 p. 71.

⁹⁰ Kerkkonen 1939 pp. 42-43; Renvall 1949 pp. 30, 31.

⁹¹ According to Kerkkonen, the peasants of the Parish of Helsinki carried on a timber trade with Stockholm Castle (Kerkkonen 1965 p. 142), and consequently the region had specialized in timber production; 1549 VA 3720: 43-43v.

⁹² During the years 1540-1571, there were contacts from Häme Castle to Porvoo during five years, and of these three were before the founding of Helsinki. During the years 1550-1571, there were communications with Helsinki during seven years, and consequently Helsinki soon became the most important point of delivery on the south coast.

⁹³ Kerkkonen 1965 p. 137.

⁹⁴ Viipuri was the castle's most important partner in collaboration in the east. During the years 1540-1571, there were deliveries to Olavinlinna during only one year, and there were deliveries directed to Viipuri during eight years; 1548 VA 3700: 2; 1545 VA 3687: 37.

⁹⁵ During the years 1540-1570, to Stockholm during 10 years, to Helsinki during 9 years, to Turku during 4 years and to Viipuri during 2 years.

⁹⁶ During the years 1568-1570, an abundance of hemp, sailcloth, tar, hides, foodstuffs and money was delivered from District of Sääksmäki to Stockholm and to the fleet (Pänkäläinen 1968 p. 36).

⁹⁷ Voionmaa 1912 pp. 222-23; Luukko 1957 pp. 526-27.

⁹⁸ On the annual payroll each year are about ten hired men and sometimes also a few maids, on which point one cannot say whether they were auxiliary agricultural labor or artisan's helpers. Possibly they functioned according to need in different capacities. And so the hired men and maids whose more precise function is not stated are divided equally between the primary and secondary sectors.

⁹⁹ *Knekt* is, in a military connection, a designation for an infantry soldier, which has come down from a German infantry organization (*landsknektorganisationen*). The designation became established in Sweden through Gustavus Vasa's domestic *huovi* organization. During the time of Gustavus II Adolphus, the designation *knekt* was replaced by the word *soldat* (soldier) (Svensk Uppslagsbok, band 16, Malmö 1956).

¹⁰⁰ In 1555, Gustavus Vasa wrote a letter to the commandant of Häme Castle, Herman Fleming. The king was worried about the excessive independence of the bailiffs of the estate bailiwicks in their functions. These bailiffs became burdensome to the peasants by staying for long periods in the districts. In the king's opinion, the taxes should again be collected at the castle and the bailiffs live between court sessions at the castle, and not with the peasants. Suvanto, however, assumes that the bailiffs did not spend the intervals between court sessions at the castle or with the peasants, but at their own residences (Suvanto 1995 pp. 61-62).

¹⁰¹ Vilkuna A-M 1998 p. 77.

¹⁰² Compare Chapter 2.1.

¹⁰³ Myrdal and Söderberg 1991 pp. 35-36.

¹⁰⁴ Vilkuna A-M 1998 p. 77; Pohjolan-Pirhonen 1973 pp. 293-94.

¹⁰⁵ Suvanto 1995 p. 107.

¹⁰⁶ Suvanto 1995 pp. 116-17; Vilkuna A-M 1989 p. 38.

¹⁰⁷ Kiuasmaa 1962 pp. 107, 545; Suvanto 1995 p. 117.

¹⁰⁸ Lindberg 1964 p. 16; Söderberg 1977 p. 181.

¹⁰⁹ Gardberg 1959 pp. 190, 503.

¹¹⁰ Suvanto 1987 p. 158; Suvanto 1995 p. 172; Ranta 1978 p. 282.

¹¹¹ Nygård 1989 pp. 10, 11, 26.

¹¹² Jutikkala 1957 pp. 188, 189, 198.

¹¹³ The independents (*husman*) are mentioned only in the castle's list of diners: what work they did at the castle, how many there were of them and how long they stayed (1559 VA 3869: 1-50v, 1560 VA 3890: 1-66, 1562 VA 3938: 35-86).

¹¹⁴ Larsson and Österberg 1985 pp. 10-11; Suvanto 1995 p. 195.

¹¹⁵ Nygård 1989 pp. 13, 26, 42, 46; Lehtonen 1983 p. 103; Compare Chapter 3.1.

¹¹⁶ Lehtonen 1983 p. 94; Nygård 1989 p. 42.

¹¹⁷ Vilkuna A-M 1998 p. 81. In the cases that treat of the neglect of building or transport responsibility, the neglected duty is stated precisely. In the cases in issue, a specific function is not stated, and consequently, one can presume the issue's being of longer-term work at the castle. The disputes could not have concerned the neglect of *corvée*, because the *corvée* was handled by the peasants of the castle's nearby parishes, and the incidents in question occurred in the parishes of Pälkäne, Asikkala and Porras.

¹¹⁸ Nygård 1989 pp. 42, 98, 99.

¹¹⁹ Nyström 1936 pp. 250-51; Morell 1986 p. 23.

¹²⁰ Nygård 1989 p.111.

¹²¹ Vilkuna A-M 1989 p. 89.

¹²² Kiuasmaa 1962 pp. 126-27; Vilkuna A-M 1989 p. 89.

¹²³ The baker Kerttu is on the payroll for the year 1541, and in 1569 she still received an annual wage of eight marks (Vilkuna A-M 1989 p. 57); The blacksmith Acustinus is on the payroll for the first time for fiscal year 1529/1530, and he is still referred to in the payroll for the year 1560 (Vilkuna A-M 1989 p. 46).

¹²⁴ Mäkelä 1989 pp. 86-87.

¹²⁵ 1540 VA 3670: 79-79v; Tarkiainen 1990 p. 54.

¹²⁶ The best picture of the visitors is obtained from the diners' lists for the years 1559, 1560 and 1562, in which are entered all those taking their meals at the castle.

¹²⁷ In the mid-sixteenth century, the designation lady (*fru*) was used only for Lady Kaarina of Harviala in Häme. The noblemen's spouses and widows were wives (*hustru*).

¹²⁸ The designation lord (*herr*) was used in the sixteenth century only for high ranking noblemen.

¹²⁹ Vilkuna A-M 1998 p. 84.

¹³⁰ Pajuoja 1991 pp. 22-24.

¹³¹ See the economic buildings of the landed estates Vilkuna A-M 2001 s.159-160.

¹³² According to Myrdal, increasing field area with their own new clearings was not included in the methods of the royal estates. Apparently, new cultivation was practiced only on virgin land cleared on the peasant farms. If new fields were brought under cultivation on the royal estates, it was a matter of grassland (*linda*) farming (Myrdal and Söderberg 1991 p. 341).

¹³³ Suvanto 1976 p. 127; Palmunen 1965 p. 14.

¹³⁴ Vilkuna A-M 1998 pp. 85-86.

¹³⁵ Only those persons are listed as workers on the landed estates in Appendix 1 after whose name is entered the words landed estate or who are grouped under the heading landed estate.

¹³⁶ Vilkuna A-M 1989 p. 77; Jokipii 1973 p. 85.

¹³⁷ Olsson 1994 pp. 48-49.

¹³⁸ Vilkuna A-M 1989 pp. 77-78.

¹³⁹ It was still common at the beginning of the nineteenth century in Sweden that work in the cowshed was directed by a *deja*. She was responsible for the feeding of the animals and the handling of the milk. Gradually, the status of the designation *deja* changed so that at the beginning of the nineteenth century *deja* signified a cowshed maid who fed the cattle (Olsson 1994 pp. 55-56).

¹⁴⁰ To construction *corvée* belonged, among other things, clay hauling, limeburning, brickmaking, hod carrying and foundation work.

¹⁴¹ A wage was paid to Mats the mason from the fief of Kymenkartano for building the gate tower; Compare Chapter 5.5.

¹⁴² Ferm 1990 p. 198.

¹⁴³ For example, Janakkala (1544 VA 3683: 115-116v), Renko (1545 VA 3688: 108v-109v) and Lehijärvi (1545 VA 3678: 108-108v). In all these cases, the fall seeding and milling of the grain belonged to the same parish.

¹⁴⁴ Voionmaa 1912 p. 306.

¹⁴⁵ Orrman 1987 pp. 169-88. In Uusimaa, Varsinais-Suomi and Satakunta, the permanent population at the end of the Iron Age was in regions that were formerly Littorina Sea bottom. On top of hard and unyielding clay in the former sea-bottom fields was a lighter, sandy loam that was easier to cultivate, even with primitive implements.

¹⁴⁶ The map in the National Archives of Sweden has been dated with respect to its appearance and quality to the beginning of the seventeenth century. The Finnish researchers consider the map's having been made in the mid-seventeenth century at the earliest (Lilius 1989 pp. 8-9; Ripatti 1989 p. 34) or not compiled before the end of the 1730s (Katermaa 1987 pp. 264-66).

¹⁴⁷ 1558 VA 3850: 8v.

¹⁴⁸ Appendix 6.

¹⁴⁹ A barrelful of rye seed covered about 1 1/3 *tunna* areas of field. About one *tunna* area was seeded with a barrelful of barley, and 3/4 of a *tunna* area with a barrelful of oats (Rytkönen 1992 pp. 126-27; Soininen 1974 pp. 116-17, 125, 167); In Myrdal's opinion, the amount of seed varied a little (Myrdal and Söderberg 1991 p. 273).

¹⁵⁰ *Spann* lands are converted to *tunna* areas and hectares with the formula 1 1/2 *spann* lands=1 *tunna* area=1/2 hectare (for example, Luukko 1957 pp. 445, 453).

¹⁵¹ Vilkuna A-M 1998 p. 97.

¹⁵² Oja 1944, pp. 383-84; Virtanen 1957, p. 24; Jokipii 1974 pp. 63, 81.

¹⁵³ Luukko 1957 p. 446.

¹⁵⁴ Luukko 1957 pp. 431-34, 447-48. The largest peasant farms in the District of Hattula were held by Klaus Knutti's son at Renko's Iso-Luolaja (34 2/3 *tunna* areas, or about 17.3 hectares), Erkki Klementti's son at Lehijärvi's Ihalempi (24 *tunna* areas, or about 12 hectares) and Juho Juho's son at Hattula's Hurttala (20 *tunna* areas, or about 10 hectares).

¹⁵⁵ Appendix 6.

¹⁵⁶ Suvanto 1976 p. 197; Luukko 1957 p. 456.

¹⁵⁷ Läntinen 1981 p. 57.

- ¹⁵⁸ Läntinen 1978 pp. 120, 163; The price data presented by Nummela and Karonen also support the conception that rye became prevalent in Häme at the end of the sixteenth century. At the beginning of their research period, rye was clearly more expensive than barley or oats. An evening out of the price difference was, however, the general trend. Supply and demand, of course, affected the formation of price, but one can assume that a general estimation also had an effect on the matter (Nummela and Karonen 1993 pp. 48, 50).
- ¹⁵⁹ Myrdal and Söderberg 1991 pp. 78-80, 265; Jokipii 1974 pp. 74, 77-78; Luukko 1957 p. 456-57.
- ¹⁶⁰ Myrdal and Söderberg 1991 pp. 265-66; Söderberg 1977 p. 238.
- ¹⁶¹ Oja 1944 pp. 383-84; Jokipii 1973 p. 81; Salonen 1915 p. 2; Kerkkonen 1939 p. 75; Appendix 6.
- ¹⁶² Salonen 1915 p. 2; Ramsay 1924 pp. 300-302; Ström 1932 pp. 10, 28-29; Kerkkonen 1939 pp. 76-78; Kerkkonen 1965 p. 102; Lehtinen 1967 pp. 96, 100-102; Jokipii 1973 pp. 81-82.
- ¹⁶³ Läntinen 1981 pp. 55-56.
- ¹⁶⁴ Harnesk 1990 p. 187; Myrdal and Söderberg 1991 p. 266.
- ¹⁶⁵ Vilku A-M 1998 pp. 259-60, 267; Myrdal and Söderberg 1991 p. 269.
- ¹⁶⁶ Vilku A-M 1998 p.260; Suvanto 1976 p. 197; Vilku A-M 1995 p. 125; Myrdal and Söderberg 1991 pp. 269-72.
- ¹⁶⁷ Söderberg U. 1977 pp. 222-23; Myrdal and Söderberg 1991 p. 270; Österberg 1977 p. 223.
- ¹⁶⁸ Suvanto 1976 p. 197.
- ¹⁶⁹ Appendix 6; Luukko 1957 p. 460; Suvanto 1985 p. 771.
- ¹⁷⁰ Appendix 6; Vilku A-M 1998 p. 264.
- ¹⁷¹ Luukko 1957 pp. 461-63; Myrdal and Söderberg 1991 pp. 319-20; Jokipii 1974 p. 86.
- ¹⁷² Vilku A-M 1998 s. 265.
- ¹⁷³ Luukko 1957 p. 468.
- ¹⁷⁴ Jokipii 1974 pp. 87-88; Luukko 1957 p. 467.
- ¹⁷⁵ Myrdal and Söderberg 1991 p. 273.
- ¹⁷⁶ Vilku A-M 1998 s. 258.
- ¹⁷⁷ Suvanto 1995 p. 95. The years 1563 and 1570 were also years of crop failure. There are no crop data available for Häme Castle from these years.
- ¹⁷⁸ Myrdal and Söderberg 1991 pp. 276, 286-90; de Maddalena 1974 pp. 336-37.
- ¹⁷⁹ Arwidsson 1851 pp. 106, 363; Oja 1944 p. 169; Söderberg 1977 p. 223; Myrdal and Söderberg 1991 p. 292.
- ¹⁸⁰ Ramsay 1924 p. 300; Allardt 1925 p. 141; Kerkkonen 1939 p. 79; Lehtinen 1967 p. 102. The yield for the cattle estate of Koivisto is from the years 1562-1567; Salonen 1915 p. 3.
- ¹⁸¹ Kerkkonen 1939 pp. 74-78; Ström 1932 pp. 10, 20.
- ¹⁸² Myrdal and Söderberg 1991 p. 286; Luukko 1957 p. 457. Luukko bases his estimate on the assumption that the peasants' yields were to some degree weaker than those of Häme's royal estates.
- ¹⁸³ Vilku A-M 1998 pp. 258-260; Luukko 1957 p. 460.
- ¹⁸⁴ Kerkkonen 1939 pp. 74-77; Ström 1932 p. 10; Salonen 1915 p. 3; Läntinen 1981 pp. 55-56.
- ¹⁸⁵ Ramsay 1924 p. 302.
- ¹⁸⁶ Eronen 1990 p. 235; Briffa, Bartholin, Eckstein, Jones, Karlén, Schweingruber and Zetterberg 1990 pp. 434, 438, 439.
- ¹⁸⁷ Myrdal and Söderberg 1991 p. 360.
- ¹⁸⁸ Soininen 1974 p. 64.
- ¹⁸⁹ Orrman 1995 pp. 95-96, 102; Salonen 1915 p. 4; Kerkkonen 1939 pp. 74, 87; Jokipii 1973 p. 81.
- ¹⁹⁰ Vilku A-M 1998 p. 267; Myrdal and Söderberg 1991 pp. 373, 374.
- ¹⁹¹ Luukko 1957 p. 468; The burnbeat cultivation practiced on the landed estate of Ruissalo produced an average 6.3 yield of rye. This was considerably more than the yield of field rye on the landed estate of Iso-Heikkilä (3.9) (Oja 1944 p. 169).
- ¹⁹² Kerkkonen 1939 p. 87; Orrman 1995 p. 104; Virtanen 1957 p. 27; Myrdal and Söderberg 1991 pp. 374-75.
- ¹⁹³ Myrdal and Söderberg 1991 pp. 377-78; In the opinion of Eino Jutikkala, one cannot draw the conclusion on the basis of Myrdal's and Söderberg's results that burnbeat area accounted for only a 1/20th share of the crop on the peasant farms also (Jutikkala 1992 p. 160); Vilku A-M 1998 p. 267.
- ¹⁹⁴ For example, Gustaf I's registratur XXIII 1552 1905 pp. 17-19; Nyström 1936 pp. 17-19.
- ¹⁹⁵ Arwidsson 1851 pp. 105-106, 109, 363-64; Säihke 1963 p. 62.
- ¹⁹⁶ There is no mention in the castle's accounting where the different animals were cared for. By using to advantage connections concerning stock raising (for example, the joint accounts prepared for the landed estates of Ojoinen and Saarinen during entries made in different fiscal years 1549-1554) one can get a clear picture of how the livestock were situated among the main castle and the landed estates.
- ¹⁹⁷ Also, the data on the animals' feeding support the foregoing impression. During the years 1541 and 1543, hay was fed to the foals, the horses and the oxen at the main castle. The hogs and young pigs were fed barley both at the main castle and on the landed estates during the year 1543.
- ¹⁹⁸ Vilku A-M 1998 p. 124.
- ¹⁹⁹ Voionmaa 1912 p. 271.
- ²⁰⁰ Luukko 1957 pp. 495, 498-99.
- ²⁰¹ Vilku A-M 1998 pp. 268-70.
- ²⁰² Vilku A-M 1998 pp. 268-70.
- ²⁰³ Vilku A-M 1998 p. 279.
- ²⁰⁴ 1 Häme *lispund* = 1½ Stockholm *lispund*.
- ²⁰⁵ Virtanen 1957 pp. 31-32; Säihke 1963 p. 65. Säihke doesn't mention what *lispund* she uses. From the context, one can infer that she meant Stockholm *lispund*.
- ²⁰⁶ The average numbers of cows on the estates during the years 1545-1575 were as follows: Iso-Heikkilä 87, Ruissalo 43 and Kuusisto 43 (Säihke 1963 pp. 66 and 54).
- ²⁰⁷ Ramsay 1924 p. 307; Jokipii 1974 pp. 187-88; Forssell 1884 p. 101; Myrdal and Söderberg 1991 p. 293.

- ²⁰⁸ Vilkuna A-M 1998 s. 272; Billy goats and nanny goats were still about ½ percent of the animal units in the mid-1540s. After that, one or two billy goats are mentioned in only a few years.
- ²⁰⁹ Myrdal and Söderberg 1991 p. 162; Finland's silver-tax rolls 1571 III Häme 1944.
- ²¹⁰ Suvanto 1995 pp. 96, 142-43.
- ²¹¹ Myrdal and Söderberg 1991 p. 268.
- ²¹² Luukko 1957 pp. 504-505.
- ²¹³ Vilkuna A-M 1998 p. 136; Luukko 1957 pp. 506-07.
- ²¹⁴ Luukko 1957 pp. 506-07; Karrimaa 1986 pp. 56, 68.
- ²¹⁵ Säihke 1963 pp. 61-62.
- ²¹⁶ Forssell 1884 pp. 111-12.
- ²¹⁷ There is mention of the delivery in the account for 1553/1554. In connection with the entry, however, is an auditor's comment that the arrival of the rams should have been reported already in the previous year's account (1554 VA 3764: 12); Voionmaa 1911 p. 25.
- ²¹⁸ Vilkuna A-M 1998 pp. 268-70; In 1565, there were 118 5/24 animal units on the estate of Mustiala, and in 1563, there were 136 5/24 animal units on the Royal Estate of Hollola (Luukko 1957 p. 512).
- ²¹⁹ Säihke 1963 p. 54.
- ²²⁰ Ström 1932 pp. 11-12; Luukko 1950 pp. 285-86, 308-309; Lehtinen 1967 p. 103; Jokipii 1974 p. 171.
- ²²¹ Salonen 1915 p. 7; Ramsay 1924 p. 307; Kerkkonen 1939 pp. 89-96; Lintinen 1981 pp. 54-56.
- ²²² Forssell 1884 p. 93.
- ²²³ Forssell 1884 p. 93. It isn't clear from Forssell's text whether his count included calves, lambs and piglets. He mentions only that calves are not always reported separately in the livestock inventories. The calves, lambs and piglets are included in Häme Castle's figures for 1555.
- ²²⁴ Vilkuna A-M 1998 pp. 133, 173.
- ²²⁵ Vilkuna A-M 1998 p. 134.
- ²²⁶ There were fishing trips from the castle also *uthi i sundet i Nordan* (1558 VA 3850: 21v). Luukko mentions that in 1574 the castle's two fishermen still left, in accordance with the old custom, on a fishing trip to the northern wilderness (Luukko 1957 p. 543).
- ²²⁷ Talve 1958 p. 22; Granlund 1960 pp. 666-68; Luukko 1959 pp. 302-307; Niitemaa 1959 pp. 354-65.
- ²²⁸ Appendix I.
- ²²⁹ Vilkuna A-M 1998 p. 140; Luukko 1957 p. 543; Virtanen 1960 pp. 200-203.
- ²³⁰ Rytkönen 1992 p. 159; Only fresh fish was delivered to the castle from the District of Hattula; for example, 1541 VA 3671: 141-142v. Ordinarily, about 18 *lispund* of pike bellies were delivered annually.
- ²³¹ Luukko 1957 pp. 532-40.
- ²³² Talve 1958 pp. 21-22; Vilkuna K. 1959 pp. 373-74.
- ²³³ Kerkkonen 1965 pp. 17-19; Rytkönen 1992 p. 159; Virrankoski 1980 p. 219.
- ²³⁴ Ankkapurha and Valkeakoski are made mention of as being in possession of the castle in 1529. Väaksy, on the other hand, was not yet the Crown's eelery. The eels were delivered to the castle as a tax delivery of the peasants of the District of Ylinen (KA fogdarnas räkenskaper vol I pp. 56, 59); Suvanto 1995 pp. 195-96.
- ²³⁵ Luukko 1957 p. 542; Kaukiainen 1980 pp. 62-63.
- ²³⁶ Vilkuna A-M 1989 pp. 41, 48, 63; Vilkuna A-M 1998 p. 143.
- ²³⁷ The term *spikelaxar* was used for cold-smoked salmon (1540 VA 3670: 95v and 1542 VA 3675: 74v); Vilkuna K. 1975 p. 361; According to Kerkkonen, *spikelaxar* meant dried salmon (Kerkkonen 1939 p. 99). In the account for 1529/1530 from Häme Castle is an entry supporting that conception: *spikelax torkadh i år xii hela laxa* (KA fogdarnas räkenskaper vol I p. 59).
- ²³⁸ Jokipii 1953 p. 130; Vilkuna K 1975 pp. 71-74.
- ²³⁹ Gustaf I:s registratur 1552 XXIII 1905 pp. 17-19; Vilkuna A-M 1990 p. 77.
- ²⁴⁰ 1559 VA 3869: 2-2v.
- ²⁴¹ Based on Appendix 2. Included are only the professional trades clearly listed as handicraft. Major-domo, cellarer, dormitory matron, boatman and coachman are not included. Of the maids and men, account is taken of only the storehouse maids, who served as weavers.
- ²⁴² Heino 1984 pp. 335-36.
- ²⁴³ *Ossmundjärn, läppejärn* and *stångjärn* were used at Häme Castle. Either Stockholm Castle's iron scribe or Turku Castle's bailiff generally delivered iron to the castle. In 1561, the shipment also included steel (1561 VA 3907: 51v-52).
- ²⁴⁴ Myrdal and Söderberg 1991 pp. 414-15.
- ²⁴⁵ Vilkuna A-M 1998 pp. 146-47. In 1540, there were in the shop 3 big anvils, 1 small anvil and 1 bench anvil. Twenty years later, no change had occurred in the number of anvils.
- ²⁴⁶ The payday for the shoe wage were Shrove Tuesday, Easter, Midsummer, Michaelmas, Saint Martin's Day and Christmas; Kransen 1984 p. 77.
- ²⁴⁷ Vilkuna A-M 1998 pp. 146-47.
- ²⁴⁸ Kankainen, Lempinen and Vuorela 1993 pp. 59-60; The research results from Varikonniemi have later received criticism. It is criticized that the mixing of cultural strata has not been taken into account in the research, and that, consequently, there could be material of human origin from the Iron Age to the twentieth century in the same strata. Varikonniemi's research was discussed in a seminar arranged by the Medieval Archaeological Society of Finland at Häme Castle on Nov. 22, 1996.
- ²⁴⁹ In 1551, maltsters were hired as an exception, although barley was not cultivated.
- ²⁵⁰ Vuorela 1975 pp. 274, 380. Räsänen 1977 p. 65.
- ²⁵¹ Compare figure 5. p.19..
- ²⁵² Räsänen 1977 pp. 12-15.
- ²⁵³ Simonsson 1957 pp. 283-84; Räsänen 1977 pp. 16-17, 91, 112; Korhonen 1985 pp. 405-406; Seventeen loads of straw were delivered to the castle's brewery cottage in 1543 (1543 VA 3677: 120).

²⁵⁴ Simonsson 1957 p. 285; Räsänen 1997 pp. 18-19; 1541 VA 3671: 143v-144v; No data are preserved on the consumption of spirits at the castle in the sixteenth century. The beverage was not, however, unfamiliar to the people, for a kettle for making spirits was also found in the brewery cottage (the inventory for 1540). The making of spirits became common in the sixteenth century (Voionmaa 1911 p. 26). In the castle lord's private cache was certainly also wine, which was introduced into the Nordic Countries chiefly from Germany.

²⁵⁵ Granlund 1976 pp. 694-96; In addition, a beer called *prytssigh* was brewed, which, according to the amount of malt and hops used in making it, corresponded in quality to lord's beer (1563 VA 3962: 39v); In the ordinance of 1558, it was ordered to make an entry of how much weak beer (*laköll*) was obtained in connection with the brewing of lord's beer and cavalier's beer (Arwidsson 1851 p. 362). In 1559, at Häme Castle, 63 barrels of lord's beer were brewed and 22 barrels of vinegar, in connection with the making of which 50 barrels of weak beer, or *effterlacköll*, were obtained (1559 VA 3868: 31-33v).

²⁵⁶ Arwidsson 1851 pp. 361-62; Vinegar was used only at the bailiff's table, where its share was about one percent of the total consumption of beer.

²⁵⁷ Mäkipelto 1996 pp. 161-62.

²⁵⁸ Arwidsson 1851 p. 362; 1560 VA 3889: 63; Granlund 1976 pp. 694-96; Malminen 1980 pp. 34-35.

²⁵⁹ Heckscher 1935 pp. 86, 96; 1542 VA 3675: 97v; According to Morell's estimate, a tankard held 2.45 liters in the sixteenth century, which is almost as much as the 2.5 liters proposed by Pirinen (Morell 1986 p. 33 and Pirinen 1985 p. 332).

²⁶⁰ The amounts have been converted to liters assuming that the so-called Rostock *tunna* was used at Häme Castle, the capacity of which was 117.5 liters (Morell 1986 p. 33). If a 126-liter-capacity barrel was in use, as Pirinen has determined the Olavinlinna *tunna* to be, 3.5 liters of beer per person were drunk daily at the bailiff's table and 2.6 liters at the servants' table (Pirinen 1985 p. 332).

²⁶¹ Granlund 1976 pp. 694-96; Törnblom 1996 p. 185 bilaga IV; Heckscher 1935 pp. 86-87.

²⁶² Simonsson 1957 pp. 281-85; Granlund 1976 pp. 694-96; Utterström 1978 p. 157.

²⁶³ Granlund 1956 pp. 307-11; 1559 VA 3869: 55; *en bagerstugu ungn in på sloth* (1560 VA 3889: 3v, 43v).

²⁶⁴ 1550 VA 3712:69v; Compare Chapter 7.1.

²⁶⁵ Thun 1986 pp. 87-94.

²⁶⁶ During the years 1559-1561, the annual consumption of cavalier's bread was 734-801 barrels, or an average of 4½ barrels per person per year. Only 5-12 barrels of bolted bread were consumed altogether during the same years.

²⁶⁷ The everyday bread consumed annually during the years 1559-1561 was 344-450 barrels, and so one person consumed 7-9 barrels of bread during a year. Vilkkuna A-M 1998 p. 151-52.

²⁶⁸ Atlas of the Peasant Culture of Finland I 1976 Maps no. 46-47; Räsänen 1980 p. 50; 1550 VA 3712: 1-74.

²⁶⁹ Tawaststjerna 1905 p. 124; Ailio 1917 p. 253.

²⁷⁰ Compare Chapter 3.2.

²⁷¹ Compare Chapter 4.3.

²⁷² Compare Appendix 5.

²⁷³ Mäkipelto 1996 pp. 58-59; A variety of designations were used for the castle's two so-called tables. The bailiff's table could be *fogdebordet*, *fogde och svenne köket*, *fogde och svenne bordet*, *borgbordet* and *svennebordet*. The servants' table was initially called *legefolksköket* and later *legefolksbordet*.

²⁷⁴ *Borgkock*; In 1541, bolted flour was used *på slottet vdi kockhuset* (1541 VA 3671: 98v). The expression *på slottet* does not necessarily mean the cookhouse located in the main castle, for the expression used for the room located in the main castle was *in på slottet*; In fiscal year 1529/1530 salt was used *på slottet i kokahuset* (KA fogderäkenskaper vol 1 p. 48); Ailio 1917 p. 177.

²⁷⁵ Vilkkuna A-M 1998 pp. 156-57; Morell 1995 pp. 115-16.

²⁷⁶ Troels-Lund 1934 p. 18; Mäkipelto 1996 pp. 133-34; Neovius 1906 pp. 104-105; Compare Chapter 7.1.

²⁷⁷ Kransen 1984 pp. 64-68; Franzen 1961 pp. 192-93.

²⁷⁸ Upmark 1912 pp. 35-36.

²⁷⁹ Södervall 1891-1900 p. 248; Ailio 1917 p. 253.

²⁸⁰ Räsänen 1980 p. 75.

²⁸¹ Gustaf I:s Registratur XXIII 1552 1905 pp. 17-19.

²⁸² Jokipii 1973 p. 93.

²⁸³ The fact that the *fatabur* tower and the *fatabur* cottage were really separate is revealed by a 1541 source entry in which both are mentioned in the same connection: three cowhides were placed over the windows of the *fatabur* tower, and the windows of the *fatabur* cottage were covered with the hides of young stock (1541 VA 3674: 118v and 119). In 1559, a baking oven with a smoke pipe was built in the *fatabur* cottage (1559 VA 3869: 55); Pykkänen 1967 p. 8.

²⁸⁴ Leskinen 1995 p. 81; Vilkkuna A-M 1989 p. 48; Pykkänen 1967 p. 8.

²⁸⁵ Voionmaa 1911 p. 26; Appendix 7.

²⁸⁶ Pykkänen 1967 pp. 8-9.

²⁸⁷ Appendix 8.

²⁸⁸ Kaukonen 1961 pp. 66-69; 1553 VA 3751: 20.

²⁸⁹ Kaukonen 1961 pp. 6, 11, 66; 1561 VA 3910: 5;

Pykkänen 1967 p. 18; Vilkkuna K. 1970 pp. 144-49.

Täpete has been used to mean scarves, quilts, carpets and wall covering (Franzen 1957 pp. 76-81). In Finland, the word *täpete* is not considered to mean wall covering.

²⁹⁰ Pykkänen 1967 pp. 27, 32-33; 1556 VA 3798: 11v-13v.

²⁹¹ Sheets are spoken of in the sources in pairs because the nobility used both under-sheets and top-sheets; The royal fusiliers (*skyttare*) used, in addition to the other bedclothes, 4½ pairs of sheets (1549 VA 3710: 13-13v).

²⁹² Kaukonen 1961 pp. 12-14; Other textiles included in the estate were one 9-ell-long tablecloth and one hand towel.

²⁹³ Other examples of deliveries: In 1542, 10 ryas, 24 bedcovers and 20 blankets were sent to the royal court (1542 VA 3682: 148v); Stockholm Castle's *fatabur* matron Ingerdt received on July 30, 1547, that she had received from Häme Castle 30 bedcovers, 23 blankets and 10 ryas (1547 VA 3696: 106v). In 1552, 11 ryas, 50 bedcovers and 16 blankets were delivered to the king (1552 VA 3713: 16-23v); In 1556, 6 ryas, 32 bedcovers, 18 blankets and 2 *tapetti* left the castle for Stockholm (1556 VA 3795: 36-36v, 3798: 10v-11); In 1560, 6 pieces (236 ells) of light-colored broadcloth (*huitcläde*), and of (*grätcläde*) 3 pieces (109 ells), were delivered to the fabric scribe at Stockholm Castle (1560 VA 3889: 58v); The shipments of 1555 and 1556 appear to have emptied the *fatabur* (Appendix 8).

²⁹⁴ Kaukonen 1946 p. 36; Vilkuna A-M 1998 p. 167.

²⁹⁵ Pylkkänen 1967 p. 27; 1540 VA 3670: 85-85v; Kaukonen 1946 p. 23; 1539 VA 3669: 27.

²⁹⁶ There is an entry in the *fatabur* account from 1557 that 6 ells of black Brabantine broadcloth were given to the undercook (1557 VA 3798: 35, 37). Brabantine fabric was inventoried in the *fatabur* in 1555, for example (1555 VA 3766: 22v-25).

²⁹⁷ Yrwing 1963 pp. 465-68; A few years' wages were also paid in fabrics made in the German areas of Stendal (*Stendelsk*), Mülhausen (*Mölnick*), Meissen (*Misnisk*) and Westfalen (*Vestfelisk*). Vilkuna A-M 1998 pp. 168-69.

²⁹⁸ Voionmaa 1911 p. 25.

²⁹⁹ Appendix 8; Vilkuna A-M 1998 pp. 168-69; Franzen 1957 pp. 76-81; Franzen 1961 pp. 192-93.

³⁰⁰ Appendices 7 and 8.

³⁰¹ Appendix 9.

³⁰² Vilkuna A-M 1998 p. 171; Gardberg 1959 pp. 164, 189.

³⁰³ Vilkuna A-M 1998 p. 171. Evidently, Klemetti Lauri's son's (Clemet Larsson's) job included a matter of wheels, necessary for the transport of a quarter-culverin.

³⁰⁴ Vilkuna A-M 1998 p. 171.

³⁰⁵ Paulaharju 1988 p. 156.

³⁰⁶ Gardberg 1959 p. 190; 1544 VA 3682: 100.

³⁰⁷ Gardberg 1959 pp. 508-509.

³⁰⁸ Suvanto 1995 p. 172.

³⁰⁹ Suvanto 1995 p. 174-75, 177.

³¹⁰ Gardberg 1959 pp. 324, 325, 436, 437; Söderberg 1977 p. 181; Gardberg 1979 pp. 83-87; Sinisalo 1987 pp. 284-96; Uotila 1994 p. 30.

³¹¹ Gardberg 1959 pp. 325, 329, 433; Henrik von Cöllen was in Sweden already in the year 1548, at least (Söderberg V. 1977 p. 181).

³¹² Vilkuna A-M 1998 pp. 174.

³¹³ Voionmaa 1911 p. 21.

³¹⁴ Vilkuna A-M 1998 p. 175.

³¹⁵ Neither was the construction material used in the gun tower in 1561. Vilkuna A-M 1998 p. 175.

³¹⁶ During earlier years, little work had been done for fortification. In 1540, the defenses had been touched up by covering the fortifications with birch bark and whitewashing the timbers of the curtain wall (1540 VA 3670: 91). In 1547, the gate tower was built (1547 VA 3696: 67).

³¹⁷ The number of bricks made in 1560 really seems large. The matter is related in the account book as follows: "There have been 538 thousand, 3 hundred and 80 bricks cast and fired in the castle's brickoven. The days of corvée used in this were 2453." During the same year, 10 thousand, 8 hundred bricks were used in repair work on the brickoven and 20 thousand on the castle. There remained in store 507 thousand, 5 hundred, 80 bricks. The sources' reported number of bricks, thus, seems right.

³¹⁸ Vilkuna A-M 1998 pp. 175-77, Suvanto 1995 p. 312.

³¹⁹ Vilkuna A-M 1998 p. 177; Gardberg 1959 pp. 331-33.

³²⁰ One can presume their all being masons because all are entered under the professional designation "*murmestare*" (Appendix 9).

³²¹ Gardberg 1959 pp. 332, 358.

³²² Of the 32 masons who worked at Häme Castle during the years 1559-1569, only Nils Henriksson, who worked in 1559, is mentioned in the index of persons in Gardberg's research (Gardberg 1959 pp. 339, 397). Turku Castle's mason Nils Henriksson was on Duke John's payroll in 1559, and so, it is hardly a question of his being Häme Castle's mason Nils Henriksson. The absence of Häme Castle's masons from Turku Castle's rolls indicates that it was not a matter of professionals moving over a more extensive area.

³²³ Suvanto 1995 pp. 176, 177; Niitemaa 1959 p. 451; Hiekkänen 1994 pp. 250-52.

³²⁴ Vilkuna A-M 1998 p. 178; Voionmaa 1911 p. 24; According to Ahvenainen, it was planned to build the water saw at Häme Castle in 1560, but the project remained unrealized (Ahvenainen 1984 p. 12). The parts forged for the sawmill and the parts cut at the castle, however, indicate that the sawing operation had really begun.

³²⁵ Almquist 1917 p. 339; Almquist 1922-1923 p. 92; Kansallinen elämäkerrasto I p. 189; Anthoni 1970 p. 237; Elgenstierna 1925 p. 220; Gustaf I:s Registratur XX 1549 1902 pp. 216-17; Gustaf I:s Registratur XXIII 1552, 1905 pp. 17-19; Suvanto 1995 p. 52.

³²⁶ Renvall 1962 pp. 47-62.

³²⁷ Kansallinen elämäkerrasto V p. 210; Vilkuna A-M 1998 pp. 179-80.

³²⁸ Kiuasmaa 1962 p. 29.

³²⁹ Almquist 1917 pp. 117-19; Renvall 1949 pp. 138-40; Blomstedt 1960 pp. 41-42.

³³⁰ Fritz 1972:1 pp. 156-59; Gustaf I:s Registratur XIV 1542 1893, p. 90.

³³¹ Almquist 1919-1922, p. 473; Jöns Brun received his letter of appointment on Oct. 26, 1555, and Erik Spåra began his term of office (1562 VA 3938: 42).

³³² Blomstedt 1960 p. 42; Kiuasmaa 1962 pp. 55, 413.

³³³ Gustaf I:s Registratur XX 1549 1902 pp. 216-17.

- ³³⁴ Gustaf I:s Registratur XX 1549 1902 pp. 216-17; Gustaf I:s Registratur XXIII 1552 1905 pp. 17-19.
- ³³⁵ Compare Chapter 5.3.
- ³³⁶ Compare Chapter 4.4.
- ³³⁷ Gustaf I:s Registratur XXII 1551 1904 p. 405.
- ³³⁸ Suvanto 1995 p. 51; Vilkuna A-M 1998 p. 183.
- ³³⁹ Kiuasmaa 1962 p. 105.
- ³⁴⁰ Kiuasmaa 1962 pp. 31, 46, 216-17.
- ³⁴¹ Vilkuna A-M 1989 pp. 25, 31, 34.
- ³⁴² Almquist 1917 p. 122; Renvall 1947 pp. 159-62, 185-88; Odén 1955 p. 67; Kiuasmaa 1962 pp. 44-45; Styffe 1856 pp. 1-2.
- ³⁴³ Vilkuna A-M 1995 p. 22, 24.
- ³⁴⁴ Vilkuna A-M 1995 pp. 24, 25.
- ³⁴⁵ Vilkuna A-M 1989 pp. 33, 43; Appendix 3.
- ³⁴⁶ Vilkuna A-M 1989 p. 33; Kiuasmaa 1962 pp. 107-108, 227, 250, 545.
- ³⁴⁷ Vilkuna A-M 1989 pp. 33-34; Kiuasmaa 1962 pp. 108-09; Pohjolan-Pirhonen 1973 p. 291.
- ³⁴⁸ Blomstedt 1960 p. 288; Pirinen 1991 pp. 291-99.
- ³⁴⁹ Vilkuna A-M 1998 p. 188; Agricola Rucouskirja I: 61, 1987 edition p. 35; Hiekkänen 1993 p. 70.
- ³⁵⁰ 1541 VA 3683: 128v-129.
- ³⁵¹ The coal pan (*kollpanno*) was entered in the 1541 inventory (1541 VA 3683: 129).
- ³⁵² Vilkuna A-M 1989 p. 36; Pohjolan-Pirhonen 1973 p. 294.
- ³⁵³ Vilkuna A-M 1998 p. 189; Rytönen 1992 p. 264.
- ³⁵⁴ Vilkuna A-M 1998 p. 189; Blomstedt 1958 pp. 93-94.
- ³⁵⁵ Appendix 3; The bailiff's attendants' cash wage was 20 marks per year and the squires' 16 marks per year (Vilkuna A-M 1989 pp. 38-41). In some years' payrolls, the designation *slottsliggiare* is used for the bailiff's attendants and *slottstienere* for the squires (1559 VA 3869: 59-59v); Kiuasmaa 1962 pp. 28, 29.
- ³⁵⁶ Appendix 3; Viljanti 1957 p. 82; Voionmaa 1912 p. 324.
- ³⁵⁷ Vilkuna A-M 1989 pp. 37-39; Almquist 1917 pp. 476-87.
- ³⁵⁸ Vilkuna A-M 1989 pp. 38-41; Vilkuna A-M 1998 p. 191.
- ³⁵⁹ The castle's payrolls from these years are well preserved and very comparable.
- ³⁶⁰ Odén 1967 p. 4; Larsson 1967 pp. 256-58; Tawaststjerna 1905 p. 126; Viljanti 1957 p. 43.
- ³⁶¹ Larsson 1967 p. 250; Viljanti 1957 p. 116; The designation *sventjänare* is used in the sources for the soldiers belonging to the cavalry, and the soldiers belonging to the infantry are *landsknektar* (for example, 1562 VA 3938: 35v and 39v).
- ³⁶² Appendices 4 and 5.
- ³⁶³ Appendix 3.
- ³⁶⁴ Vilkuna A-M 1998 p. 193; Tawaststjerna 1905 p. 158; Viljanti 1957 p. 210.
- ³⁶⁵ Tawaststjerna 1905 pp. 147, 150-51, 159; Vilkuna A-M 1998 pp. 193-94.
- ³⁶⁶ Larsson 1967 p. 264.
- ³⁶⁷ Tawaststjerna 1905 pp. 126, 127, 136; Vilkuna A-M 1998 p. 194.
- ³⁶⁸ Viljanti 1957 pp. 550-51, 555-56, 559, 575; Vilkuna A-M 1998 pp. 194-95.
- ³⁶⁹ Odén 1955 pp. 159-62.
- ³⁷⁰ Appendix 2; Appendix 10; Vilkuna A-M 1998 pp. 195-96.
- ³⁷¹ Kiuasmaa 1962 p. 111.
- ³⁷² Arvo Viljanti, who has widely researched the warfare of Gustavus Vasa's time, is not familiar with the weapons production of Häme Castle (Viljanti 1957 p. 259).
- ³⁷³ Tawaststjerna 1905 p. 163.
- ³⁷⁴ In 1571, four workhorses were delivered from the castle to Lasse Jöranson, who was feed-master of the artillery's horses (1571 VA 4068: 25v); Forssell 1884 pp. 113-14; Jokipii 1974 p. 230; Kiuasmaa 1962 p. 353.
- ³⁷⁵ Jokipii 1974 p. 230; Kiuasmaa 1962 pp. 352, 360.
- ³⁷⁶ Appendix 3.
- ³⁷⁷ Ailio 1917 pp. 258-59; Luukko 1957 p. 499; Viljanti 1957 p. 80; Jokipii 1972 pp. 142-47.
- ³⁷⁸ Few workhorses were delivered to the castle. In one case, a peasant settled his fine by giving a workhorse to the castle. The workhorses obtained otherwise were included in the Crown's share of the wills of clergymen (1542 VA 3675: 72); The transaction was extremely profitable for the bailiff, for he got 50 marks for the horse. This was 10 marks more than the annual salary Isak received for his bailiff duties.
- ³⁷⁹ Vilkuna A-M 1998 p. 199; The destinations of 29 of the horses are not known.
- ³⁸⁰ Jokipii 1974 p. 235.
- ³⁸¹ 1541 VA 3671: 143v-144v; 1543 VA 3677: 74, 98v; 1546 VA 3692: 121; 1549 VA 3909: 4v, 33.
- ³⁸² Hammarström 1956 pp. 398-99.
- ³⁸³ 1550 VA 3712: 3v. The craftsmen who dined at the bailiff's table were, for example, the blacksmiths, the fullers, the shoemakers, the cooks, the coopers, the brewers, the women of the *fatabur*, the bakers and the dormitory matrons. Of the craftsmen who dined at the servants' table, there were, for example, the miller and the charcoal makers (for example, 1559 VA 3869: 2, 2v, 3v); Compare Chapter 5.2., in which the concept table is discussed.
- ³⁸⁴ Heckscher 1935 pp. 94-98 and bilaga III; Morell 1986 pp. 1-2; Utterström 1978 p. 130.
- ³⁸⁵ Morell 1986.
- ³⁸⁶ Odén 1955 pp. 336-42; Morell 1986 pp. 9-11; Utterström 1978 p. 130.
- ³⁸⁷ Heckscher 1935 p. 98; Nyström 1936 pp. 250-51.
- ³⁸⁸ Morell 1986 p. 21.
- ³⁸⁹ Utterström 1978 p. 131; Morell 1986 pp. 27-28.
- ³⁹⁰ Morell 1986 pp. 35-36.
- ³⁹¹ Morell 1986 p. 27.

³⁹² 1548 VA 3700: 57-60; 1550 VA 3712: 1-74; 1559 VA 3868: 96-101; 1560 VA 3889: 64-67; 1561 VA 3907: 65-69. The food-consumption calculations for the years 1559-1561 are made with Stockholm measures, which facilitates changing the figures to modern measures. The food-consumption data have been compared to other consumption data in the accounts of Häme Castle and have been found congruent. There is an ordinance in connection with the food-consumption inventories for the years 1559-1561. In this is clarified how much grain was used at Häme Castle in baking a barrel of bread and how much malt and hops were used in making different grades of beer. The ordinance's table of weights clears up the weights of different grades of meat in *lispund* and *nål*. Information in the ordinances is used to advantage also in connection with the years 1548 and 1550 (Vilkuna A-M 1995 pp. 171-72).

³⁹³ Utterström's suggested caloric values per 100 grams for different foodstuffs are as follows: rye flour 322, fresh meat 242, barley groats 313, salted meat 177, peas 264, Baltic herring 121, malt 156, salmon 121, butter 610, dried pike 121 and pork 242. The caloric value of barley malt has been calculated as 50% of the caloric value of barley groats because, during beer's fermentation process, the number of calories decreased (Utterstrom 1978 pp. 132, 153-56; Heckscher 1936 p. 93; Morell 1986 p. 26). Of the meat consumed at the bailiff's table at Häme Castle, one third of the calories are calculated in accordance with the caloric values contained in fresh meat and pork, or 242 kcal/100 grams. Of the meat consumption of the servants, which was in largest part sausage, headcheese and beef, the proportion of fresh meat and pork has been calculated as one tenth part

(Vilkuna A-M 1995 p. 167).

³⁹⁴ Morell 1986 pp. 15-16.

³⁹⁵ Appendices 12 and 14.

³⁹⁶ On the estate of Luulaja, fasting was still taking place in 1561 (Harnesk 1990 pp. 184-85).

³⁹⁷ Appendices 11 and 12.

³⁹⁸ Appendices 13 and 14.

³⁹⁹ Appendix 5.

⁴⁰⁰ Morell 1986 p. 38; Harnesk did not make a 25% reduction in the calculations for the estate of Luulaja because he wanted to compare his results with Heckscher's calculations (Harnesk 1990 p. 183).

⁴⁰¹ Heckscher 1935 p. 87.

⁴⁰² Because the weight data of the ordinances for the different kinds of meat are available for the years 1559-1561, it is possible to calculate the proportion of the different kinds of meat out of the entire consumption for these years.

⁴⁰³ Mäkipelto 1996 p. 76.

⁴⁰⁴ Myrdal and Söderberg 1991 pp. 98-99.

⁴⁰⁵ Examined in terms of source criticism, the years 1559-1561 yield the most reliable results because the fewest problems occur in changing the units of measure of these years into modern measures.

⁴⁰⁶ Hockman 1990 pp. 28-30.

⁴⁰⁷ Andersson 1954 pp. 29-34; Gardberg 1986 pp. 84-89.

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The System of Measures in Use at Häme Castle in the Sixteenth Century

The different provinces and districts of the Kingdom of Sweden had their own systems of measurement in the sixteenth century, and even different estates could have their own weights and measures in use. The Royal Proclamation of Weights and Measures issued in 1665 was the first attempt to standardize the kingdom's system of measures.¹ In using the bailiff's account data as source material, it is important to know which system of measures the account data are entered in accordance with. In the following, the weight measures used at Häme Castle in the sixteenth century, as well as the measures of volume of dry and wet goods and monetary units, are clarified. Also clarified is the relationship of Häme Castle's measures to the measures of Stockholm, which were considered the official measures of the kingdom. In Stockholm, the weights and measures were usually smaller than elsewhere in the country, and, consequently, items measured by Stockholm measures yielded greater quantities than elsewhere. For example, butter was sent from Häme Castle in 1559 to the royal storehouse in Stockholm, the weight of which by the castle's balance was 31 *lispund*. In the royal storehouse of Stockholm, the weight of the shipment came to 43 *lispund*, 9 *nål*, for the Stockholm *lispund* was 8 *nål* lighter than the *lispund* of Häme Castle.

The collection of taxes in the different parts of the country took place in accordance with the districts' own measures of volume and weights. The accounts for the Crown were also made according to their own systems of measures. In connection with the auditing, the scribes of Stockholm Castle's Accounting Chamber prepared commentaries for the accounts "undervisningarna om mått och vikt," in which they narrated the relationship of the local measures in the accounts being audited to Stockholm's system of measures. In the Accounting Chamber, different summaries and mean values were also calculated from the accounts so that the production and consumption of the Crown's different households could be compared to the norms and ordinances imposed by the king. Häme Castle's account for 1561, for example, was done, otherwise, according to Häme measures, but the castle staff's food consumption was calculated in the Accounting Chamber by the Stockholm system of measures.

Measures of Weight

In Häme, and in all of Finland generally, the oldest measures of weight used were *läst*, *skeppspund*, *lispund*, *nål* and *lod*, whose relationship to each other is as follows:

läst=12 *skeppspund*
skeppspund=20 *lispund*
lispund=20 *nål*, and
nål=32 *lod*.

A Häme *lispund* was 1½ Stockholm *lispund*, or 1 *lispund*, 10 *nål*.²

The changing of goods from measures of weight to measures of volume was common. At that time, the weight of a thing became dependent on how many units of weight were calculated per unit of volume. This being the case, a barrel, which was the most common container, was soon being calculated at varying numbers of *lispund* according to whether there was a matter of butter, meat, fish, bread or, for example, tar involved. In Stockholm, for example, a barrel of butter weighed 16 *lispund*, or about 11 Häme *lispund*.³

In assessing sixteenth-century measures of weight in modern measures, the latest research has produced the following: *skeppspund* was about 132 kg, *lispund* about 6.6 kg and *nål* about 0.330 kg.⁴

Grain Measures

At Häme Castle and in the whole castle fief, the following grain measures were used in the mid-sixteenth century:

läst=12 *pund*
pund=5 *spann*
spann=24 mark *skäppa* or 2 *karpio*.

Originally, there were local differences in most of the grain measures. In Häme, a *pund* was calculated as 5 *spann*, and elsewhere in continental Finland, exclusive of Pohjanmaa, 6 *spann*. In Pohjanmaa, a *pund* went to 8 *spann*. In Sweden, *spann* were even smaller than in Finland, and, consequently, Häme's *spann* was the largest in the entire kingdom. Another significant difference in Häme's grain measures

compared to elsewhere in Finland was that in Häme *skäppa* was used as a measure instead of *kappe*.⁵ Häme Castle's *spann* could be quoted in place of 24 *skäppa*, also 2 *karpio* or 4 quarter-*spann*. In the castle's accounting, *karpio* was seldom used. It even appears that *karpio* was more a unit of measure used by the local people and the scribes of Stockholm favored *skäppa* and quarter-*spann* in copying the accounts.⁶

At Stockholm Castle, the relationship of grain measures was as follows: 1 *läst*=12 *spund*, 1 *spund*=7 *spann* or 8 *spann*, 1 *spann*=4 *fjårding*, 1 *fjårding*=4 *fat*. Häme Castle's *pund*, or 5 *spann*, thus, corresponded to 7 or 8 Stockholm *spann*. Kauko Pirinen has estimated the grain measures in modern measures of volume: *läst*=65 hl, *pund*=5.5 hl, *spann*=90 l, *karpio*=45 l.⁷ *Tunna* was originally a transport barrel and a measure for wet goods, fat goods and salted goods. In the 1550s, *tunna* also came into use in Häme, as elsewhere in the kingdom, as a grain measure. At that time, a *tunna* held one and one-half Häme *spann*.

Liquid Measures

The *tunna* (barrel, or tun), which was divided into quarters and *kanna* (tankards), was used as a container for liquid and wet goods, such as salt fish. There is no precise knowledge of the capacity of the *tunna* used at Häme Castle, and so its size has to be estimated on the basis of other knowledge. The latest research has shown that the beer barrel, as well as the barrel for salted goods, used in Sweden in the sixteenth century was originally the so-called Rostock *tunna* used in the Hansa towns of North Germany, or the same *tunna* that in the sixteenth century was beginning to be used as a grain measure. The capacity of the *tunna* was 117.5 liters and was calculated to hold 48 so-called Rostock *kanna*, in which case one *kanna* was 2.45 liters.⁸ The total amount of several *tunna* was calculated in *läst*, and 12 *tunna* constituted one *läst*.

On the basis of data from the castle Olavinlinna, Pirinen has calculated the containers used in liquid measurements. According to him, a *tunna* held about 126 liters, and a *läst* was thus about 1500 liters. The *tunna* was further divided into four quarters and one quarter into 12 *kanna*.⁹ The volume of a *kanna* was about 2.5 liters, or it can be considered as large as the beer tankard used in Sweden.

Monetary Units

Thalers began to be minted in Sweden on the foreign model in 1534, and two years later domestic money in marks as well. By the year 1540, the following had been established as denominations:

1 mark=8 *öre*

1 öre=24 *penning*

The exchange rate for the thaler was 3½ marks in the mid-sixteenth century. By the end of the century, inflation had raised the exchange rate all the way to 25 and even 84 marks.¹⁰

Endnotes

¹ Hannerberg 1946 p. 416; Odén 1955 p. 247.

² There were two weight systems in use, a balance (*besmanvikten*) for retail trade and scales (*vågvikten*) for wholesale trade. The scales were, as a rule, heavier than the balance weights. For example, 20 *mark* of Stockholm scale weight corresponded to 22 *mark* of Stockholm balance weight. A Häme *lispund* weighed on the Stockholm scales was 28 *nål* and according to the Stockholm balance 30 *nål*. Generally, the Häme *lispund* is compared to the Stockholm balance weight (Vilkuna A-M 1996 p. 93).

³ Odén 1955 p. 248.

⁴ Morell 1986 pp. 27-34. The weight of one *leiviskä* in the sixteenth century has previously been estimated as 8.5 kg.

⁵ Odén 1955 pp. 249-50; Markkanen, Rantatupa and Nygård 1971 p. 10-; Melander 1891 p. 23; Pirinen 1985 p. 332.

⁶ Melander 1891 p. 23.

⁷ Melander 1891 p. 23; Pirinen 1985 p. 332.

⁸ Morell 1986 pp. 32-33.

⁹ Pirinen 1985 p. 332.

¹⁰ Sarvas 1985 p. 333.

Appendix 1:

Staff in the Service of the Primary Sector at Häme Castle During the Years 1540-1569

a = according to the annual payroll

s = according to the shoe payroll

	1540		1541		1542		1543		1544		1545		1546		1546/47		1547/48		1548/49		1549/50		1550/51	
Landed estate	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s
master	2		2		2		2		2		2		2		2		2		2		2		2	
matron	2		2		2		2		2		2		2		2		2		2		2		2	
hand	2		2		2		2		2	2	1	2		1	2		2			4		2		
maid	4		4		4	1	4	2	4	3	4	6	6		5	1	5	2	5	8	6	4	6	
warder	2		1		1	1	1		1		1	1	1		1	1	1		1		1			1
cowherd	2			4	1	3	2		1	2		2	5				1		1		1			2
ox drover			3		2			2	1	1		5	1		3		2		1	2		2	1	2
shepherd																								
swineherd	3		1	1	2		2	3	1	2	2	1	2		2		2		2	1	2	1	2	
hand	3		6			2	2			2	1	3	2	1	1	1		3	3	3	3	5	5	5
maid	1			1		2				1														
fisherman	1		5	2	7	1	2	6	5	2	4		4		3	1	3		1	2	1		1	
Tot. according to ann. payroll	22		26		23		19		19		17		25		21		19		17		17		19	
Grand total	22		34		33		32		34		37		27		25		25		38		32		29	

	1551/52		1553/54		1556/57		1557/58		1558/59		1559/60		1560/61		1561/62		1562/63		1564/65		1565/66		1568/69	
Landed estate	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s
master	1		2		2		3		3		3		3		3				3		3		3	
matron	1		2		2		3		3		3		3		3				3		3		3	
hand		1	8		5		6				3	1	2	1	3	2								
maid	1	17	7		4		9				8		9	10	9	7								
warder		2	1		2		2		2	1	2		2		2		2							
cowherd		1			1		4		5	2	8	7	3	9	3	10								
ox drover	2	1																						
shepherd									3	4		3												
swineherd	2	1	2		3		2		2	2	1	1	5	2	1	2								
hand	4	4	3		4		3		18	7	3	4	9	6	3	10								
maid	5								8															
fisherman	2	2	2				4		2	4		3	2		3	3		3		3		1		
tot. according the ann. payroll	18		27		23		36		8		38		37		37		27		9		9		7	
Grand total	47		27		23		36		47		51		67		56		27		9		9		7	

Appendix 2:

Staff in the Service of the Secondary Sector at Häme Castle During the Years 1540 - 1569...

a = according to the annual payroll

s = according to the shoe payroll

	1540		1541		1542		1543		1544		1545		1546		1546/47	
	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s
major-domo	1		1		1		1		1		1		1		1	
cellarer	1		1		1		1		1						1	
cook	1		1		2		2		2		2		1		1	
brewer	4		3		4		4		3	1	3		2		2	
baker			1	1	2		1		1		1		1		1	
slaughterer	1		1		1		1		1		1		1			1
miller			1						1			1	1		1	
maltmaker	2		2		2		2		1	1	1	1				
major-d.'s helper	1		1		1		1		1		1		1			
brewer's helper																
cellarer's helper																
cook's helper			1		1		1		1		1		1		1	
baker's maid																
blacksmith	2		1		1		1		1		1		1		1	
tailor	1		1		1						2		2		1	
shoemaker	1		2		2		2		2		2		2		1	
leather-dresser									2		2					
tinker							1		1		1		1		1	
turner					1		1									
cooper	1		1		1		1		1		1		1		1	
joiner																
gunsmith																
fuller																
mason																
brickmaker																
saddler																
glazier																
carpenter			1	2	1		1		1		1					
limeburner																
charcoal maker					1	1		1		1						
joiner's helper																
cooper's helper																
fuller's helper																
shoem.'s helper																
mason's helper																
blacksmith's helper																
storehouse:																
matron	1		1		1		1		1		1		1		1	
maid	2		2		2	1	2		2		2	1	2		3	
spinster																
weaver																
boatman																
coachman			1			1	1		1							
dormitory matron	2		2		1	3	2		2		2		1		1	
hand	4		1			1	7		1	2	1	2	1	1		
maid				1		1										
Tot. ann. payroll	25		26		27		34		26		25		20		17	
Grand total	25		30		35		35		33		32		22		19	

Appendix 2:

...Staff in the Service of the Secondary Sector at Häme Castle During the Years 1540 - 1569...

a = according to the annual payroll

s = according to the shoe payroll

	1547/48		1548/49		1549/50		1550/51		1551/52		1553/54		1556/57		1557/58	
	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s
major-domo			1		1		1		1		2		1		1	
cellarer	1		1		1		1		1		1		1		1	
cook	1		1		1		1		1		1		1		2	
brewer	2		2	1	1	1	2	1	2	2	2		1		4	
baker	1		1	1	1		1		1		1		1		2	
slaughterer			1													
miller	1		1		1				1		1		1		1	
maltmaker							1	1								
major-d.'s helper							1		1				1		1	
brewer's helper																
cellarer's helper																
cook's helper		2		3		2	1			1	1		1		2	
baker's maid													1			
blacksmith	1		1		1		1		1		2		1		2	
tailor			1		2		2		1		1					
shoemaker	1		1		1		1		1		1		1		1	
leather-dresser																
tinker	1		1													
turner																
cooper			1		1				1				1		1	
joiner															1	
gunsmith													1		1	
fuller													1		1	
mason																
brickmaker																
saddler																
glazier																
carpenter																
limeburner																
charcoal maker													1			
joiner's helper																
cooper's helper															1	
fuller's helper													2		2	
shoem.'s helper																
mason's helper																
blacks.'s helper											1					
storehouse:																
matron	1		1		1		1		1		1		1		1	
maid	3	1	3	2	4	3	3	4	4	2	4		2		1	
spinster											1		1		1	
weaver							2		1							
boatman																
coachman																
dormitory matron	1		1	1	1		1	3		1			2		2	
hand	1	3	4	3	4	5	5	5	4	5	3		6		5	
maid											2					
Tot. ann. payroll	15		22		21		25									
Grand total	21		33		32		39		64		52		54		50	

Appendix 2:

...Staff in the Service of the Secondary Sector at Häme Castle During the Years 1540 - 1569

a = according to the annual payroll s = according to the shoe payroll

	1558/59		1559/60		1560/61		1561/62		1562/63		1564/65		1565/66		1568/69	
	a	s	a	s	a	s	a	s	a	s	a	s	a	s	a	s
major-domo	1		1		1		2		1		1		1		1	
cellarer	1		1		1		1		1		1		1		1	
cook	1		2		2		2		2		2		2		1	
brewer	2		1		1		2		3		3		3		1	
baker		2	2		2		2		3		4		4		2	
slaughterer																
miller		1	1		1		1				1		1			
maltmaker																
major-d.'s helper	1		1		1		1		2						1	
brewer's helper			2	2	3	1	1									
cellarer's helper							1		1							
cook's helper	2		1	1	1		1		1						2	
baker's maid																
blacksmith	2		1		1		1		1		1		1		1	
tailor	1		1		1		1									
shoemaker	2		1		1		1		1						1	
leather-dresser																
tinker																
turner																
cooper	1		1		1		1				1		1		1	
joiner	1		1		1		1						1		1	
gunsmith	1		1		1		1		1		1		1			
fuller	1		1		1		1		1		1		1		1	
mason	3		1		2		2		5		9		9		5	
brickmaker	1		1		1						1		1		2	
saddler			1		1		1		1							
glazier											1		1		1	
carpenter													1		2	
limeburner			1												1	
charcoal maker		1		1												
joiner's helper	1		1		1			1								
cooper's helper			1		1		1		1		1				1	
fuller's helper	2	2	2	1	1	2		2								
shoem.'s helper					1			1	1		1		1			
mason's helper							1				4		2		2	
blacks.'s helper											1				1	
storehouse:	1															
matron	1				1		1		1							
maid	2		2	3	2		4	3	6		1		1		1	
spinster	1			1	2	1					4		4		2	
weaver																
boatman	2															
coachman																
dormitory matron		2	2		2		2		2		2		3		2	
hand		17	8	4	5	10	7	3	11						2	
maid		8														
Tot. ann. payroll	31		39		40		40		46		41		40		36	
Grand total	64		52		54		50		46		41		40		36	

Appendix 3:...

Staff in the Service of the Tertiary Sector at Häme Castle During the Years 1540 - 1569

a = according to the annual payroll

d = according to the roster of diners

	1540		1541		1542		1543		1544		1545		1546		1546/47	
	a	d	a	d	a	d	a	d	a	d	a	d	a	d	a	d
bailiff	1		1		1		1		1		1		1		1	
scribe			1		1		1		1		1		1		1	
underbailiff			1		1		1		1		1					
chaplain	1		1		1		1		1		1		1		1	
assistant scribe											1					
copyist					1		2		2		2		1		1	
caretaker																
eel bailiff					1		1		1							
bailiff's attendant	8		3		3		7		9		10		9		10	
squire	37		34		43		46		49		55		56		52	
piper																
fusilier									1		1		1		1	
cavalier																
foot soldier																
underbailiff's valet																
porter					1		2		1		1		1		1	
executioner											1		1		1	
head stableman	1		1		1		1									
groom			4		2		4		5		4		2		3	
page																
stable boy																
visitor																
est.-bailiwick bailiff																
prisoner																
Tot. ann. payroll	48		46		56		67		72		79		74		73	
Grand total	48		46		56		67		72		79		74		73	

...Appendix 3:...

Staff in the Service of the Tertiary Sector at Häme Castle During the Years 1540 - 1569

a = according to the annual payroll

d = according to the roster of diners

	1547/48		1548/49		1549/50		1550/51		1551/52		1553/54		1556/57		1557/58	
	a	d	a	d	a	d	a	d	a	d	a	d	a	d	a	d
bailiff	1		1		1		1		1		1		1		1	
scribe	1		1		1		1				1		1		1	
underbailiff			2		1		1		1		1		1		1	
chaplain	1		1		1		1		1		1		1		1	
assistant scribe											1		1		1	
copyist	1		2				1									
caretaker																
deputy bailiff																
bailiff's attendant	10		7		1								4		4	
squire	48		37		36		24		26				21		19	
piper					1		1		1							
fusilier											1					
cavalier																
foot soldier																
underbailiff's valet															1	
porter			1		1		1		1				2		2	
executioner	1		1		1		1									
head stableman																
groom	2		2		2		1		1						1	
page																
stable boy																
visitor																
est.-bailiwick bailiff																
prisoner																
Tot. ann. payroll	65		55		46		33		32		6		32		32	
Grand total	65		55		46		33		32		6		32		32	

...Appendix 3:

Staff in the Service of the Tertiary Sector at Häme Castle During the Years 1540 - 1569

a = according to the annual payroll

d = according to the roster of diners

	1558/59		1559/60		1560/61		1561/62		1562/63		1564/65		1565/66		1568/69	
	a	d	a	d	a		a	d	a	d	a	d	a	d	a	d
bailiff	1		1		1		1		1		1		1		1	
scribe	1		1		1		1		1		1		1		1	
underbailiff	1		1		1		1		1		2				1	
chaplain	1		1		1		1		1				1		1	
assistant scribe			1		1						1		1		1	
copyist																
caretaker											1					
eel bailiff													1			
bailiff's attendant	14				3		3		3						3	
squire	5		26		29		19		37		17		17		23	
piper																
fusilier		5		7				10			1		1			
cavalier		38		68				84								
foot soldier		26		4				16								
underbailiff's valet	1		1		1		1								1	
porter	2		2		2		2		2		1		2		2	
executioner			1		1		1				1		1		1	
head stableman									1							
groom	1															
page		4		4				7								
stable boy		20		33				30								
visitor		8		7				10								
est.-bailiwick bailiff		3		3				3								
prisoner		2		9				1								
Tot. ann. payroll	27		35		41		30		47		26		26		35	
Grand total	133		170		41		191		47		26		26		35	

Appendix 4:

Staff Engaged in the Service of the Primary, Secondary and Tertiary Sectors at Häme Castle During the Years 1540-1569 and Each Sector's Percentage Share of the Total Number of People

	1540	1541*	1542*	1543*	1544*	1545*	1546*	1546/47*
Primary	22 (23%)	34 (31%)	33 (27%)	32 (24%)	34 (24%)	36 (24%)	27 (22%)	25 (21%)
Secondary	25 (26%)	30 (27%)	35 (28%)	35 (26%)	33 (24%)	32 (22%)	22 (18%)	19 (16%)
Tertiary	48 (51%)	46 (42%)	56 (45%)	67 (50%)	72 (52%)	79 (54%)	74 (60%)	73 (63%)
Tot.	95 (100%)	110 (100%)	124 (100%)	134 (100%)	139 (100%)	147 (100%)	123 (100%)	117 (100%)

	1547/48*	1548/49*	1549/50*	1550/51*	1551/52*	1553/54	1556/57	1557/58
Primary	26 (23%)	38 (30%)	32 (29%)	29 (29%)	47 (42%)	27 (47%)	23 (27%)	36 (35%)
Secondary	21 (19%)	33 (26%)	32 (29%)	39 (39%)	33 (29%)	25 (43%)	29 (35%)	34 (33%)
Tertiary	65 (58%)	55 (44%)	46 (42%)	33 (32%)	32 (29%)	6 (10%)	32 (38%)	32 (32%)
Tot.	112 (100%)	126 (100%)	110 (100%)	101 (100%)	112 (100%)	58 (100%)	84 (100%)	102 (100%)

	1558/59*	1559/60*	1560/61*	1561/62*	1562/63	1564/65	1565/66	1568/69
Primary	47 (34%)	52 (37%)	67 (41%)	56 (41%)	27 (23%)	9 (12%)	9 (12%)	7 (9%)
Secondary	65 (47%)	52 (37%)	55 (34%)	50 (37%)	46 (38%)	40 (53%)	40 (53%)	36 (46%)
Tertiary	27 (19%)	35 (26%)	41 (25%)	30 (22%)	47 (39%)	26 (35%)	26 (35%)	35 (45%)
Tot.	139 (100%)	139 (100%)	163 (100%)	136 (100%)	120 (100%)	75 (100%)	75 (100%)	78 (100%)

* according to the shoe-payroll data

Appendix 5:

The Total Numbers of People Dining at the Bailiff's Table, at the Servant's Table and the Landed Estates of Häme Castle in Those Years for Which Data Are Available. The Figures Are Weekly Averages.

	1547	1548	1552	1553	1556	1559	1560	1561	1562	1563	1566	1568	1569
Bailiff's table	101	56	137	118	228	163	197	179			118	127	173
Servants' table	37	41	37	57	28	52	53	53			50	51	44
The landed estates	14	15	12	16									
Total	152	112	186	191	256	215	250	232	277	296	168	178	217

Appendix 6:

The Seeding of Häme Castle's Fields 1540 - 1569 The measures are Häme spann. Each plant type's percentage share of the total seeding.

	Rye	%	Barley	%	Wheat	%	Oats	%	Peas and beans	%	Total	Total %
1540	85	68	31	25					9	7	125	100
1541	85	73	25	21					7.5	6	117.5	100
1542	135	79	30.5	18		0.5			3.5	3	170	100
1543	134.5	83	13.5	8	3	2			9.5	7	160.5	100
1544	106.5	79	17	13	0.5	0.5			11	7.5	135	100
1545	131.5	91	5	3					7.5	6	144	100
1546	102.5	94							6	6	108.5	100
1548/49	73	93							5.5	7	78.5	100
1549/50	77.5	90							8.5	10	86	100
1550/51	79	94							5	6	84	100
1551/52	73.5	91							7	9	80.5	100
1552/53	63	89							8	11	71	100
1553/54	89	95							5	5	94	100
1554/55	85.5	95							4.5	5	90	100
1556/57	84	95							4	5	88	100
1557/58	119.5	100									119.5	100
1558/59	176.5	96							8	4	184.5	100
1559/60	196.5	96							8.5	4	205	100
1560/61	162.5	93							13	7	175.5	100
1561/62	173	92							14.5	8	187.5	100
1562/63	221	95							12	5	233	100
1564/65	176.5	83	25	12					10	5	211.5	100
1565/66	158.5	81	9	5			18	9	10	5	195.5	100
1567/68	187	94							12	6	199	100
1568/69	146.5	76	24	12			15	8	8	4	193.5	100

Appendix 7:...

Fabrics Made in Häme Castle's Fatabur from Sample Years

p = pairs e = ells

	1540	1541	1542	1543	1544	1545	1546/47	1547/48	1548/49
Bedclothes:									
ryas	8	5	2	5	4	9	3	2	6
bedcovers	5	3	4	5	7	10	9	13	8
blankets	5	6	12	4	12	18	8		29
pairs of sheets					7,5 p				
mattresses									
pillows						2			
pillowcases						2			
tapestries									
Tot.	18	14	18	14	38	41	20	15	43
Furnishing fabrics:									
bench cushions				1	1				
wall drapes		3	5						
bench cloths					1				
tablecloths			3		1				
scarves		2		2	2				
Tot.		5	8	3	5				
Other fabrics:									
frieze	156 e	188 e	278 e	86 e	122 e	260 e			
Häme frieze									
fine linen									
sacks									
hand towels		4		3	5				

...Appendix 7:

Fabrics Made in Häme Castle´s Fatabur from Sample Years

p = pairs e = ells

	1549/50	1550/51	1551/52	1552/53	1553/54	1554/55	1555/56	1556/57	1564/65
Bedclothes:									
ryas			8	3	6		4	2	8.5
bedcovers	23	40	20	5	31	21	22		3
blankets			14		2	16	9		9
pairs of sheets					3 p	8 p	1 p	5 p	8 p
mattresses					7	3			
pillows					5	4	3		1
pillowcases									
tapestries					2	4			2
Tot.	23	40	42	8	55	64	40	12	39.5
Furnishing fabrics:									
bench cushions									
wall drapes					1				
bench cloths									
tablecloths	1	1				2			1
scarves					2	1	1		
Tot.	1	1			3	3	1		1
Other fabrics:									
frieze	38 e				112 e	58 e	10 e		195 e
Häme frieze								323 e	
fine linen							50 e	99 e	107 e
sacks						9	1	3	15
hand towels					2			5	

Appendix 8:...

Quantities of Textiles, Fabrics and Raw Materials in Häme Castle's Fatabur

p = pairs lis = lispund e = ells t = tunna quar = quarter tunna

	1540	1541	1544	1547/48	1548/49	1549/50	1550/51	1551/52
Bedclothes:								
ryas	30	35	35	47	41	42	39	36
bedcovers	34	37	13	43	42	66	106	76
woolen blankets			3	3	7	7	7	7
blankets	24	32	33	61	80	80	76	74
pairs of sheets	34p	26p	28p	37p	30.5p	15.5p	15.5p	15.5p
mattresses	9		10	11	11	11	11	11
pillows	12	12	12	14	11	11	11	11
leather pillows	4	4	4	4	3	3	3	3
pillow cases	1	2	2	4	5	5	3	3
curtains	2	2	2		5	5	5	5
tapestries	3							
Total	153	150	142	224	235.5	245.5	276.5	241.5
Furnishing fabrics:								
bench cushions	8	8	9	9	14	14	14	14
wall drapes		3	3	3	3	3	3	3
bench cloths			1	1	1	1	1	1
ceiling hangings	2	2	2		2	2	2	2
tablecloths	17	18	14	18	23	22	21	18
scarves	9	11	14	14	8	8	7	7
Total	36	42	43	45	51	50	48	45
Other textiles:								
hand towels	6	10	14	16	14	14	14	7
"koyell"	3	3	4	4	4	4	4	4
sacks								
fabrics								
fine linen					68e	124e	146e	
frieze								
broadcloth								
Raw materials:								
wool					2e 6lis	1e 19lis	16lis	19lis
hemp							2lis	4lis
feathers							1quar	7t 1/4quar

...Appendix 8:

Quantities of Textiles, Fabrics and Raw Materials in Häme Castle's Fatabur

p = pairs lis = lispund e = ells t = tunna quar = quarter tunna

	1552/53	1553/54	1554/55	1555/56	1556/57	1559/60	1560/61
Bedclothes:							
ryas	39	45	39		43	38	41
bedcovers	81	113	78		101	95	92
woolen blankets	7	4	4	4	4	4	2
blankets	74	72	64		68	95	76
pairs of sheets	15,5p	16p	22p		18p	23p	22p
mattresses	11	18	21	21	21	22	23
pillows	11	16	20		23	18	23
leather pillows	3	3	4	4	3	3	3
pillow cases	3	5	5	6	5	5	5
curtains	5	5	5	5	5		6
tapestries		5	9		9	9	9
Total	249.5	302	271	40	300	312	322
Furnishing fabrics:							
bench cushions	8	8	8	8	8	12	12
wall drapes	3	4	4	4	4	4	4
bench cloths	1	1					
ceiling hangings	2	2	2	2	2	7	2
tablecloths	15	14	16		14	9	9
scarves	4	6	5		4	4	4
Total	33	35	35	14	32	36	31
Other textiles:							
hand towels	5	7	4		7	21	13
"koyell"	1	1	1	1	1		
sacks			9	16	19		
fabrics							
fine linen		379,5e					
frieze							
broadcloth		26,5e	14e	14e	8e		
Raw materials:							
wool	38lis	1e 18lis	3lis				
hemp	4lis	2lis	2lis				
feathers	5t 3quar	29t	15t	2t	5t		

Appendix 9:

Visiting Craftsmen at Häme Castle During the Years 1540-1569 Whose Name and/or Residence is Known

Masons

Knudh murmestare 1541
Clemitt murmestare 1543
Oluff murmestare 1543
Raualdt murmest i Pelkenne sok 1544
Rauals Andhersson Onckala 1546
Hans potthemackare 1546
Mats murmester frå Kuunogårdslenn 1547
Oluff muremestare 1555
Per Andersson 1559, 1560
Mårthen Ericsson 1559
Nils Henriksson 1559
Knut Henriksson 1559
Sigd Henriksson 1559
Morthen Henriksson 1559
Oluff Henriksson 1559
Sigd Ingllsson 1559
Michil Nilsson 1559, 1566
Staffan Olsson 1559, 1562, 1565, 1566, 1569
Nilsius Olsson 1559
Nils Olsson 1559
Nils Persson 1559, 1560
Gres Persson 1559
Nils Persson 1559
Erich Ragvaldsson 1559, 1560, 1562, 1565, 1566, 1569
Sigd Simonsson 1559
Per Jönson 1560
Oleff Sigdsson 1560
March Lucasson 1562
Morthen Olsson 1562
Erich Hanson 1563
Marg Jonson 1563
Henrik Larsson 1563, 1565, 1566
Staffan Mattson 1563, 1565, 1566, 1568
Morthen Andersson 1565, 1566
Michill Jönsson 1565, 1566
Thor Michilsson 1565, 1566
Jacob Olufsson 1565, 1566
Jacob Olufsson 1565, 1566, 1569
Jöns Thomasson 1569
Frans Olufson 1569

Mason's assistants

Margus the mason's apprentice 1565, 1566
Peder the lime mixer 1565
Peder the scaffolding builder 1565
Thor the lime mixer

Brickmakers

Per teghelslagare 1546
Henrik teghelslagare 1559

Carpenters

en timberman i Viborg 1544
Clemet Larsson Hattamala 1545
Henrik Ollsson turn of the year 1561-1562
Lasse Jönsson turn of the year 1561-1562

Joiners

Lasse snickare 1558

Glaziers

Clemet glasmestare 1544
Mats glasmestare 1558

Turners

Niels swarffware 1543
Bertil swarffware 1544

Leather-dressers

Jörenn skinnare 1541
Oluff skinnare 1543
Peder skinnare 1544
Siffridt skynnare 1545
Nils skynnare Sexemäci 1546

Tanners

Hans barckare 1540
Oluff barckare 1543
Nils barckare i Jerffuis 1545

Strap makers

Bertil beltare 1560
Henrik beltare 1562

Potsmiths

Lasse ketzlebyggare 1543
en ketzlesmedt aff kwmegårdz lenn 1546

Coppersmiths

Jacob koparslagare 1542

Gunsmiths

Herman bysseskyttare på Åbo slott 1543
Oluff byssesmedt aff Suedhio 1545

Powder makers

Claus byskytt 1542

Sword grinders

Erik suerdslipare turn of the year 1561-1562

Cutters

Jören huggar 1558

Appendix 10:

Häme Castle's Arsenal in the Years 1540, 1548 and 1560

t = tynna lis = lispund n = nål

	1540	1548	1560
falcon, copper	1	1	1
double falcon, iron		1	9
quarter-culverin, copper	1	1	
quarter-culverin, iron		3	2
half-culverin			6
serpentine	12	14	6
<i>ukkospyssy</i> (lit. thunder gun)			14
<i>kivipyssy</i> (lit. stone gun)	10	5	3
<i>mikhaka</i> (hook)	12	13	23
<i>tellehaka</i> (hook)	1	1	
copper hook	3	3	3
double hook		13	12
military hook		4	3
horn bow	11		7
bow			2
spearhead		665	297
arrowhead		1 t	1 t
<i>"byssekamra"</i>	40	38	
stamp		2	
shot scoop		5	4
iron dipper	1	1	2
bullet mold	1	1	6
drill		3	
sledgehammer			
falcon balls, lead	2		
falcon balls, iron	16	237	387
culverin balls, iron	2		
serpentine balls	1300	14,5lis 4,5n	8 lis
powder	6,5 t	2,25 t	1 t
culverin powder	47,5 lis	1,25 t	2 t
harquebus powder		3 t	1/2 t
<i>kivipyssy</i> powder			2 t
sulfer		2 t	
lead	22 lis	52 lis	61,5 lis
lead bullets' iron jackets			18 n

Appendix 11: The Bailiff's Table During the Years 1548, 1559-1561 Häme Castle's total consumption in kilograms of vegetable and animal products at the bailiff's table and the kilocalories (kcal) contained in the daily meals of the one person. Also represented are the calorie amounts to which a 25% margin of error has been calculated.

	Vegetable products						Animal products						Grand to- tal kcal	25 % reduction in kcal
	Grain	Beer (malt)	Peas and beans	Hops	Salt	Total kcal/day	Butter	Meat	Salt fish	Dried fish	Total kcal/day			
1548 (mean 56 persons) Total Kg per year	9529.6	27366.4	112.4	876.15	1108.8		1108.8	9226.8	12229.8	3658.5				
Per person Kg per year	170.2	488.7	2	15.6	19.8		19.8	164.8	281.4	65.3				
Per person Kcal per day	1500	2089	13	-	-	3602	329	896	723	216	2164	5766	4325	
1559 (mean 163 persons) Total Kg per year	31749.8	56055.4	948.9	1598.8	728.6		1256.9	21199.2	6692.4	8892.9				
Per person Kg per year	194.2	342.8	5.8	9.8	4.4		7.7	129.6	40.9	54.4				
Per person Kcal per day	1705	1465	42	-	-	3212	128	705	135	180	1148	4360	3270	
1560 (mean 197 persons) Total Kg per year	30230.4	66743.1	1303.4	2217.3	679.8		1704.4	23143.2	7834.2	14360.9				
Per person Kg per year	153.1	337.9	6.6	11.2	3.4		8.6	117.2	39.6	72.7				
Per person Kcal per day	1344	1444	47	-	-	2835	140	638	132	241	1151	3986	2990	
1561 (mean 179 persons) Total Kg per year	34608	68412	1079	2049.3	1889.9		2277	17575.8	7276.5	10498.3				
Per person Kg per year	193.3	382.2	6	11.4	10.5		12.7	98.2	40.6	58.6				
Per person Kcal per day	1701	1633	42	-	-	3376	214	537	134	194	1079	4455	3341	

Appendix 12: The Consumption per Person per Day in Kilograms of Vegetable and Animal Products at Häme Castle's Bailiff's Table During Fiscal Year 1550 (October 1549-September 1550) and the Kilocalories (Kcal) Contained in One Person's Daily Meals. Also Presented Are the Calorie Amounts to Which Have Been Calculated a 25% Margin of Error

	Vegetable products			Animal products				Grand total (kcal)	25% reduction (kcal)
	Grain	Beer (malt)	Peas and beans	Total (kcal)	Butter	Meat	Fish	Total	
mo. 1 (Oct. 1, '49-Oct. 28, '49) mean 74 persons									
Kg / day/person	0.681	1.519	-		0.039	0.242	0.275		
Kcal / day/person	2286	2369	-	4655	238	480	333	1051	4279
mo. 4 (Dec. 24, '49-Jan. 20, '50) mean 108 persons									
Kg / day/person	0.744	1.65	-		0.038	0.375	0.264		
Kcal / day/person	2393	2574	-	4967	232	746	319	1297	4698
mo. 5 (Jan. 21, '50-Feb. 19, '50) mean 115 persons									
Kg /day /person	0.647	1.038	0.021		0.034	0.361	0.32		
Kcal / day /person	2081	1619	55	3755	207	717	387	1311	3800
mo.7(Mar.20, '50-Apr.16, '50,fast) mean 163 persons									
Kg /day /person	0.591	0.809	0.005		0.058	-	0.297		
Kcal / day /person	1899	1261	13	3173	354	-	359	713	2915
mo. 10 (Jun. 12, '50-Jul. 9, '50) mean 115 persons									
Kg /day /person	0.893	0.888	0.017		0.044	0.403	0.353		
Kcal / day /person	2873	1386	44	4303	268	799	427	1494	4348
mo. 11(Jul. 10, '50-Aug. 6, '50) mean 93 persons									
Kg /day /person	1.038	1.145	0.033		0.06	0.34	0.413		
Kcal / day /person	3340	1786	87	5213	366	673	499	1538	5063

Appendix 13:

Consumption of Vegetable and Animal Products at Häme Castle's Servants' Table During the Years 1548, 1559-1561 in Total Kilograms (Kg), per Person per Year in Kilograms and in Number of Calories (Kcal) Contained in One Person's Daily Meals. Also Presented Are the Calorie Amounts to Which Have Been Calculated a 25% Margin of Error.
(no me. = no mention)

	Vegetable products					Animal products					Grand total (kcal)	25 % red. (kcal)
	Grain	Beer (malt)	Peas and beans	Hops	Salt	Total (kcal)	Butter	Meat	Salt fish	Dried fish	Total (kcal)	
1548 (mean 41 persons) Total Kg per year	5753.2	5246.2	341.7	142.9	no me.		3	2397.4	2455.2	1373		
Per person Kg per year	140.3	128	8.3	3.5	no me.		0.07	58.5	59.9	33.5		
Per person Kcal per day	1219	546	61	-		1826	-	294	198	110	602	1821
1559 (mean 52 persons) Total kg per year	21302.9	7337.2	2267.2	188.1	798.6		308.8	4257.6	1346.4	2970		
Per person Kg per year	409.6	141.1	43.6	3.6	15.3		5.9	81.8	25.9	57.1		
Per person Kcal per day	3571	602	314	-	-	4487	98	411	86	189	784	3953
1560 (mean 53 persons) Total kg per year	25743.1	5274.6	1937.6	136.3	627		48.8	4209.8	1267.2	4026		
Per person Kg per year	481.2	98.6	36.2	2.5	11.7		0.9	78.7	23.7	75.2		
Per person Kcal per day	4192	421	261	-	-	4874	18	394	77	249	738	4209
1561 (mean 53 persons) Total Kg per year	23814.4	6935.7	2027.4	261.7	937.2		36.6	3902.9	2923.8	3159.1		
Per Person Kg per year	449.3	130.9	38.2	4.9	17.7		0.7	73.6	55.2	59.6		
Per person Kcal per day	3909	558	274	-	-	4741	12	371	183	197	763	4128

Appendix 14:

Consumption at the Servants' Table During Fiscal Year 1550 (October 1549-September 1550)

	Vegetable products				Animal products				Grand total	25% reduction
	Grain	Beer malt	Peas and beans	Total	Butter	Meat	Fish	Total		
mo.1Oct.1, '49-Oct.28, '49 Kg/day/person	0.66	0.241	-		-	0.154	0.098			
Kcal /day/person	2095	376	-	2471	-	273	119	392	2863	2147
mo.4Dec.24, '49-Jan.20, '50 Kg/day/person	0.734	0.245	-		-	0.089	0.375			
Kcal /day/person	2331	382	-	2713	-	157	454	611	3324	2493
mo.5Jan.21, '50-Feb.19, '50 Kg/day/person	0.632	0.23	0.008		-	0.084	0.168			
Kcal /day/person	2007	359	21	2387	-	149	203	352	2739	2054
mo.7Mar.20, '50-Apr.16, '50 fast Kg/day/person	0.66	0.23	-		-	-	0.231			
Kcal /day/person	2095	359	-	2454	-	-	280	280	2734	2051
mo.10Jun.12, '50-Jul.9, '50 Kg/day/person	0.58	0.343	0.039		-	0.083	0.123			
Kcal /day/person	1842	535	103	2480	-	147	149	296	2776	2082
mo.11Jul.10, '50-Aug.6, '50 Kg/day/person	0.592	0.25	0.017		-	0.06	0.135			
Kcal /day/person	1879	390	45	2314	-	106	163	269	2583	1937

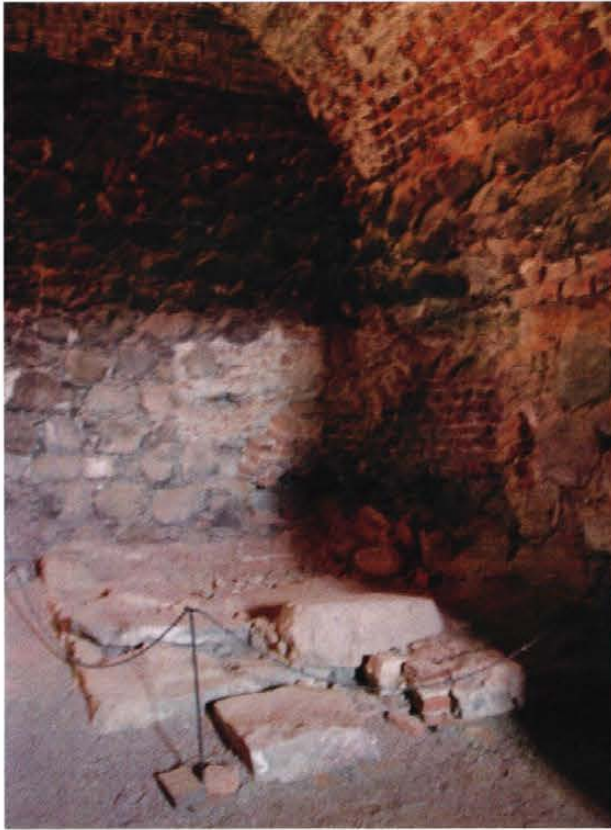


Figure 8. In accordance with medieval custom, the kitchen at Häme Castle was located on the main castle's ground level. To this day, one can still distinguish the remains of an enormous hearth in the kitchen. On the hearth burned an open fire, which sooted the kitchen's ceiling and walls to a pitch-black. The smoke holes are also still visible in the ceiling vaults. Photograph Terhi Mikkola. (NBA, Häme Castle)



Figure 10. Going from Häme Castle's main structure into the fatabur tower was arranged practically. Very few remnants of the fatabur tower have been preserved, but on the wall, at a height of about 5 meters, is a door opening that still reminds us of the fatabur: from the main castle's second level, a wooden bridge led, at that time, directly into the fatabur tower. Photograph Terhi Mikkola. (NBA, Häme Castle)



Figure 11. The eastern gun tower, or rondel, built during the year 1559, is the only structure from the Vasa period preserved at Häme Castle. The tower was built low, and apparently there were originally only two levels. It was roofed. The current roof was completed in 1983 in connection with the castle's restoration. On the right side of the rondel is preserved part of the medieval curtain wall. Photograph Martti Lampila. (NBA, Häme Castle)



Figures 12-13. The scribe was one of the rare individuals at Häme Castle who had his own room. Today, it is difficult to say with certainty what room he used in the castle. Nowadays, it is customary to call the chamber on the so-called mezzanine of the main castle the scribe's chamber. There were suitable niches in the room for keeping account books, and in a wall niche is visible a recess for a tablet. Photograph Terhi Mikkola. (NBA, Häme Castle)



Appendix 15: The Consumption of Foodstuffs at Häme Castle by Sector During Fiscal Year 1558/59
The percentage proportion of total consumption in parentheses. Measures in Häme spann (sp) and lispund (lei.)

	Primary sector (41 persons)			Secondary (41 persons)		Tertiary (129 persons)				Sector totals	
	food	feed	seed grain	food	wages	food	feed	deliveries	other		
Grain (spann)											
rye			174.5		26.5				84.5		
barley		5.5									
oats							1084.8				
wheat		0.75									
malt	153.34			234.05		868.13					
bolted rye flour				0.81		3.94		3			
unbolted rye flour	174.25			157.28		466.58					
barley flour	134.89	101		46.09							
groats				3.96		19					
wheat flour						1.25					
Total	462.48 (12.50)	107.25 (2.80)	174.5 (4.6)	442.19 (11.8)	26.5 (0.7)	1358.9 (36.3)	1084.8 (28.95)	3 (0.1)	84.5 (2.25)	3744.07 spa (100%)	
Peas, beans (spann)	27.88 (46.5)		8.5 (14.1)	11.98 (19.9)		11.71 (19.5)				60.07 spa (100%)	
Butter (lispund)	24.6 (13.20)			29.45 (15.8)		101 (54.3)		31 (16.7)		186.05 lis (100%)	
Meat (lispund)											
beef	133.39			297.41		1203.42					
mutton				24.03		115.03					
pork				14.58		69.81					
headcheese	52.04			48.28		145.17					
game birds				4.59		21.54					
sausage	204.7			75.26		26.43					
Total	390.13 (16.0)			464.15 (19.1)		1581.40(64.9)					2435.68 lis (100%)
Fish (lispund)											
salted fish	107.77			115.66		376.38					
dried fish	237.7			230.24		712.2					
fresh fish				20.79		99.12					
Total	345.47 (18.2)			366.69 (19.3)		1187.70(62.5)				1899.86 lis (100%)	

IN THE ROOMS OF HÄME CASTLE

The castle and its inhabitants

In the Middle Ages, Häme Castle belonged to the Swedish Crown or was held in fief by a liege lord appointed by the king, depending on the situation of the realm. Usually the liege lords themselves did not live in Häme Castle, but bailiffs from the gentry functioned as their representatives and looked after their interests, which means that the court life in the castle was not so magnificent. Sources mentioning occupants other than bailiffs and higher staff from the castle are few. In addition, there were soldiers, servants and artisans working and living in the castle. However, there is more information about the staff from the time of King Gustav Vasa, because during his reign careful accounts were kept on the meals and wages of the workers.¹

The outer measurements of the almost square Häme Castle are approximately 33x34 metres (Figs. 3-4 p.10). After the last medieval building phase each of the castle's four corners had a tower. In the middle of the wings, which are named after half-cardinal points, was an inner ward, and there was a wooden gallery encircling it on the level of the first floor. The gallery provided access into the rooms on the first floor. The castle was surrounded by a curtain wall from which one could also access the first floor from the Fatabur and Dansker tower to the Northwest and Northeast wing respectively. On the ground floor in the Southeast wing was a doorway to the outer ward (Fig. 14). The Cock tower, which protruded from the

castle's Southwest wing, had an internal staircase between the ground and first floor (Fig. 15). The castle's wings had two actual residential floors, with some of the rooms being located between the floors. On the third floor was a defence passage which was covered by a pitched roof sloping towards the inner ward.²

During the earlier part of the Middle Ages, the main castle was a residence for the castle staff, but in the 16th century there was no longer enough room for everyone, so dwellings and working rooms were built next to the protective curtain wall and even outside it.³ There must also have been earlier buildings for different purposes in the outer ward that lay between the main castle and the curtain wall, but there is no remaining evidence of this in the sources. People also moved out from the main castle to the dwellings in the outer ward at the end of the 16th century because the castle had deteriorated so much that it had become uninhabitable. Several attempts were made from the 1560s onwards to repair the castle into a suitable dwelling. However, there were accidents too, and for example in the 1599 explosion of a gunpowder storeroom, the castle's South tower collapsed and the wooden structures on the first floor burned down. The next larger renovation work was carried out in 1606–1611, when at least part of the castle was made habitable. The final end to the castle's use as a dwelling came in the form of a fire in 1659. The building remained in a state of decay until repairs began at the beginning of the 18th century in order to renovate the castle into a garrison.⁴

Methods and Sources

Different spaces were reserved for the castle's residents on the basis of their post and status. Spatial organization was used in the same way as rules of conduct and expectations are used to influence people's daily dealings with each other. Additionally, with the help of architecture the wealth and power of the lords of the castle were displayed to guests and enemies. The rooms of the castle have been named according to use, age, size, or significant people. However, the room names have changed, and it is often unclear during which time period the rooms were used for the purpose that the name implies. The names may also have been given at a later date on the basis of some assumption or belief. Some information about the rooms in Häme Castle can be found in archival sources.⁵ The sources do not, however, reveal in which parts of the castle these rooms were located.

Questions concerning organization and use of space, i.e. what was done where and who did it, have interested the researchers of medieval and post-medieval archaeology during the last few decades, and methods developed in different fields of science have been applied to the study of them.⁶ The conclusions presented in this article, concerning the use of space in Häme Castle, are based on Access Analysis and Feature Analysis. Access Analysis is a theory of space published by architecture theorists Bill Hillier and Julienne Hanson in 1984 in their work 'The Social Logic of Space'. They called the method 'Gamma Analysis', but archaeologists have taken into use the more descriptive term 'Access Analysis'.⁷ In this method, spaces (e.g. rooms) are positioned in a diagram according to the smallest

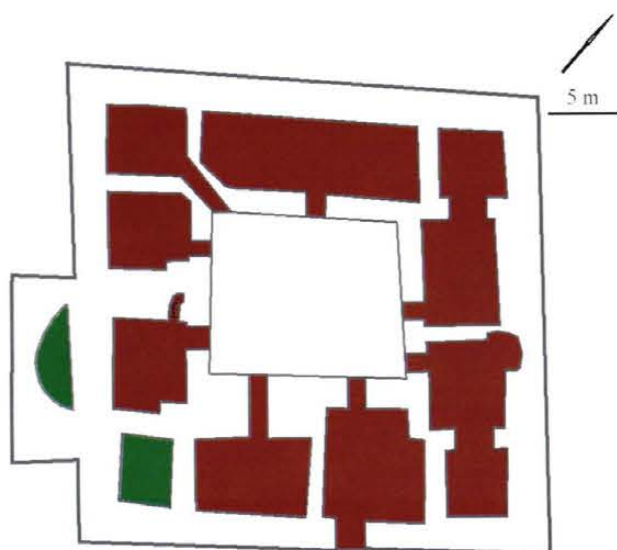


Figure 15. The Cock tower protruding from the Southwest wing of the castle. Photograph Terhi Mikkola. (NBA, Häme Castle)

possible number of access points from a certain starting point. An access diagram does not correspond to plan drawings of buildings, but it rather shows which spaces are directly or indirectly connected and how one can move between them.⁸ The approach also includes Hillier and Hanson's assumption about the social significance of space, which states that the value placed upon spaces by a community can be deduced from their accessibility. This idea has also been criticised. It has been considered oversimplified and its theory basis has been seen as weak. However, Access Analysis is well suited for studying and perceiving the spatial organization of wide and complex buildings, which is why archaeologists have adopted and applied the method to their own research materials. By leaving out excessive interpretative generalisations, the analysis becomes a practicable method describing spatial organization that functions well when analysing and comparing the structure of one or more sets of spaces.⁹



Figure 14. During the early Middle Ages, there was in the Cock tower a gate to the castle. In late medieval times, this connection no longer existed, and the castle was entered from the outer ward through a room located on the ground floor of the Southeast wing. The door on the right, just above the greystone masonry, led to a bridge between the Northeast wing and the Dansker tower in the curtain wall. Photograph Terhi Mikkola. (NBA, Häme Castle)

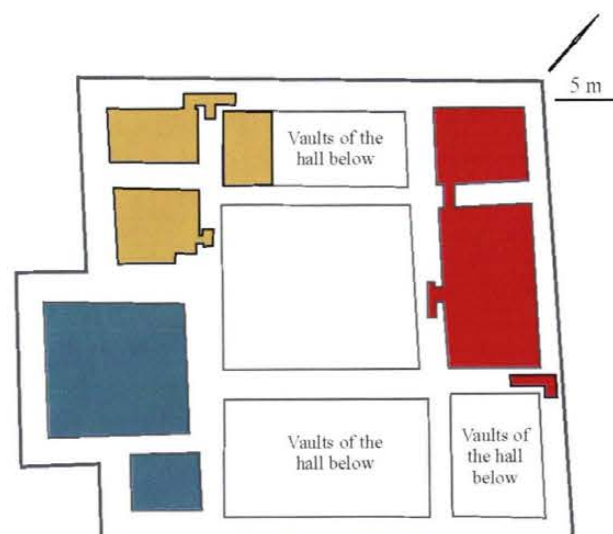


Ground floor



First floor

- Ground floor
- Cock tower
- Northwest wing
- Northeast wing
- Defence passages
- Tower rooms
- No specific set
- Uncertain spaces

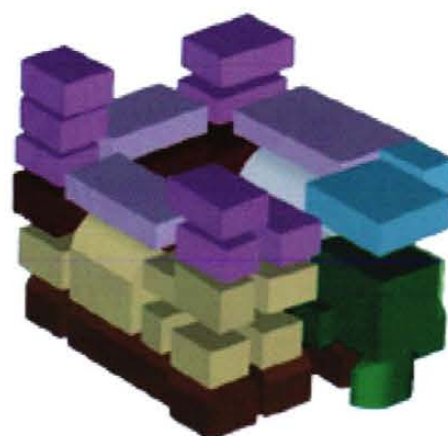


Second floor

Figure 16. Simplified plans of the living floors of Häme Castle. Of the structure of the rooms, only the doors are marked in the plans. The colours indicate to which set the individual rooms belonged. The original plan drawings are published in Knut Drake's dissertation "Die Burg Hämeenlinna im Mittelalter," 1968.

The sketch-like three-dimensional model shows how the sets of rooms in Häme Castle related to each other.

Drawings and model Terhi Mikkola



Access Analysis is used to express the interrelationship of spaces in a building, but it alone does not tell what function the rooms were used for. In order to find this out, I used Feature Analysis and a decision-tree diagram, in which the rooms' function is determined with the help of yes/no questions related to their structural features. For example, if there are windows and a fireplace in a room, its function is classified as accommodation, rather than storage where light and heat sources are not as important. James R. Mathieu has previously used this method together with Access Analysis in his study on the differences and similarities of spatial organization in four Welsh castles dating from the end of the 13th century.¹⁰

To define the functions of the rooms in Häme Castle, I have divided them into accommodation, defence, storage, lobby, working area and hall. Some of the rooms were assigned a designation which described several functions, such as defence/working area. Naturally, the functional room types reflect the castle's functions only to a certain extent. For example, in 1687 the following rooms in the castle were mentioned: chapel, lower hall, upper hall, upper great chamber, little hall underbailiff's chamber, scribe's chamber, guest hall, drummer's chamber, King's Hall, Queen's Chamber and guard's chamber.¹¹ However, it is impossible to define on the basis of structural features which of the castle's rooms would have been best suited to be, for instance, the drummer's chamber. But this is not the intention either. Instead, the chosen functional room types show how the space in the castle was divided between primary functions – i.e. accommodation, working and defence.

The methods described above require detailed information about the structures of rooms and other spaces. There is in fact good source material available on the structures of Häme Castle: research reports of the investigations and renovations carried out by the National Board of Antiquities in 1953–1988, and Knut Drake's thorough doctoral dissertation from 1968 in which he discusses the structural features of the different spaces in detail.¹² In addition to these, there is archival material from the castle, as well as maps and plan drawings that have been drawn up from the 17th century onwards. The most important drawings for my study are the plan drawings made by A. J. Nordenberg (later awarded knighthood with name Nordenskiöld) in 1726. They were drawn up because of the plans to turn the castle into the head garrison of the Finnish army. These drawings are the first to depict all of the castle's floors, and they have

extensive notes on changes carried out in the rooms, doorways cut through walls and the raising of the castle's wings.¹³

During the investigations of Häme Castle, over 2300 artefacts were recovered from the rooms and other spaces of the main castle, but due to problems of source criticism it is difficult to make conclusions about spatial organization on the basis of them.¹⁴ During the long history of the castle, its rooms have been thoroughly cleaned out and renovated, and the fill soil and artefacts may have been moved around even several times. Furthermore, the amount of artefacts discovered in the main castle is not great when compared with the castle's seven hundred years of use – only a little over three hundred finds for every century. On the whole, though, the finds from Häme Castle are an interesting research material which could provide information on material culture, consumption habits and everyday life in the castle, if studied in the right manner.

Spatial organization in the late medieval Häme Castle

The ending of the castle's last medieval building phase has been dated to the 1520s.¹⁵ Making a comprehensive study of the castle's spatial organization during the earlier stages would have been problematic, because the upper stories may have had wooden floors or towers which are difficult to reconstruct today. In my research, I concentrated on the use of the main castle from the point of view of the people who lived and worked there and left the structures in the outer ward out of my study. This exclusion was also due to problems of source criticism. Reconstructing the outer ward is considerably more difficult than reconstructing the spaces of the main castle. The year 1560 has been chosen as a hypothetical boundary for this stage, because after that the archival sources begin to mention the repairs carried out in the castle more often.

According to my study the castle's space was divided into sets of rooms which had their own central space, room or lobby. People could move between the central rooms via a wooden gallery encircling the castle's inner ward on the level of the first floor. It is possible to distinguish four sets of rooms: those on the ground floor, in the Cock tower, and those on the first and the second floor of the

Northeast wing. The rooms on the first and second floor of the Northwest wing formed their own group which also included some of the rooms in adjacent wings (Fig. 16). The highest floors in the castle's wings were connected to each other by passages and stairs, and they did not form a group around a certain focal space. From the highest rooms one could also access the two highest towers in the castle: the West tower and the North tower. A room on the first floor of the Southeast wing was left outside the groups and it could only be accessed from the wooden gallery.

Who then lived in the castle and for what functions was the space needed? I found the required background information for my interpretations from Anna-Maria Vilkuna's doctoral dissertation, which gives information about the castle's occupants: the Crown's officials, soldiers, servants and the artisans.¹⁶ I began my study with the hypothesis that in the castle's spatial organization one can distinguish spaces reserved for certain functions. Vilkuna's study of the groups of people performing different tasks in the castle provides more possibilities for my interpretations, especially since we both study relatively the same time period.

Accommodation

According to my room designations, the Northwest wing of the castle was primarily reserved for accommodation. Additionally, there was a hall, as well as lobby and working areas, in the wing (Figs. 17-18). One could access the wing's hall from the wooden gallery via two different routes. One route went through an imposing portal in the northeast wall of the inner ward, which was decorated with niches and brick ornamentation, and entered a room which has been interpreted as a lobby/working area. From there, one ascended along a staircase to a tower room that had a door opening into the hall (Fig. 19). In his dissertation, Drake wondered why there was such a grand staircase leading to a small tower room.¹⁷ However, thinking of the staircase as an entrance to the second lobby of the Northwest wing's hall makes it seem natural. Philip Dixon, who has studied the spatial organization of castles as a symbol of power and influence, has noticed from his material that halls were usually accessed via one or more lobbies or staircases. With this, the lord of the castle wanted to convey his power and wealth to the arriving people.¹⁸ Perhaps in Häme Castle, too, the bailiff wanted to impress his guests by letting them walk through two imposing entrances before the

reception in the castle hall. The other route from the wooden gallery to the same hall went through a small room in the Northwest wing that was connected to the Fatabur (storehouse) tower. According to the sources, the Fatabur tower was usually bustling with activity – for instance, the fabrics and other valuable goods stored there were moved to the castle's rooms and brought back again according to need.¹⁹ The small room also had a stove for heating up the adjacent hall. It would seem strange if the castle's guests would have walked through this small and sooty room, which rather seems to be a service area when judged by its other functions.

The Northwest wing was the only set of rooms on the first floor which one could not access from the other parts of the castle without going through the wooden gallery. It was also the only group which did not have an internal connection to the castle's defensive rooms. It therefore seems that the Northwest wing was deliberately segregated from the other sets of rooms in the castle. Because it had no direct connection to defensive areas, we may presume that the residents in this wing were not the soldiers who were in charge of the castle's defence. In previous studies, the Northwest wing has been believed to include the accommodations of the castle bailiff and other senior staff.²⁰ My research supports this hypothesis.

The Southeast wing contained the other room that has been interpreted as a hall and it did not belong to any set of rooms, providing that my interpretations about the dating of its doorways are correct. Additionally, it was not accessed via a lobby, but directly from the wooden gallery. It is called the King's Hall today, but the name only came into use after the visit of king Gustav II Adolf in 1626, and thus it is not a reflection of the hall's use in the late Middle Ages. Based on Hillier and Hanson's interpretations, access to the hall was less controlled than to the Northwest wing's hall, which people entered through more than one lobby. If the hall in the Northwest wing was connected to the castle bailiff's private premises during the late Middle Ages, then the hall in the Southeast wing may have been intended for common use.



Figure 17. On the right, the other door from the gallery to the Northwest wing. In the middle is the door to the Cock tower. Photograph Terhi Mikkola. (NBA, Häme Castle)



Figure 18. The northern gable of the hall in the Northwest wing. The door in the background led to the other lobby of the hall. Photograph Terhi Mikkola. (NBA, Häme Castle)

Defence

The spaces in the Northeast wing's were connected to the castle's defensive areas via a staircase, which is why some of the rooms in the wing were given the additional functional designation of defence (Fig. 20). These also included two rooms which were defined as halls. The other rooms in the wing were dwelling and storage areas. From the Northeast wing one had access to the curtain wall's Dansker tower, which has been interpreted as serving a defence function in the castle. Most of the castle's residents were soldiers in the middle of the 16th century, and on the basis of my analysis it would seem that the castle's Northeast wing was reserved for them. From there one could access the defence passage in the highest parts of the castle, and the wing's halls also had enough space to accommodate the soldiers.

The highest spaces in the castle's wings were reserved for defence. They differ from the castle's other spaces in that one could move between them directly and they were not located around a certain focal space. The possibility of moving easily from one space to another was important for defence.²¹ One could access the highest rooms from the Cock tower and the Northeast wing. The West tower's rooms were also related to defence according to my analysis. The rooms in the North tower were given the functional designation of accommodation and working area, but as far as their location is concerned, they would also have been suitable for defence or guarding, especially the tower's highest room which had several windows.

Storing

The spaces on the ground floor were storage and working areas according to my analysis, although the functions of these rooms were the most difficult ones in the castle to interpret. In previous research, the rooms have been considered to be working and dwelling quarters for the castle's servants, and it has been presumed that the castle's kitchen and chapel were located there (Figs. 21-22 p. 142).²²

However, the rooms on the ground floor were used for storage until the 20th century, and therefore it is plausible that during floor renovations and cleaning work possible fireplaces and ovens in the rooms have been destroyed.²³ For example, during the occupation known as the Great Wrath (1714–1721) the Russians used one of the rooms in the Northwest wing, which was large enough to be a hall, as a stable. In later repairs the room was cleared, and at the same time all earlier structures may have disappeared. Thus, on the basis of my analysis too, it would seem that the ground floor was intended for storage rather than for accommodation or working.

The Cock tower

People moved between the castle's ground floor and first floor via a staircase in the Cock tower. There may also have been wooden stairs or a ladder leading from the inner ward up to the wooden gallery on the first floor. But if these did not exist or if they were not in permanent use, the Cock tower's narrow staircase and small lobby were the only route between the floors. When people came from the tower to the gallery, they could immediately see on the other side of the inner ward the castle's most decorative wall and portal (Figs. 23-24 p. 143). The decoration of the walls had no connection to defence, which is considered the primary function of castles. It has been presumed that this was related to the castle builder's desire to display that he also had resources for other matters than defence.²⁴ On the basis of Dixon's arguments, organising access through the Cock tower can be interpreted as guarding and influencing.²⁵ The lord of the castle wanted to give an impression of his power and wealth to the arriving people.

According to the Feature Analysis, the spaces in the Cock tower were accommodations, lobbies and working and storage areas. One cannot define the tower's function as clearly as one can identify the use of the Northwest wing as accommodation or the Northeast wing as having a defensive significance. There have been suggestions in research that the Cock tower's cellar and the lowest room in the South tower, which belongs to the same set of rooms, may have been prison cells. The South tower room could only be entered via a trap door. However, they could just as easily have been storage rooms that were difficult to access.²⁶ The Cock tower may not have been intended for any single activity, but rather in the late Middle Ages it had spaces for different functions. It was nonetheless significant in controlling the passage between the ground and the first floor.

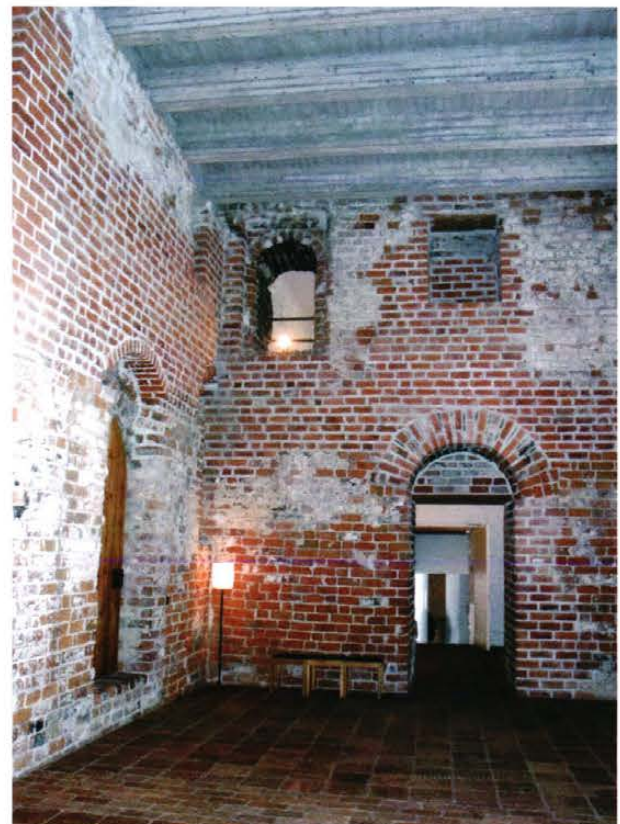
Changes after 1560

The changes carried out in Häme Castle after the 1560s did not affect its spatial organization very much and they were mainly due to some of the doorways and stairs being bricked up. By blocking up entrances, the castle in a sense returned to an even earlier medieval custom of locating rooms around one central space, so that one could not walk through the rooms. In comparison, when other castles in the Swedish realm were renovated into residential use from the mid-16th century onwards, halls and rooms



Figure 20. The eastern gable of the Northeast wing. On the left is a door to the Dansker tower. On the right, a door to the gallery on the level of the first floor. From that door passage, as from the door in the middle, rose a stairway to the upper parts of the castle. Photograph Terhi Mikkola. (NBA, Häme Castle)

Figure 19. The northern gable of the Northeast wing. According to my research, one could proceed from the gallery to the lobbies of the hall in the Northwest wing through the portal on the left. The wall of the first lobby is marked with floor tiles. The door in the middle of the picture led to the second lobby in the North tower. In the Northeast wing, there had previously been two levels. Photograph Terhi Mikkola. (NBA, Häme Castle)



were built in such a manner that one could move from one room to the next without going through the central space.²⁷

Sources indicate that after the middle of the 16th century the residents of Häme Castle began to move to the wooden buildings in the outer ward, because the main castle had become uninhabitable. According to my analysis, however, the number of accommodations in the main castle had increased since the previous phase. One reason for why the castle at this stage has more small rooms designated as living areas than during the Corner Tower Castle phase could be the fact that the castle was used as a prison from the 17th century onwards. Thus, one could understand the larger number of rooms for accommodation or storage as an indication of that the entry to the castle was no longer being guarded and that they were rather guarding the way out of there.

The models for the late medieval Häme Castle

The parallels for the layout of Häme Castle can be found in the monastery-like castles of the Teutonic Order in the Baltic countries. Their typical shape was a square wall, which sheltered separate spaces for accommodation and dining, as well as a chapel. The internal organization of space in the castles symbolized the social structure of the Order, and separate spaces were reserved for people carrying out different tasks.²⁸ The Teutonic Order's influence on the castle building in the Baltic Sea area began at the end of the 13th century. Previously it was thought that this influence lasted until the 15th century, but according to the newest research, structures were still built according to this model at the beginning of the 16th century – that is, around the same time as when the last building phase of Häme Castle is supposed to have ended.²⁹

But was the spatial organization of the late medieval Häme Castle a result of solutions that were modelled on monasteries or was it related to the new way of organizing castles' internal space that began at the turn of the 16th century? During the earlier Middle Ages, the purpose of a castle was to be a combined residential and defensive structure. Soldiers were knights and thus members of the castle bailiff's party, and their rooms were located next to the bailiff's. However, during the Middle Ages the use of mercenaries became more common. Mercenaries were considered unreliable and bailiffs did not want them too close, which was consequently reflected in the spatial organization of castles.³⁰

The first Nordic castle where defence was clearly separated from the dwelling areas in the first decades of the 16th century is Malmöhus. Its main castle was used for accommodation, and defence was focused on the outer ward. In the castles of the Teutonic Order, similar solutions were taken into use from the end of the 15th century onwards.³¹ In Häme Castle, guardrooms were still located in the main castle during the Corner Tower Castle stage, and thus the castle is connected to the medieval building tradition. Residential and defence areas were integrated in a similar manner in the Olavinlinna castle founded in 1475. This practice survived in the castles built in Sweden until the 1540s.³²

It would be interesting to compare the organization of space in Häme Castle with solutions carried out in other castles, but the problem is the small number of similar studies. Furthermore, in the case of many castles, there is rarely enough information on structural details to enable this kind of study. In the absence of parallels, it is difficult for me to conclude which tradition of building the spatial organization in the late medieval Häme Castle is related to. However, the method of building clearly reflects an intention to separate the areas for defence and administrative personnel. This is a trend which starts to show in both Scandinavian and Baltic castles from the end of the 15th century onwards.

Endnotes

¹ Vilkuna 1998 pp. 12-16; see also this volume.

² Drake 1968 pp. 19-24; Luppi 1992 p. 4; Uotila 1998 p. 115.

³ Vilkuna 1998 pp. 24-25; see also this volume.

⁴ Drake 1968 pp. 24-25; Ailio 1917 pp. 148-155.

⁵ Vilkuna 1998 pp. 26-27; see also this volume.

⁶ e.g. Andersson 1997; Erikson 1995; Fairclough 1992; Hansson 2000; Mathieu 1999; Mogren 1995; Nordeide 2000.

⁷ e.g. Fairclough 1992; Foster 1989; Hillier, Hanson 1984; Mathieu 1999; Mikkola (2001); Mikkola 2002.

⁸ Hillier, Hanson 1984 pp. 147-149.

⁹ Foster 1989 pp. 40-41; 44; Brown 1990 p. 94; Chapman 1990 p. 81; Samson 1990 p. 6-7.

¹⁰ Mathieu 1999 pp. 115-116.

¹¹ Ailio 1917 p. 180.

¹² Drake 1968; Research reports concerning Häme Castle in 1953-1988.

¹³ see also Drake 1960; Stenius 1973 pp. 4-6.

¹⁴ Excavation finds from Häme Castle.

¹⁵ Drake 1968 pp. 147, 152-153; Drake 2001 p. 215.

¹⁶ Vilkuna 1998; see also this volume.

¹⁷ Drake 1968 pp. 133-134.

¹⁸ Dixon 1998 pp. 47-48, 55.

¹⁹ Vilkuna 1998 pp. 164-165; see also this volume.

²⁰ Ailio 1917 pp. 79-180; Drake 1968 p. 60; Gardberg 1993 p. 57.

²¹ Lovén 1996 p. 33.

²² Ailio 1917 p. 177; Gardberg 1993 p. 57.

²³ Ailio 1917 p. 137-138.

²⁴ Drake 2000 p. 30; Lovén 1996 p. 457.

²⁵ Dixon 1998.

²⁶ Ailio 1917 p. 177; Drake 1968 p. 68.

²⁷ Gardberg 1959 pp. 377-378.

²⁸ Alttoa 1993 p. 10; Drake 2001 p. 120; Lovén 1996 p. 215; Tuulse 1942 pp. 124-124; 1952 pp. 174-175.

²⁹ Alttoa 1993 p. 16.

³⁰ Gardberg 1959 p. 376; Tuulse 1952 p. 215.

³¹ Gardberg 1959 p. 377; Tuulse 1942 p. 290; 1952 pp. 236-237.

³² Gardberg 1959 p. 111.



Figure 21. The east corner of the inner ward. The door on the left leads to a room in the Southeast wing that was a passage between the inner and outer wards. In the middle is the door to what is assumed to have been a kitchen. The door on the level of the gallery led to spaces in the Northeast wing. Photograph Terhi Mikkola. (NBA, Häme Castle)



Figure 22. The west corner of the inner ward. On the left, on the wall decorated with tile niches, is a door to what is assumed to have been a chapel. On the right is a door to the Cock tower and to the stairs leading to the first floor of the castle. Photograph Terhi Mikkola. (NBA, Häme Castle)

Figure 24. On the right: View from the door of the Cock tower to the wall of the Northeast wing opposite. According to my research, the portal led to the lobbies of the hall in the Northwest wing. Photograph Terhi Mikkola. (NBA, Häme Castle)



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THE OUTER BAILEY OF HÄME CASTLE

Häme Castle is located in the southern end of a narrow moraine ridge on the southern shore of Vanajavesi Narrows, some 12 metres above the present-day water level of lake Vanajavesi. In the Middle Ages, the moraine ridge bordered on Vanajavesi in the east and the land on its southern and western side was a marshy area. The medieval village of Ojoinen was located less than one kilometre north of the castle, and through it ran Finland's first highway from Turku Castle to the castles of Häme and Viipuri (Vyborg).

Häme Castle comprises three separate structural entities: main castle, outer bailey and surrounding earthworks built in the 1770s. The main castle is a square building measuring 33 x 34 metres, with a lower part built in greystone. Brick has been used for the barrel-vaulted ceilings of chambers, as well as in window embrasures and doorways. The brick castle proper was built in several different phases. The main castle has altogether five towers, of which the north and west tower are higher than the others.¹

The main castle has been constructed so that one of the corners points directly to the north. An outer bailey surrounds the main castle on all of its four sides, encircling an area approximately 70 x 80 metres in size. The four areas of the bailey are called the northeast, southeast, southwest and the northwest outer bailey. The castle was turned into a garrison fortification in the 1770s to 1790s, and household buildings as well as soldiers' quarters were constructed around the main castle. An officers' garrison was planned for the northeast outer bailey but it was never built.

The northeast outer bailey today comprises the northeast outer ward, a gun tower built in the 1550s and the curtain wall with its towers. The

southeast outer ward encompasses a Crown bakery and a guardhouse. The southwest outer ward is the location of the western curtain wall building, and the northwest outer ward of the northern curtain wall building. All curtain wall buildings have been constructed so that their outmost foundation or wall incorporates the actual curtain wall.

Häme Castle is different from Finland's other medieval castles in that its square main castle is surrounded by an outer bailey on all four sides. The outer bailey consisted of a defensive wall and its towers. There were no actual residential quarters in the outer bailey, and the rooms in the towers were reserved for the purposes of defence and storage. The wards between the main castle and the curtain wall were steeply sloping, and access from the castle to the towers was via wooden bridges. This medieval building tradition was used in Häme Castle as late as in the 17th century.

Häme Castle can be classified as belonging to the Teutonic Order's *parcham* (or Zwinger) type of castles, although it is not an entirely typical representative. In the Middle Ages, the main castle was surrounded by a curtain wall which encircled the castle following its square plan. The outer bailey had at least two medieval towers: the Dansker tower in the middle of the side facing the lake, and the Fatabur tower (Storehouse tower) outside the northwest curtain wall. A third possibly medieval tower was the square gate tower in the south corner of the outer bailey. The outer baileys that were intended to protect the Teutonic Order's castles were constructed according to plan and were built almost uninterrupted in one phase. Häme Castle's outer bailey, however, shows signs of several building phases completed over a long period of time.²

The outer bailey's building phases

During the earliest, medieval building phase of Häme Castle's outer bailey, a defensive wall was constructed to protect the entrance gate to the main castle. It ran from the south corner, protecting the south- and northwest sides, to the Dansker tower in the northeast outer bailey area. With regard to defence, protecting the south- and northwest sides was important because here the slope of the moraine ridge was gentler than on the other sides.

Latest by the time a new entrance was constructed in the southeast facade of the main castle, the curtain wall was extended also to the north- and southeast sides. At this point the outer bailey became a square defensive structure surrounding the entire castle. The lower parts of the curtain wall were built of greystone and the upper parts were faced with brick on both sides. There was also a wall walk along the top of the wall.

Looking from lake Vanajavesi, the curtain wall was at least 11 metres high, and in the middle section of the wall was the brick-built Dansker tower, which has been used both as a latrine and for defence. The tower is built entirely in brick using so-called monk bond and is shaped like an almost regular square, with the walls measuring 6 x 6 metres and 1.5 metres in thickness. The brickwork begins on top of the greystone foundation at elevation + 82.00m asl. In the northeast facade of the main castle, right by the Dansker tower is a doorway with a doorstep at elevation + 99.40m asl. This entrance

could have been used to access the Dansker tower along a wooden bridge and to reach the wall walk on the curtain wall.

The northeast outer ward sloped steeply outwards, because its purpose was to function as a kind of a defensive structure. The southeast outer ward was cobbled and inclined towards the northeast curtain wall. Two gutters remain in the ground; they were built to carry off rainwater from the wards underneath the curtain wall. In the east corner of the outer bailey, in the protection of the southeast curtain wall, was located what was probably a particularly important place for the castle's inhabitants – the brewery.³

The curtain wall was also 11 metres high where it protected the southwest and northwest outer wards. The west corner of the wall may have had a tower that protruded slightly in its upper part, and in the northwest wall was the brick-built Fatabur tower that rose to height of at least 13 metres.

Medieval castles had tower-like storehouses or granaries that were called fataburs in Swedish. Textiles and yarn were produced and stored in fataburs, and they were also used as hoards for the most valuable metal artefacts in the castle. A pentagonal flanking tower in the northwest curtain wall was used as a storehouse in Häme Castle. On the west side of the tower used to be a storeroom where the mistress of the storehouse worked with her maid. The Fatabur tower could be accessed via a wooden bridge from a doorway in the main castle's northwest facade.

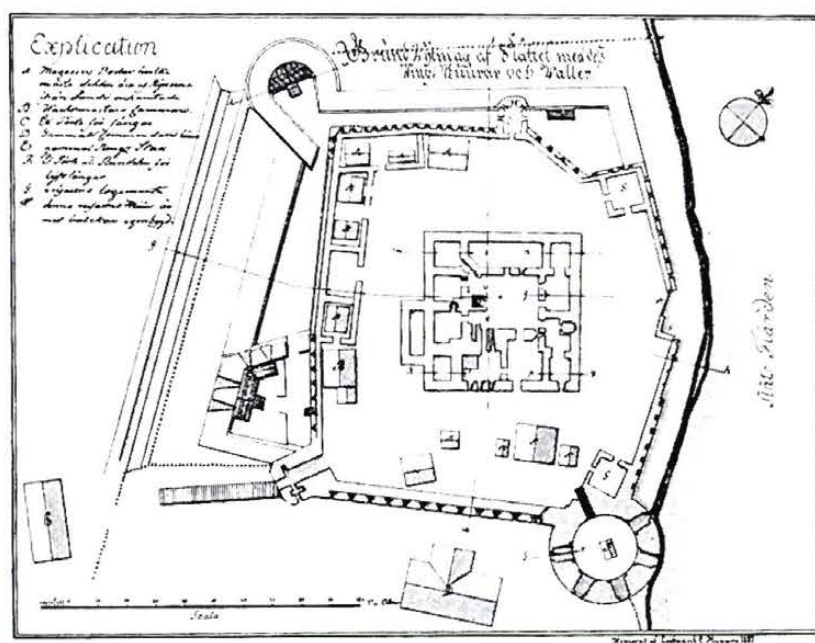


Figure 25. A measured drawing of Häme Castle made by J.G. Ammondt in the 1720s. The northeast curtain wall has three different sections. The eastern curtain wall tower has been drawn next to the gun tower. The place of the Dansker tower has been marked in the middle section of the wall, and there is also a tower in the north corner. The west corner of the curtain wall has been depicted as being thicker than the rest of the wall. Inside the southwest curtain wall, as well as in the west corner, are magazine buildings. The northwest curtain wall leans slightly outwards. The pentagonal Fatabur tower has been marked where the drawing has been folded. Furthermore, Ammondt has drawn the sixteenth-century gun towers in the east and west corners of the curtain wall.



Figure 26. Häme Castle and the rondel from the east. Photograph Martti Lampila. (NBA, Häme Castle)

The outer bailey area was entered via a gate in the south corner. Later a square gate tower was added; one of its walls is still visible today outside the guardhouse. Documents tell us that, in 1546, brickmoulder Per moulded and fired some three thousand bricks and the following summer bricklayer Mats built a gate tower for the castle.⁴ The sources do not reveal if this refers to building a completely new gate tower or repairing an old one. However, the number of bricks mentioned is quite enough for constructing vaults for a whole new tower.

The curtain wall had loopholes and in the northeast section the base of one of them has been preserved. The shape of this loophole's earlier stage resembles an arrow loop in Stockholm's town wall that has been excavated in Helgeandsholmen. This wall has been dated to the 1530s.⁵ Thus it is plausible to think that the loopholes in Häme Castle's curtain wall have been repaired for defence purposes as late as in the 16th century.

Gun towers

In 1559 the east corner of the outer bailey was strengthened with a gun tower, also called a rondel. The gun tower is a thick-walled defensive structure built in greystone, with embrasures for cannons on two floors. It was built in the east corner in such a manner that it could be used to defend both the northeast and the southeast side of the castle.

At the same time as when the eastern gun tower was constructed, the northeast and southeast sections of the curtain wall were also renovated. The inner

face of the wall between the Dansker tower and the gun tower was reinforced with greystone, and a new tower was built in the east corner. At this point, the two northernmost embrasures for cannons in the gun tower fell out of use.

A brewery had to give way when the gun tower was built, and in 1563 a new one with an oven was constructed.⁶ Three years later, yet another brewery was being built, and it is perhaps as late as this that the brewery was finally moved to the shore of lake Vanajavesi on the northeast side of the castle.

Latest around this time the tower that had been constructed in the outer bailey's north corner was repaired. The tower measures 7.5 x 8.5 metres and its building material is greystone, with brick used for the embrasures and doorways. Only the ground floor has been preserved. The tower has a hard-trodden earth floor that is very sooty, as well as a fireplace in the west corner. The ground floor was therefore probably used as a smithy.⁷

In the 1550s and 1560s, the castle employed an armourer who was provided with bar iron for forging spearheads and other weaponry. The smith was also needed for making building materials, tools, as well as different kinds of utensils. Metal ties and drawbars were required in bricklaying and masonry work, and various tasks around the castle called for wedges, drills, gridirons, knives, ladles, etc.

Another gun tower was constructed in the west corner of the outer bailey in the 1560s. Foundation work for the tower was begun in 1563, but it was not completed until some years later. The tower was not joined to the curtain wall, but instead, was built next to the earthworks outside the wall.

Brick as building material

Researchers are of the opinion that perhaps the most important elements for determining the age and different building phases of Häme Castle are brick size and the pattern used in bricklaying. The bonding pattern considered typically medieval is the so-called monk bond (double-stretcher Flemish bond), which fell out of use during the 16th century. The castle's walls are built with a great deal of hard-fired brick of a certain size and very good quality, with a groove in the edges of one side. The grooves have been created by the wooden mould into which the bricks were pressed. This brick type, which is 28-29 x 9-10 cm in size, is considered to be medieval at Häme Castle. It is found both in the walls of the main castle as well as in the brick facing of the curtain wall.⁸

The first literary references to brickmaking at Häme Castle date from as late as the 16th century: on average 3 500 bricks per year were made during the first half of the 1540s.⁹ A kiln for a new brickworks was built in the vicinity of the castle in 1560. Building a new kiln can mean one of two things: either it replaced a more primitive technique of firing used earlier, or it was more up-to-date and larger than the old kiln.

Closer details on the kiln are lacking, but apparently it was large and intended for permanent use, because altogether 20 *lästi* of lime was used for building it. The brickworks also included a sizeable barn for drying brick. It was built of timbers, and because it was intended for drying the brick before firing, the timbers were probably placed far apart. Mixing the clay used for making brick was included of the peasants' *corvée* work, but the actual moulding of the bricks was carried out by permanently hired brickmoulders.

The account books contain information about the bricks used in Häme Castle: in 1559-1579 altogether about 400 000 were consumed. The average usage per year was around 44 000 bricks. The smallest amount was used in 1573 when 15 000 bricks were consumed, while the culmination was reached in 1566 when as many as 130 400 bricks were used. The only figure for brick production at the brickworks of Häme Castle is from the year 1580 when 95 000 bricks were fired.

We know that the brickworks was still in operation in 1610, because in that year mixing clay and pulling wood to the castle for firing bricks were included in the tasks of the peasants from the jurisdictional districts of Sääksmäki and Hattula.¹⁰

Figure 27. View toward the current northeastern outer ward. In the background is the rondel and on the left the curtain wall beside the lake Vanajavesi. In the wall of the castle, just above the greystone masonry, is the door that led to the bridge between the Northeast wing and the Dansker tower in the curtain wall. Photograph Martti Lampila. (NBA, Häme Castle)



During the 16th century there were two dynamic periods at the castle as measured by the number of workdays spent on building: 1545-1547 and 1558-1569.¹¹ Bricklayers were employed by the castle only during the latter period, more specifically in 1564-1565, and as many as nine were hired during each year. Similarly, there were a full four bricklayer's labourers working at the castle in 1564.¹²

In the following are listed some examples of the bricklaying work carried out in the outer bailey during the latter half of the 16th century. In 1564, 10 800 loads of greystone, 50 200 bricks and 400 *lästi* of lime was used in addition to timbers, boards and beams for the construction of the round gun tower and the fourth section of the curtain wall. In 1566, again as much as 7 566 loads of greystone, 130 400 bricks, and 400 *lästi* of lime were used in addition to beams and boards for the building of the gun tower. In connection with constructing the rondel, brick, greystone and lime was also used for building sections of the curtain wall in 1560 and in 1571. In 1573, materials were again used for the construction of the curtain wall. In 1577, the construction of the eastern curtain wall required 4 848 days' work, and in 1579 building work for the northwest curtain wall by the Fatabur tower consumed altogether 103 000 bricks.¹³

The next dynamic building period dates to the beginning of the 17th century. At that time, a section of the curtain wall in bad condition by the gate was repaired along a distance of 11 fathoms and for a height of 3 fathoms. The 183 600 bricks needed for the repairs were taken from the old curtain wall. The wall walk was covered and its railings were made of lathed wood. Towers and room spaces in the outer bailey were also repaired both outside and inside. The documents from 1607 mention that a new tower was built in the castle, measuring 21 x 9 ells and 18 ells in height. The walls of the tower were 5 ells thick. A covered gallery led from the castle to the tower, with a floor made of new boards and handrails of lathed wood. As to which tower this information actually refers to is yet unknown. In 1611, the castle's gateway, drawbridge and entrance bridge were also renovated.¹⁴

I am not aware whether any calculations have been made on how much brick and other building materials are required to construct for example 10 square metres of brick wall. By making such calculations, it might be possible to estimate the extent of the construction work carried out at the castle during the 16th and at the beginning of the 17th century. Another interesting question is the true age of the medieval bricks that are usually used to help in the dating of Häme Castle.

Figure 28. Häme Castle from the north. The ramparts in the front were built in the 18th century, as was the brick building in front of the castle. Photograph Martti Lampila. (NBA, Häme Castle)



Endnotes

- ¹ Drake 1968 pp. 40, 124, 150.
² Luppi 1992; Uotila 1998 pp. 117, 119; Drake 2001 p. 215.
³ Ailio 1917 p. 246; Vilkuna 1998 p. 150.
⁴ Vilkuna 1998 p. 171.
⁵ Broberg 1982 p. 137-138.
⁶ Vilkuna 1998 p. 150.
⁷ Drake 1968 pp. 158-160.
⁸ Gardberg 1957 pp. 30-33.
⁹ Kuokkanen 1981 p. 81.
¹⁰ Kuokkanen 1981 pp. 81-82, 86.
¹¹ Vilkuna 1998 p. 251.
¹² Vilkuna 1998 p. 246.
¹³ Ailio 1917 p. 150.
¹⁴ Ailio 1917 p. 152.

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CROP PLANTS IN HÄME CASTLE IN THE 16TH AND 17TH CENTURY

As defensive and governmental centres, medieval castles have been attractive research subjects for both archaeologists and historians. In the last years also the financial management and everyday life in the castles have raised interest among researchers. The food economy and agricultural production have been studied e.g. in Häme Castle by means of written sources, such as the castle bailiff's accounts.¹ These investigations have given information about those crop plants that were collected as tax or had a special importance in the food economy of the castle. The classic work of Olaus Magnus on the history of Northern people in the 16th century also reveals that bread wheat, rye, barley, oat, pea, beans, flax, hemp and turnip were known as cultivated plants in the Nordic Countries at that time.² Neither Olaus Magnus nor any other written documents, however, tell us about the characteristics of these late medieval crop plants.

Concrete evidence about the crop plant assortment and their characteristics in the late medieval and early modern times may be obtained through plant macrofossil analysis. A macrofossil analyst, who in a wider context can be called an archaeobotanist or a palaeoethnobotanist, studies macroscopic plant remains, such as seeds and parts of flowers or fruits. These can be found in soil samples taken during archaeological excavations. Based on macrofossil evidence, it is possible to make conclusions about the vegetation of a certain place during past times and to get an insight into the relationship between ancient man and nature.

The palaeoethnobotanical research of Finnish castles, fortifications and manors began in the 1970's. Plant remains have been analysed from e.g. Turku Castle.³ The fortifications in Lappeenranta and Suomenlinna have also been investigated and crop plant remains have been found from layers dating to

17th-19th century and 18th-20th century, respectively.⁴ In this article, an archaeobotanical analysis of grain samples from Häme Castle will be presented and discussed. The material was found in 1983, during the excavations of the outer bailey ward between the main castle and the curtain wall. The grains give plenty of new information about the cultivation and quality of crop plants in the Häme (Tavastia) district during the late medieval and early modern times.

The important role of crop plants in the food economy of castles

Castles, fortifications and manors were used as residences of noble people and other representatives of the highest class. The daily eating customs and consumption of foodstuffs in castles differed greatly from those of ordinary peasants. The castle residents were also supplied with luxury items from abroad.⁵ By means of macrofossil analysis, one may find, for example, such plant remains as seeds of hazel nuts, figs, grapes and many kind of spices, which have been imported over the sea. In the late Middle Ages, products that were cultivated in Finland, such as cereal grain, were also imported, mainly from Danzig, Tallinn or Stockholm.⁶

In the light of written sources, however, the economy of our castles seems to have been based both on the taxes provided by the peasants in products of the natural economy and the production of the king's own manors and landed estates. Before the 1540's, all the tax articles collected within the castle fief were sent to the castle. A part of them was used to meet the castle inhabitants' needs. Tax articles were also forwarded to the king in Stockholm.⁷ Since the 1540's, when jurisdictional districts gained independent administration, only the tax articles

necessary for the castle's food management were sent there directly.⁸ Taxation was mainly based on the collection of natural products, although money was also collected now and then. The most important tax articles were grain, butter, meat, fish and hides. They constituted a considerable part of the foodstuffs that were consumed in the castle.

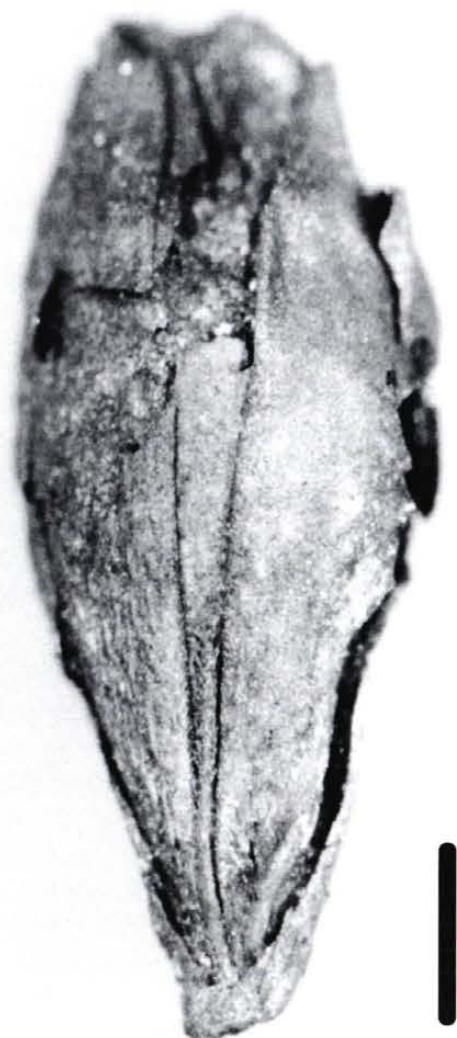
The food economy of the castles did not rely solely on taxes, but the landed estates had already in the Middle Ages an important role in the production of basic foodstuffs for the castle. Since medieval times, the landed estates of Saarinen and Ojoinen had been located in the close proximity of Häme Castle. In the 1550's, a third landed estate was founded from the lands owned by the villages of Hätilä and Pintiälä.⁹

The production conditions in the landed estates are quite well explained in the bailiff's accounts. They include information about the consumption of food-

stuffs in the castle. The accounts also tell, among other things, about agriculture, such as sowing quantities and cultivated crop species, cattle raising, as well as agricultural tools and customs. There is detailed information about the corvée work that peasants performed on the estates. They had an important role as farm labour on the estates.¹⁰ Therefore, it seems possible that the agricultural methods used there were based on local traditions. On the other hand, when working on the estates, peasants had a possibility to familiarise themselves with new agricultural innovations.

Besides labour, some exchange of crop species and varieties was carried out between the castle and the peasants. In the case of crop failures, for example, the castles were used as grain storages.¹¹ According to the written documents in the 16th century, some grain was sold, lent or given to the poor peasants from Häme Castle.¹²

Figure 29. A carbonised grain of barley (*Hordeum vulgare*) from Häme Castle. Scale = 1 mm. Photograph Johanna Onnela.



The carbonised remains of crop plants

The macrofossils of crop plants, especially carbonised cereal grains, provide important evidence that people had knowledge of crop plants and their utilisation. They are valuable for crop plant research. It is not only possible to identify the species from charred remains, but quite often also the variation, type or subspecies may be detected, provided that the morphological characteristics have been preserved so well that they are identifiable (Fig 29). Besides crop plants, the archaeological soil samples may also include charred diaspores of weeds and ruderal plants. As their requirements for habitats are usually well known, it is possible to make conclusions about farming conditions, as well as the acidity, moisture content and nutritional state of the soil. Life cycles of the species may also indicate whether they have grown in a spring-sown or autumn-sown field.

Several variables have to be taken into consideration, however, when interpreting the composition of a charred grain sample. It is important to understand how carbonisation itself impacts plant remains. Carbonisation is an incomplete burning process, where organic matter does not become completely oxidised to carbon dioxide and water, but almost only to carbon. In nature, charred plant remains are resistant to chemical decomposition and to the activity of micro-organisms. They are often, however, very fragile and vulnerable to mechanical damages.¹³

Charring is usually connected to situations where the seeds themselves have been subjected to heat or the whole building or structure where they were kept has burnt down.¹⁴ The most common reasons for charring are accidents during cooking or corn drying, or deliberate burning during activities such as burial or other cult ceremonies.¹⁵

A temperature exceeding 200 degrees Celsius is a precondition for charring. At low temperatures the time required for charring is considerably longer than at a more extreme heat, such as from 350 to 500 degrees Celsius.¹⁶ Besides temperature and time, the carbonisation process involves several other variables, such as the characteristics of the organic matter itself.

The reaction to burning greatly depends on the composition of a seed. For example, seeds rich in oil are destroyed by high temperatures.¹⁷ Seeds of some species burn down or become distorted and unidentifiable even at low heat. The composition of charred plant remains, consequently, never corresponds to the original, which is important to take into consideration when interpreting carbonised macrofossil material.¹⁸

Charring also modifies the shape and dimensions of seeds. When a seed becomes charred, the water inside it begins to move along the cell walls and the seed will swell due to vapour pressure.¹⁹ The shape of the seed becomes altered, because the increase in volume has to be compensated without an increase in the area of the seed testa.²⁰ The alterations in the shape and dimensions depend on the charring conditions. One has to bear this in mind when comparing charred grain material of different origins.

Usually single or groups of some thirty or forty charred grains are obtained from archaeological soil samples. For the time being, only a few large storage finds of cereals have been obtained from excavations in Finland, for example the samples from Rähälä in Lieto²¹ and Pahka in Lieto.²² However, the studies of the characteristics of crop plants require quite large amounts of material, so a great deal of work will have to be carried out by archaeobotanists in the future.

The macrofossil analysis from Häme Castle

The macrofossil material of my study was obtained from excavations in 1983, when the constructions below Häme Castle's western curtain wall building were a subject of archaeological investigations.²³ The outmost stone foundation of the SW curtain wall

building is composed of the curtain wall, which was constructed in the Middle Ages for the purposes of defence. Inside the curtain wall, on the outer ward, there were cottages, a granary and a storehouse for food in the 16th century.²⁴

Three samples were taken from the area investigated (Fig. 4 p. 10). The total volume of the macrofossil material was 0.7 litres. The samples had quite a similar composition, which is why they are discussed here as a larger combined sample. The material was mainly composed of charred grains, pieces of brick and charred wood. A grain sample was radiocarbon dated in the University of Helsinki Dating Laboratory. The radiocarbon age of the sample was 415 ± 85 BP (Hela-269). When calibrated, it dates to the early 15th to the early 17th century.²⁵

The macrofossil material was studied in the laboratory of palaeoethnobotany at the Department of Biology, University of Turku. The charred grains, seeds and other identifiable remains were separated from the sample and the remains were identified to the level of species when possible, otherwise to the level of genus or family. The number of cereal grains was counted from whole grains and from the halves of grain with an embryo. The length (with embryo), breadth and thickness of intact cereal grains were also measured. The nomenclature follows Hämet-Ahti et al. (1998) and Alanko & Rätty (1996).²⁶

The composition and representativeness of the sample

The material from Häme Castle may have originated in a granary or some kind of grain store, which was probably destroyed in a fire. Storage finds usually consist of species which have either grown together in the same field or have come from several fields, thus representing crops and weeds of different origin.²⁷ Palaeoecological interpretations are possible in both cases. Because burnt wood and pieces of brick occurred among the grain from Häme Castle, it is possible that different crops became mixed during the fire. As the origin of the remains in the sample from Häme Castle is in any case quite restricted, possible mixing does not prevent interpreting the composition of the sample material.

The number of plant remains was quite high: altogether 26 492 charred remains, mostly grains, were identified and counted (Table 1). Other cereal remains, such as rachis segments of ears, pieces of straw, culm nodes and awns, were scanty. Non-cereal

remains were mainly seeds of weeds and ruderals. The majority of the charred remains had been preserved in a very good condition, since the morphological structure of several of the grains was still identifiable. The grains had been carbonised in low heat.

The most abundant species in the sample was barley (*Hordeum vulgare*), the proportion of which was 65% of the total amount of identified remains. One third represented oat (*Avena sp.*). Rye (*Secale cereale*) and bread wheat (*Triticum aestivum*) were present only in modest numbers. The seeds of other crop plants were few. Also the proportion of weeds and ruderals was quite low, a mere 4% of the identified remains.

The crop species and variations

Barley (*Hordeum vulgare*)

It is not surprising that barley was the dominant species in the sample from Häme Castle. Barley has been the most important crop plant in most of Finland until as late as the 19th century, when rye became the main cereal.²⁸ In the Häme district, no information about tithes of crop yields in the 16th century remains. However, barley was obviously more common than rye until the middle of the 16th century, as it was used

Table 1. Carbonised diaspores of cultivated plants, weeds and ruderals from Häme Castle. The remains are seeds or fruits, if not otherwise mentioned. *) a mineralized seed **) moderate amount

Cultivated plants		<i>Chenopodium album/ suecicum</i>	
<i>Avena sp.</i>	7939	<i>Chenopodium sp.</i>	4
<i>Hordeum vulgare</i>	16468	<i>Cruciferae</i>	1
rachis segments	27	<i>Fallopia convolvulus</i>	64
pieces of awns	1	<i>cf. Fallopia convolvulus</i>	11
<i>cf. Hordeum vulgare</i>	753	<i>Galeopsis sp.</i>	145
<i>Secale cereale</i>	169	<i>Galium sp.</i>	51
<i>Triticum aestivum</i>	21	<i>cf. Galium</i>	1
<i>cf. Triticum</i>	1	<i>Lapsana communis</i>	1
<i>Cannabis sativa</i>	1	<i>Lithospermum arvense</i>	3 + 6*
<i>Fagopyrum esculentum</i>		<i>Persicaria lapathifolia</i>	13
pieces of seed coat	2	<i>Persicaria lapathifolia/maculosa</i>	20
inner parts of seed	3	<i>Poaceae</i>	4
<i>Linum usitatissimum</i>	7	<i>cf. Polygonum aviculare</i>	4
<i>Pisum sativum</i>	5	<i>Polygonum sp.</i>	28
Total	25397	<i>Raphanus raphanistrum</i>	
Unidentified pieces of Cerealia (gr)	7.5	Diaspores	78
		Pieces of capsules	21 + 2 cf.
Weeds and ruderals		<i>Spergula arvensis</i>	3
<i>Agrostemma githago</i>	6	<i>Stellaria media</i>	1
<i>cf. Agrostemma</i>	1	<i>Vicia hirsuta -type</i>	124
<i>Avena cf. fatua</i>	1	<i>Vicia/ Lathyrus</i>	370
<i>Brassica/ Raphanus</i>	2		
<i>Brassica/ Sinapis</i>	1	Other charred remains	
<i>cf. Brassica/ Sinapis</i>	1	Wood charcoal	**
<i>Camelina cf. alyssum</i>		Indet.	61
seeds	45	The other seeds and remains, total	1095
pieces of fruits	5		
<i>Centaurea cyanus</i>	13	Total	
			26492



Figure 30. A six-rowed barley (var. *vulgare*) with a dense ear (right) and a lax ear (middle). A two-rowed barley (var. *distichon*) on the left. Photograph Johanna Onnela.

more than rye for paying tax.²⁹ Barley was mainly used for the preparation of beer and bread.

According to Olaus Magnus, six-rowed barley variations (var. *vulgare*) were known in the 16th century. Later in the 18th century, the six-rowed type with a lax ear (so called 'four-rowed' barley) was obviously more common than the type with a denser ear (see Fig. 30). The latter was considered more demanding with regard to growing conditions.³⁰ Even the two-rowed barley (var. *distichon*) was known in the 18th century. It was said to give the best groats, fine white flour and malts. Gadd also mentioned a type called 'Hämöset'. It ripened very early and was cultivated especially in districts with a short growing period.

In the times of traditional agriculture, only crop landraces were cultivated. They had adapted to the Northern climate during a long period of cultivation. However, at the beginning of last century (and in the case of barley, in the 1910's) the bred cultivars began to displace landraces, which slowly vanished.³¹

Landraces resemble our ancient cereal types more than modern varieties. Therefore, research on the characteristics of landraces may give information that is also important for macrofossil investigations. Before the complete disappearance of landraces, professor J. O. Sauli from the Hankkija Plant Breeding Institute managed to collect a large landrace material of barley in order to investigate the characteristics of landraces and their value for plant breeding.³² A great deal of variation in productivity, quality and characteristics of the grain, as well as in growing time and straw stiffness were observed.³³ Sauli classified his research material into subspecies, variations, subvariations and forms according to the row type, length, shape, density and attitude of the ear and special characteristics of the grain. The majority of the samples represented the six-rowed variation with lax ear (so called 'four-rowed' barley), where the grain had spiculated lateral dorsal nerves and a rachilla with short hair. This morphological type has been the most dominant landrace type.

The barley grains from Häme Castle (Fig. 29) mainly represented the above-mentioned 'four-rowed' landrace type, so it obviously was known in Häme 500 years ago. The material included a great deal of asymmetric lateral grains, which indicate the six-rowed type. The base of the grain lemma was horseshoe-shaped or bevelled in the best-preserved hulled grains (Fig. 31). This often correlates with the lax ear. In Häme Castle, some lateral grains had a lemma which had a deeply nicked lemma base. This is more common for barley with a dense ear. In these cases, however, the characteristics of well-preserved lodicules proved that the grains were in most part of the horseshoe-shaped (bevelled) type (Fig. 32). The well-preserved grains also had spiculated lateral dorsal nerves and a rachilla with short hair (Fig. 33).

Finally, in comparison with other macrofossil cereal materials³⁴, the grains were very small, narrow and flat (Table 2). The average breadth was only 2.4 mm and thickness 1.84 mm. Some of the barley crop was even harvested when unripe.

Oat (Avena sp.)

The quantity of oat was second largest after barley in the sample from Häme Castle. The majority of grains from Häme Castle were found without a lemma and a palea (Fig. 34). Remains with intact palea and lemma, however, were also discovered. They were identified as common oat (*Avena sativa*). Oat belongs to the youngest cereal species cultivated in Finland.

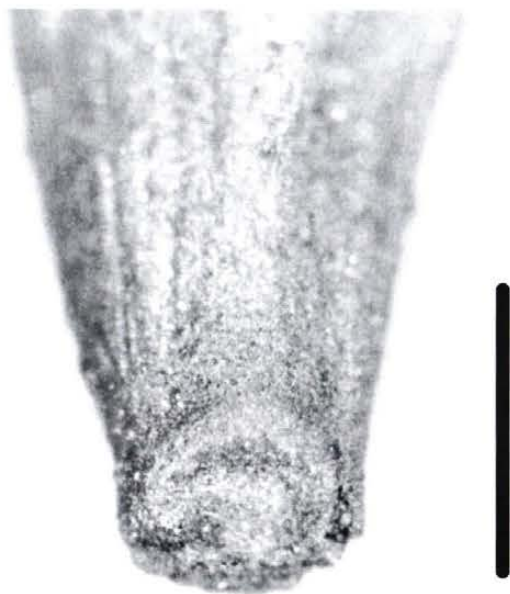


Figure 31. A lemma base of a barley grain from Häme Castle. In charred remains, ear types may be identified with the help of a scar on the lemma base of a hulled grain. A horseshoe-shaped scar usually indicates six-rowed barley with a lax ear. Scale = 1 mm. Photograph Johanna Onnela.

The oldest charred macrofossils come from Salo and date from 300 AD.³⁵ Cultivation of oat did not become more common until the Middle Ages³⁶, but it was cultivated in smaller amounts than other cereals for a long time.

In the Häme district, oat was an important tax article as early as the 16th century.³⁷ It was used quite a lot in manors, probably as feed grain for horses. The same concerned Häme Castle, where oat was the most important fodder cereal in the mid sixteenth century.³⁸ Barley was also used in the castle as a fodder plant, though it was principally utilised in the preparation of beer and bread. Oat was, however, quite rarely cultivated in the landed estates. The castle's needs were mainly satisfied by the oat delivered by peasants as tax.³⁹

The oat grains from Häme Castle were very small in size with a lot of variation (Table 2, Fig. 35). The length distribution of the measured grains indicates a sorted crop, where the amount of inner and middle grains is greater than that of outer grains. The small inner and middle grains have been favoured as fodder, because they are more valuable for this purpose than the outer grains with a thicker lemma.⁴⁰ Consequently, the grain sample of barley and oats from Häme Castle was obviously stored as feed grain for horses or cattle.

Besides landraces of barley, J. O. Sauli also investigated oat in the 1920's.⁴¹ In comparison to cultivars of today, landraces were very weak and low-yielding. However, their apparently weak characteristics were very useful for the traditional farming system. The variety was required for its hardiness and reliable yields in our northern growing conditions. Even the small size and narrow shape of the grain were favourable characteristics, because they were able to develop normally and dry fast.⁴²

Sauli (1937) classified the landraces into five subtypes, according to the characteristics of the panicle, features of the stem, tillering ability and the length of the growing period. In general, the landraces had a tendency to develop three grains in the spikelet, though variation occurred within strains and between them. The grain size distribution (Fig. 35) indicates that the oat in Häme Castle was possibly a type that had a tendency to develop a third grain on the spikelet.

Rye (*Secale cereale*)

In Häme Castle, only 169 rye grains had been mixed with the other cereal species (Fig. 36). According to pollen analyses, the first appearance of rye in Sääksmäki in Häme is dated to 1710 ± 50 BP.⁴³ The earliest charred rye grains in Finland date from 100 BC.⁴⁴ Rye was an important crop plant in SW Finland already in the Middle Ages.⁴⁵ Little by little, its role

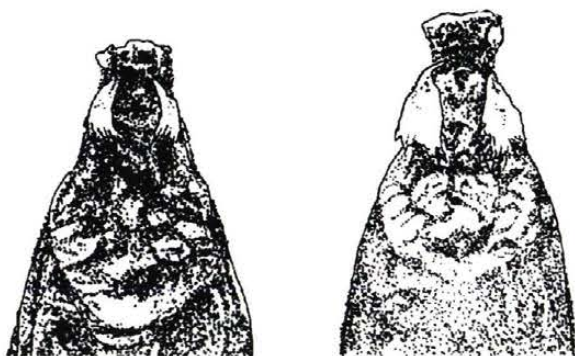


Figure 32. Lodicules lie at the base of a barley grain between the lemma and the embryo. Their size and position in relation to the embryo vary in different barley variations. Small lodicules (left) are associated with a nicked grain base. Large lodicules (right), or the so-called collar type, are found in grains with a horseshoe-shaped bevelled base. The latter was found among the grains from Häme Castle. Johanna Onnela.

as a bread cereal strengthened in other regions of the country as well. By the beginning of the 19th century, it had displaced barley as the main crop.⁴⁶ In Western Finland, cultivation of rye on fields was begun early, but in places in Eastern Finland rye belonged closely to slash-and-burn cultivation until as late as the 19th century.⁴⁷

Although rye was scarce in the sample from Häme Castle, the bailiff's accounts tell that it was an important cereal in the castle's economy during the 16th century. Rye was cultivated more than barley in the landed estates of Häme Castle.⁴⁸ According to Luukko, the better yields of rye in the landed estates possibly led to its gradual spread to peasant farms and to the displacement of barley. In Häme Castle, rye was cultivated both on fields and on burn-beaten areas.⁴⁹ As early as in the 18th century, Gadd mentioned the three forms of rye.⁵⁰ Besides the ordinary rye, which was sown in autumn, a special form adapted to slash-and-burn cultivation and a so-called spring rye were known. Perhaps all of them were known even much earlier.

The rye grains in Häme Castle were very small in size (Table 2). They had a fairly long and slender shape. From the characteristics of the grain it is not possible to say whether the rye is the autumn-sown or spring-sown type. Neither is it possible to say whether the rye was grown on a field or on burn-beaten land. Among the grain, however, seeds of *Lithospermum*

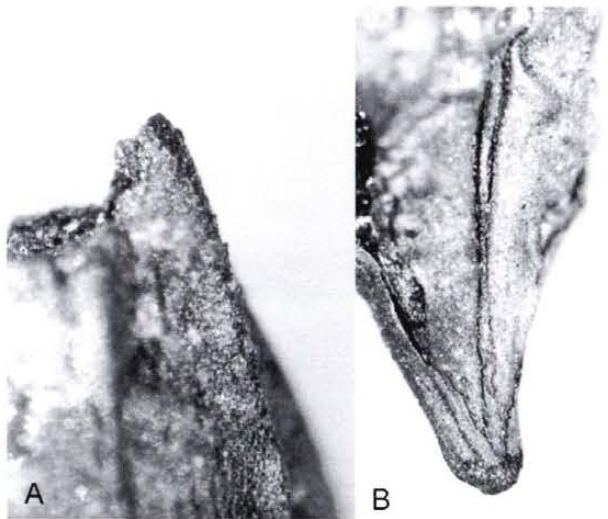


Figure 33. The well-preserved hulled barley grains from Häme Castle had spiculated lateral dorsal nerves (A) and a rachilla with short hairs (B). Photograph Johanna Onnela.

arvense were found. It is a winter annual. The occurrence of this species may, therefore, point to autumn-sown rye in the Häme Castle sample.

The length of the rye grains resembled the late Iron Age rye studied in Pahka, Lieto, though they were considerably narrower than the latter.⁵¹ The Viking Age rye grains from Varikkoniemi, Hämeenlinna,⁵² which is close to Häme Castle, were shorter and

Table 2. The dimensions of grains from Häme Castle. av = average, min = minimum value, max = maximum value. LB = length/breadth, LT = length/thickness, BT = breadth/thickness. The length of wheat grain does not include the embryo.

Barley N = 252				Rye N = 41			
	av	min	max		av	min	max
length	5.60	3.72	7.64	length	5.65	4.40	8.00
breadth	2.40	1.41	3.32	breadth	1.54	1.10	2.00
thickness	1.84	0.91	2.61	thickness	1.54	1.10	2.20
LB	2.35	1.93	3.71	LB	3.67	2.90	5.00
LT	3.10	2.31	5.78	LT	3.68	3.06	4.46
BT	1.32	0.94	1.78	BT	1.01	0.85	1.27
Wheat N = 10				Oat N = 279			
	av	min	max		av	min	max
length	3.46	2.80	4.00	length	5.42	3.52	7.44
breadth	1.98	1.50	2.50	breadth	1.78	1.31	2.51
thickness	1.70	1.40	2.20	thickness	1.46	0.91	2.11
LB	1.76	1.43	2.24	LB	3.06	2.18	4.24
LT	2.05	1.67	2.38	LT	3.74	2.67	5.46
BT	1.19	1.06	1.27	BT	1.23	1.06	1.60

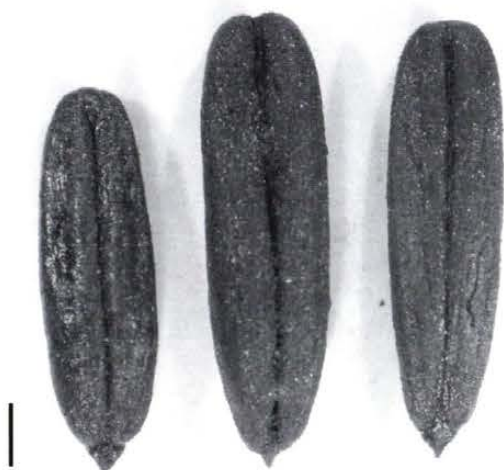


Figure 34. Naked grains of oat (*Avena* sp.) from Häme Castle. Scale = 1 mm. Photograph Johanna Onnela.

thicker, probably partly due to different charring conditions.

In general, the charred Finnish rye materials from different sites seem to have more or less different grain dimensions. However, new evidence is needed before studying whether the late medieval rye landraces vary in grain size and whether the differences among samples depend on geographical locations.

Bread wheat (Triticum aestivum)

According to the charred grain finds from Finland, bread wheat seems to have been known here at least for a couple of thousands of years.⁵³ However, it was cultivated in very small amounts until the end of the 19th century.⁵⁴ In Häme, manors and landed estates had wheat in minor cultivation in the 16th century, but peasants only grew it very sporadically.⁵⁵

Only very few remains of bread wheat were present in the Häme Castle sample (Fig. 37). The species may have been grown as an addition among the main crop, or it may have been mixed to the grain crop after harvesting. The grains were extremely small in size (Table 2).

The seasonal types of wheat (i.e. sown in spring or in autumn) are very difficult to distinguish from charred grains. A useful characteristic for identifying the spring- and autumn-sown types is the length of the grain's apical hairs. The apical hair of autumn-sown wheat is usually clearly longer than that of the spring-sown type.⁵⁶ The apical hair has usually disappeared from charred grains. One remain of wheat was, however, found in the Häme Castle sample where short hair could be observed on the apex of the grain.

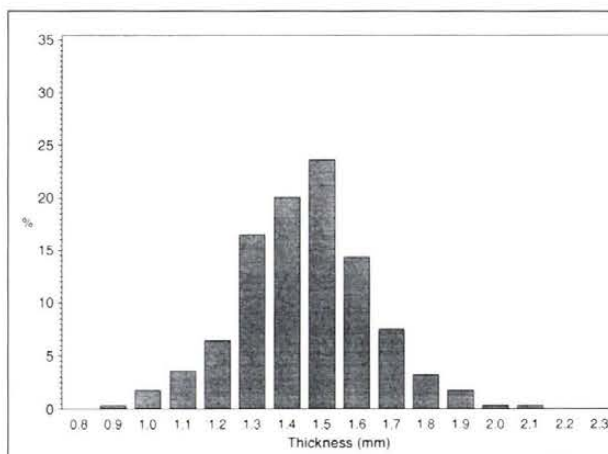
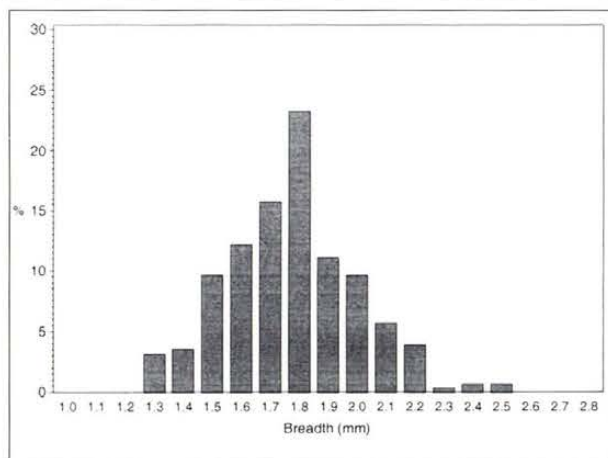
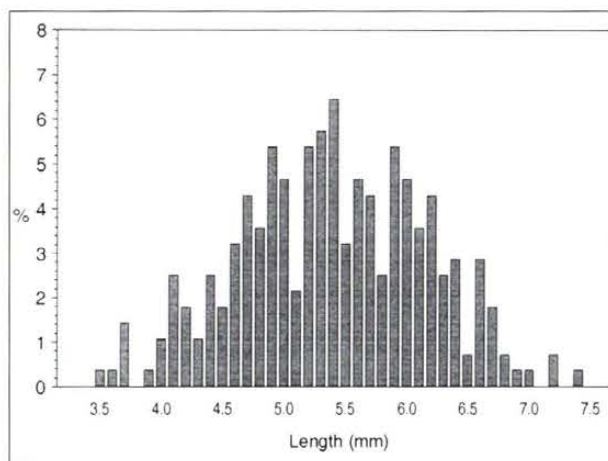


Figure 35. The size distribution of oat (*Avena* sp.) in Häme Castle. $N = 279$. Johanna Onnela.

As the whole material is mainly composed of spring-sown cereals, the wheat grains obviously mostly represent spring wheat.

The small size of the grain is quite an interesting observation, since this feature has been typical of the some landraces of Eastern origin. They were cultivated in Finland as late as the beginning of the 20th century.⁵⁷ Besides grain size, their vegetative characteristics were also poorer than in western

landraces. The grain size was only a half of the size of other types, but it ripened fairly fast. According to Sauli, this eastern wheat had been cultivated in Finland even for hundreds of years.⁵⁸ The Eastern Finns took it with them when moving to more northern regions.

The other crop species

Besides cereals, the sample also included seeds of some other cultivated plant species. The most interesting finds were the charred pieces of buckwheat (*Fagopyrum esculentum*) (Fig. 38). So far, they are the oldest charred remains of this species found in Finland. Buckwheat belongs to the dock family (*Polygonaceae*). It is an annual and cross-pollinating species which thrives especially in poor, sandy soils. Seeds of buckwheat are used in the same way as cereals, for flour and groats.

The first macrofossil evidence of buckwheat dates to the medieval times in Central Europe.⁵⁹ The early pollen evidence of cultivation in Finland has also been dated to the Middle Ages. Pollen of buckwheat was found in the fifteenth-century bottom sediment layer of lake Vuojärvi in Laukaa.⁶⁰

Buckwheat was an integral part of the slash-and-burn culture in Finland. After the use of this cultivation method ceased, the cultivation of buckwheat almost came to an end.⁶¹ The cultivated region was at its widest in the 18th and 19th century, concentrating on the districts of slash-and burn culture in Karelia and Savolax.⁶² Buckwheat is quite a modest crop plant which tolerates acid soils very well. Therefore, it was used as the last crop in rotation on burnt-over lands that were poor in nutrients. If buckwheat succeeded,

Figure 36. Carbonised grains of rye (*Secale cereale*). Scale = 1 mm. Photograph Johanna Onnela.



Figure 37. Carbonised grains of bread wheat (*Triticum aestivum*). Scale = 1 mm. Photograph Johanna Onnela.

it was able to give good crops. However, its sensitivity to spring frosts caused failures that led to enormous variations in yields.⁶³

Besides buckwheat, the sample revealed such old cultivated species as pea (*Pisum sativum*) (Fig. 38), flax (*Linum usitatissimum*) and hemp (*Cannabis sativa*). Pea is a self-pollinating species, which has been cultivated for thousands of years for human and animal consumption. The earliest macrofossil find of pea in Finland is an impression in daub, which dates to 400-500 AD.⁶⁴

The species has two variations, var. *arvense* and var. *sativum*. The former has red and purple flowers and greyish or brownish, often dotted, seeds. The flowers of the latter variation are white and ripened seeds bigger than those of field pea, var. *arvense*. The colour of its seed is green or yellow. In Finland, the oldest cultivated peas have been supposed to represent the field pea with many-coloured flowers.⁶⁵

The cultivation of field pea concentrated in the southern parts of the country in the 18th and 19th century.⁶⁶ In Häme Castle, pea was an important crop plant and seems to have succeeded quite well in the 16th century. Its proportion to the total amount sown in springs 1540-1569 was approximately 6%. At this time, peasants obviously knew the pea as well. Tithing of pea crops is not known until the next century, when the tithing records reveal that pea was cultivated in large numbers in the old parishes of the Sääksmäki jurisdictional district.⁶⁷

In later times, several landraces of the field pea have been known. They had a great deal of variation in size, colour and shape of seeds. According to Gadd, the cultivation of a greyish pea was known in Upper Satakunta (~ regions of Kangasala, Lempäälä, Pirkkala and Vesilahti) in the 18th century.⁶⁸ The seeds were quite small and they ripened rather late. A so-called 'pea of the famine year' with yellowish grey

Figure 38. A - E. Carbonised seeds from Häme Castle. Scale = 1 mm. Photographs Johanna Onnela.



A

A) buckwheat (*Fagopyrum esculentum*)



B

B) pea (*Pisum sativum*)

seeds was cultivated in Pöytyä as late as the beginning of the 20th century.⁶⁹ At the same time, some landraces with reddish brown spotty seeds were cultivated in quite large numbers especially in the Häme district. Their seeds were often big and angular.⁷⁰ Usually the landraces were, however, rather mixed and composed of several different plant types.⁷¹ Because the pea seed from Häme Castle is charred, one cannot detect its colour or surface structure.

The occurrence of flax (Fig. 38) among the grain from the Häme Castle was not exceptional, since Häme was well known as a centre of flax cultivation as early as the 16th century. The farmers sold prepared flax, for example, to fishermen from the Turku (Åbo) archipelago.⁷² Flax has been known in Finland for at least a couple of thousands of years, since the earliest macrofossil finds from Paimio date from 100-400 AD.⁷³ Flax is an annual species with two different variations, oil flax and fibre flax. The oil flax does not grow as tall as the latter and it has a weaker stem. The fibres of the stem are shorter and seeds are bigger than those of fibre flax.⁷⁴

In the 17th century, flax was grown with all the methods known at the time, i.e. on fields and on slash-and-burnt or smouldered lands.⁷⁵ In the Häme district, for example Längelmäki, Orivesi, Lammi, Koski, Hollola and Asikkala were well-known parishes because of their flax cultivation in the 18th century. In Längelmäki and Orivesi, so-called 'green flax' was prepared, where the flax was retted and then dried in the shadow in bunches. In the other parishes mentioned above people used to prepare 'white flax', which was dried by spreading it out in the sun. The market value of green flax was considered better than the white's.⁷⁶

Hemp has been known in Finland, according to the macrofossil finds, since at least the Viking Age.⁷⁷ As early as the 18th century, hemp was grown more widely than flax.⁷⁸ At the beginning of the same century the cultivation of hemp was most common in Häme, but it was quite often cultivated in Ostrobothnia and Savolax as well. The hemp fibre is very durable and it was used for the preparation of fabrics and coverings, sails, carpets, ropes and fishing nets.⁷⁹

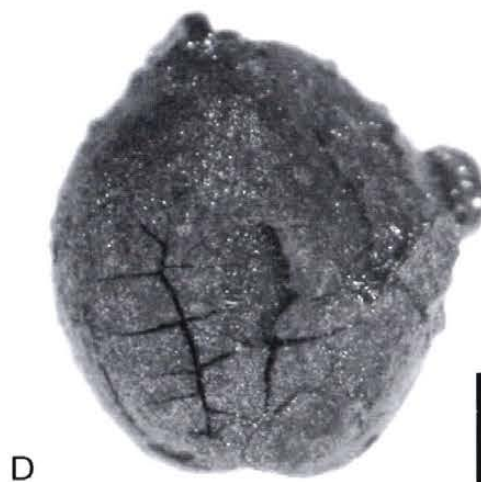
The sample from Häme Castle did not include all the crop plants known in Häme in the late medieval and early modern times. Important species that failed to appear in the sample included hop (*Humulus lupulus*). Enormous amounts of hop were consumed in Häme Castle for the preparation of beer.⁸⁰ Besides hop, beans, turnip and cabbage were also known in the Häme district as early as 16th century.⁸¹

Weeds and ruderals

Among the grain, some charred seeds of weeds and ruderals were present. Most of the identified species may have grown on farming lands in the past.⁸² In Häme Castle, 22 weed species or taxons were identified, which were mostly annuals. As the grain crops in the sample obviously do not come from the same field, the weeds do not necessarily have same origins either. Besides, the number of weed seeds is quite low in the sample because the crops obviously have been cleaned. Therefore, some species that have grown on the fields have probably not ended in the grain crop.



C) flax (*Linum usitatissimum*)



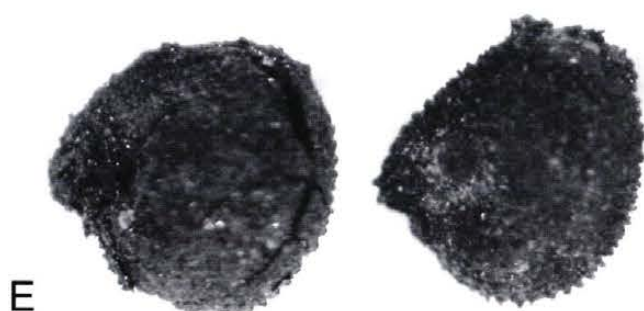
D) hemp (*Cannabis sativa*),

The most abundant species or genera were *Galeopsis* sp., *Vicia hirsuta* -type, *Raphanus raphanistrum*, *Fallopia convolvulus* and *Galium* sp. These weeds are quite common as macrofossil finds. They favour fields which have been sown either in spring or in autumn. Other common annuals in crop fields were *Persicaria lapathifolia* (or possibly *P. maculosa*), *Polygonum aviculare*, *Chenopodium album* (or possibly *C. suecicum*), *Spergula arvensis* and *Stellaria media*, all of which grow more often in spring-sown than in autumn-sown fields. Seeds of *Lapsana communis* prefer to germinate in autumn.

In the Häme Castle sample, several old weed annuals were present, which have almost vanished from fields today or are at least very rare or even threatened. *Agrostemma githago*, *Camelina* cf. *alyssum*, *Centaurea cyanus* and *Lithospermum arvense* all belong to these species, which were typical of old traditional agricultural environments. Seeds of *Camelina* cf. *alyssum* may have belonged either to ssp. *alyssum*, which was an old weed growing on flax fields, or to ssp. *integerrima*, which grew both in flax and cereal stands. Both subspecies have today disappeared from our crop fields.

The big seeds of corncockle (*Agrostemma githago*) (Fig. 38) and field gromwell (*Lithospermum arvense*) were difficult to remove with traditional methods of cleaning grain. They remained in flung or winnowed seed corn and were sown into the field again and again together with cereals. Corncockle was mainly known as a weed of autumn-sown rye fields. In Häme it was obviously connected to spring-sown crops, because the survival of corncockle was uncertain there during the winter. The species may have passed the winter in a granary, from which it was sown back into the field together with seed corn. Corncockle possibly accompanied oat, as the growing period of oat landraces was longer than that of landraces of barley.⁸³ Also in later times, corncockle is known to have come to Finland from Russia among seed corn of oat.⁸⁴ The species has poisonous seeds, which have spoiled the quality of flour.

Seeds of field gromwell (*Lithospermum arvense*) germinate in autumn, and earlier it was a common weed in rye fields. It is possible that the species came from a rye field, since some rye grains appeared in the sample among barley and oat. The seeds may have been mixed with the other crops after harvesting.



E) corncockle
(*Agrostemma githago*)

Acknowledgements

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Endnotes

- ¹ Vilkuna 1998.
- ² Olaus Magnus 1976.
- ³ Aalto 1994; Nordman 1991; Lempiäinen 1994.
- ⁴ Lempiäinen 1992a; Lempiäinen 1996a.
- ⁵ Hammarström 1956; Niitemaa 1955; Nikula & Nikula 1987.
- ⁶ Kerkkonen 1965, 1977; Nikula & Nikula 1987.
- ⁷ Vilkuna 1998; Voionmaa 1912.
- ⁸ Vilkuna 1998.
- ⁹ Vilkuna 1998.
- ¹⁰ Vilkuna 1998.
- ¹¹ Vilkuna 1998.
- ¹² Niitemaa 1955; Vilkuna 1998.
- ¹³ Jacomet & Kreuz 1999.
- ¹⁴ Viklund 1998.
- ¹⁵ Jacomet & Kreuz 1999.
- ¹⁶ Boardman & Jones 1990; Viklund 1998.
- ¹⁷ Viklund 1998.
- ¹⁸ Viklund 1998; Wilson 1984.
- ¹⁹ Kislev & Rosenzweig 1991.
- ²⁰ Hopf 1955; Kislev & Rosenzweig 1991.
- ²¹ Lempiäinen 1996b.
- ²² Onnela et al. 1996; Seppä 1979; Seppä-Heikka 1981.
- ²³ Päivi Luppi's letter 2.4.1998.
- ²⁴ Luppi 1996; Vilkuna 1998.
- ²⁵ Stuiver & Pearson 1986.
- ²⁶ Hämet-Ahti et al. 1998; Alanko & Rätty 1996.
- ²⁷ see Willerding 1988.
- ²⁸ Rousi 1997.
- ²⁹ Luukko 1957.
- ³⁰ Gadd 1777.
- ³¹ Heinonen 2001, Paatela 1953.
- ³² Sauli 1927.
- ³³ Sauli 1927.
- ³⁴ e.g. Pahka in Lieto; Onnela et al. 1996.
- ³⁵ Aalto 1982.
- ³⁶ Rousi 1997.
- ³⁷ Luukko 1957.
- ³⁸ Vilkuna 1998.
- ³⁹ Vilkuna 1998.
- ⁴⁰ Sauli 1929.
- ⁴¹ Sauli 1937.
- ⁴² Sauli 1937.
- ⁴³ Tolonen 1978.
- ⁴⁴ Seppä-Heikka 1986.
- ⁴⁵ Grotenfelt 1922; Vuorela 1975.
- ⁴⁶ Grotenfelt 1922; Rousi 1997.
- ⁴⁷ Soininen 1974.
- ⁴⁸ Luukko 1957; Vilkuna 1998.
- ⁴⁹ Vilkuna 1998.
- ⁵⁰ Gadd 1777.
- ⁵¹ Onnela et al. 1996, Seppä-Heikka 1981.
- ⁵² Lempiäinen 1992b.
- ⁵³ Aalto 1982, Häkkinen & Lempiäinen 1996, Vikkula et al. 1996.
- ⁵⁴ Soininen 1974.
- ⁵⁵ Luukko 1957; Vilkuna 1998.
- ⁵⁶ Ulvinen 1974.
- ⁵⁷ Sauli 1920, 1934.
- ⁵⁸ Sauli 1934.
- ⁵⁹ Rousi 1997.
- ⁶⁰ Vuorela 1993.
- ⁶¹ Rousi 1997.
- ⁶² Soininen 1974.
- ⁶³ Soininen 1974.
- ⁶⁴ Luoto et al. 1981.
- ⁶⁵ Sauli 1929.
- ⁶⁶ Soininen 1974.
- ⁶⁷ Vilkuna 1998.
- ⁶⁸ Gadd 1751.
- ⁶⁹ Sauli 1929.
- ⁷⁰ Sauli 1929.
- ⁷¹ Sauli 1929; Teräsvuori 1912.
- ⁷² Vuorela 1975.
- ⁷³ Seppä-Heikka 1986.
- ⁷⁴ Rousi 1997.
- ⁷⁵ Grotenfelt 1922.
- ⁷⁶ Grotenfelt 1922.
- ⁷⁷ Lempiäinen 1992b; Nunez & Lempiäinen 1998.
- ⁷⁸ Grotenfelt 1922.
- ⁷⁹ Grotenfelt 1922.
- ⁸⁰ Vilkuna 1998.
- ⁸¹ Luukko 1957.
- ⁸² e.g. Gadd 1777.
- ⁸³ Sauli 1927, 1937.
- ⁸⁴ Suominen 1977.

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HATTULA CHURCH AND HÄME CASTLE

Introduction

In the 15th century in the Late Middle Ages the parish church of Hattula in South Finland was built of brick. Around the same time in the neighbouring parish of Vanaja, only six kilometres eastsoutheast from Hattula Church brick parts of Häme castle were laid on an earlier grey stone masonry (Fig. 2 p. 8). Medieval architectural history in Finland has for a long time linked these construction works of brick, maintaining that they did not arise independently of one another. This article discusses the factors linking and separating Hattula Church and the Häme Castle.

The history of research of the church and the castle

The suggestion of the joint fate of Häme Castle and Hattula Church is an old one. In general art-historical works it appears to be mentioned for the first time in 1891, in which connection the church is said to have been "built soon after Häme Castle from bricks remaining from the building works, i.e. towards the end of the 13th century."¹ In later years, this connection was presented on various occasions, especially in relation to events of the 16th century.²

The idea of a broader connection of architectural history other than that of oral tradition is also old³, and it has been presented on several occasions.⁴ In qualitative terms the connection between the castle and the church was placed on a completely new level in the observations, analyses and explanations presented by Knut Drake, whose 1968 doctoral dissertation explored the medieval history of Häme Castle.⁵ During this work and subsequent to it, he addressed the connection between the castle and Hattula Church on the basis of the results of research.⁶

Drake's estimate of the relationship between the castle and the church

According to Knut Drake, "the proximity of Häme Castle, Finland's only castle of brick, had a decisive effect on the use of brick as the main building material especially at Hattula"⁷. At the same time, however, he rejects, and I would claim with due grounds, Iikka Kronqvist's suggestion that a strong Estonian influence is evident in Hattula Church.⁸ Drake also voices agreement with Lars Pettersson, who had observed the similarity of Hattula Church with a group of building termed "twin-window churches" in the history of research. He developed this suggestion further, especially with reference to the construction and form of Mynämäki Church.

I maintain that this general conception is still arguable, with the proviso that the old assumption of twin windows dating only from ca. 1300 is incorrect. Similar windows were made through out the Middle Ages, and they cannot be regarded as chronological feature as was done in earlier studies.⁹ Mynämäki Church, among others, was not built in the early 14th century but in the 15th century.¹⁰

Drake's dissertation demonstrated that the brick components of the main part of Häme Castle had "come about in several stages and through various influences", a position contrary to previous suggestions.¹¹ According to him, these results should also be taken into note in considering the history of construction of Hattula Church.

In the church and castle the brick material displays obvious similarities in both size and special features. According to Drake, also the bond and the bricklaying technique with scaffolding at intervals of 10-12 courses are similar.¹² I would not, however, regard the latter point as conclusive, as similar scaffolding intervals occur over a large area, including the brick architecture zone of Northern

Germany, and it does not appear to bear for example the mark of the master builder. On the other hand, the scaffolding interval is of importance because the above-mentioned interval is explicitly characteristic of brick buildings of the first part of the 15th century and later years, while layers of 8-9 courses were still in use around the year 1400 in Germany.¹³

The brick decoration is a highly important feature connecting the church and the castle. An undeniable feature that both have in common is a band-like niche left in the brick wall, along the surface of which there are bricks laid on their sides which were intended as decorations of the portals and fenestration. These bricks form various designs, such as crosses and lozenges. A well-known example is the series of ornamental designs in the west front of Hattula church, in which I have observed the following series of alternating ornaments:

o x o <> o x o <> o x o <> o x o <> o

(o = round motif, x = lozenge with concave sides, <> = lozenge with straight sides).¹⁴

There are no directly similar series, but there are round and quatrefoil motifs in the same technique.¹⁵ The latter, any more than the special vimberg motifs, are not present in Hattula Church.¹⁶ Häme Castle, in turn, does not have the large ornamental niche cross with thickening of the upright arm that is found in the west wall of the church.

Apart from the above features it is difficult to find any other joint features in the church and the castle. This is mainly due to the fact that most of the structures of the castle have been destroyed, while the features of the church has survived in better state, but they cannot be compared with the castle. For example, one would readily compare the special details of the vaulting of the church with the corresponding features of the castle, but this is not possible as they are not to be found there.

Comparisons, for example with room 26 of the castle cannot be done, because the feature here is a reconstructed vault and it is not even certain whether there was originally a vault in the room.¹⁷ The differences in the appearances of the two building complexes are, of course, due to their different function, the first being built for military purposes while the other for ecclesiastical use in a parish congregation.

In 1968 Drake divided the medieval history of construction of Häme Castle into approximately twenty different stages, which he linked to five specific building periods. He termed the first period the "Curtain Wall Castle" (*Ringmauerkastell*) and dated it to 1260-1290. The "Grey Stone Castle" (*Feldsteinburg*), marking the second period, was built between 1270 and 1300. The third period was the "Cock Tower" (*Hahnenturm*) 1300-1350; the

Figure 39. Hattula Church from the southwest. Photograph Terhi Mikkola.



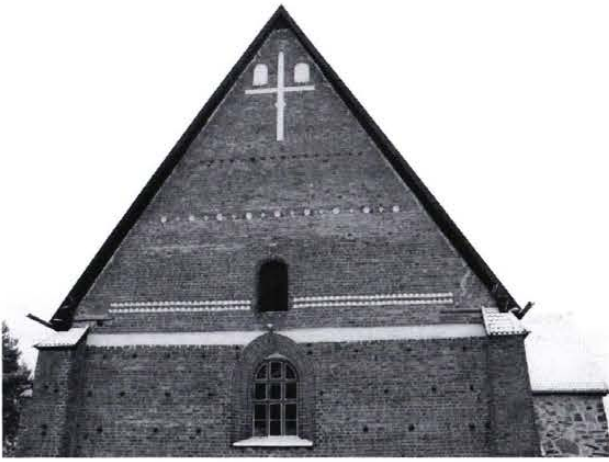


Figure 40. The west front of Hattula Church. Photograph Terhi Mikkola.

fourth was the "Brickwork Castle" (*Backsteinburg*) of 1350-1450 and the final medieval construction period was the fifth namely the "Corner Tower Castle" (*Eckturmberg*) from 1450-1520.¹⁸

Drake was aware of the hypothetical nature of the dates already at that stage, because there were few researched comparisons. Moreover, he worked according to the paradigm of the day, under the shadow of Iikka Kronqvist and other authorities, both domestic and foreign, of the early and middle years of the 20th century.¹⁹ The research situation changed particularly in the 1980s and the 1990s as the result of increasing archaeological research and studies in architectural history in individual castles and as research became freer in the former Eastern Bloc countries. During the following decade the Kronqvist paradigm began to disintegrate in Finland, as differences grew sharply between the orientation favouring the high age of local churches and the representatives of scientific research seeking to be as value-free as possible.

In 1996 Drake had come to a stage in his studies in which he cautiously presented a new date for the oldest stage of Häme Castle at the autumn seminar of the Society for Medieval Archaeology in Finland. In a paper read in the seminar he concluded that the oldest stage had been built during the term of castellan (or bailiff) and privy councillor Magnus Kase (Ängel) and his spouse Bengta (Benedicta) Bengtsdotter (Oxenstierna) ca. 1372-1390.²⁰ The new date received strong support from the fact that the main evidence for his previous dating, the similar slanting alignment of the oldest stage of Stockholm Castle and Häme Castle, did not date from the mid-13th century as had been regarded as definite.²¹ New research has shown that the curtain wall of



Figure 41. Tile decoration in the northeast wall of the inner ward of Häme Castle. Photograph Terhi Mikkola. (NBA, Häme Castle)

Stockholm Castle was built after 1331 at the earliest, most probably only in the middle or second half of the century.²²

The result that the oldest stone-built part of Häme Castle was 100 years younger than assumed in the previous dating naturally had repercussions on the later building periods. We can speak of a kind of domino effect. The building periods have now come to have a relatively credible new chronology based on personal history: "Cock Tower" 1410-1443, "Brickwork Castle" 1472-1490, and the "Corner Tower Castle" 1503-1520.²³

In view of the date of Hattula Church the only significant building period is the "Brickwork Castle" stage, which Drake divided in 1968 into six stages (1-6) from the 14th century to ca. 1450.²⁴ The moulded bricks and bricklaying technique of "Brickwork Castle 2" are also to be found at Hattula (see above p. 166), but the same architectural forms, such as a band niche placed beneath the eaves, do not appear until the period of "Brickwork Castle 5", in 1968 dated to ca. 1350-1450. The largest number of similarities between the buildings, however, are in the period of "Brickwork Castle 6", with the above-mentioned decorative forms made of moulded bricks.²⁵

In his recent studies Drake has, as described above, condensed the stages of the "Brickwork Castle" period into 18 years instead of the former period of over a century. On the other hand, this short period is given a much later date than in the earlier chronology: the period from the 14th century to ca. 1450 has now become 1472-1490. In the light of present information, the new period is decisively more credible than the earlier one.

The date of the Hattula Church

In my doctoral dissertation in 1994 I criticized the grounds for dating the "Brickwork Castle" stage that were still followed then, and noted features of the church that clearly place it in the 15th century. I specified the dating to a few years between 1440 and 1480.²⁶ Slightly later, I analysed the church in closer detail and arrived at the same result, albeit with the proviso that "the time of construction can be estimated to be closer to the chronological boundary of 1440 than to 1480."²⁷

As a result of new studies concerning Häme Castle the last-mentioned estimate needs to be amended. I maintain that the building of Hattula Church was the result of the aim of the castellan of Hämeenlinna to make not only the castle but also the nearby church part of an integrated landscape of power. This primarily concerned the castle, and secondarily the church. Accordingly, the dating of the "Brickwork Castle" period also applies to Hattula Church, as already has been pointed out by Tanja Ratilainen.²⁸ This means that the *post quem* of its bricklaying work is most probably none other than the year 1472.

Whether or not the year 1490 can be regarded as the *ante quem* boundary is more uncertain.²⁹ In

its features of classification the relative dating of the building is earlier than Hollola Church, situated in Häme ca 60 km to the east of Hattula Church, which I have dated to between 1495 and 1510 in my recent studies.³⁰ I would like to suggest that the brick church of Hattula was built before 1485, but this is not possible, as the available dates are not sufficiently precise. By stating, for example, that Hollola Church falls in between 1495 and 1510 I do not imply that construction began in 1495 and ended in 1510. By this dating I mean that the building of Hollola Church took place during some years between these chronological limits.

Accordingly, the most reliable date of building of the Church of Hattula is 1472-1490. It may be possible to present a more accurate date in the future.

In any case the intensive study of churches and castles that has been pursued in recent years has achieved considerable progress in defining the culture-historical role of medieval buildings, and for laying the basis for a new kind of study of medieval history. At the same time the connection between Häme Castle and Hattula Church that was already noted by scholars over a century ago, has survived, bringing together past and present research.

Endnotes

¹ Aspelin 1891, 11. According to Aspelin, "many of the details of the building bear witness to this item of tradition". He cites as examples the shape of the vaults, the curvature of the choir window with the "ancient" crucifix beneath it, and "the two masks of the west front". It appears to me, however, that with these arguments he seeks to prove the age of the church rather than any connection with Häme Castle. – As late as 1887 Emil Nervander defined Hattula Church as having been built "in the mid-13th century". Nervander 1887a, 49; Nervander 1887b, 49. Already in the latter half of the 19th century, a characteristic feature of the history of research of the church emerged, viz. continuously younger dates as the information and concepts of researchers developed. This trend, however, was not consistent. For example, in 1901 Julius Ailio presented approximately the same views as Nervander had expressed 14 years previously. Ailio 1901.

² See e.g. Ailio 1901; Ailio 1914; Rinne & Meinander 1912; Melander 1913; Kartano 1949.

³ See e.g. Ailio 1913, 5.

⁴ See e.g. af Hällström 1961, 6.

⁵ Drake 1968.

⁶ Drake 1967; Drake 1970. In the latter study (p. 12) Drake notes that it was not "intended to be a conclusive investigation of the problems of architectural history concerning the church, but was only meant to place them in a new light".

⁷ Drake 1970, 12.

⁸ Ibid., 21. Kronqvist had presented his views e.g. in Kronqvist 1948, 67.

⁹ Hiekkanen 1994, 177, 223-224.

¹⁰ Hiekkanen 1994, 181-182, 223-225.

¹¹ In his doctoral dissertation Drake discusses the history of Brickwork castle on pages 80-131 and the results of earlier research on pages 16-19.

¹² Drake 1970, 24.

¹³ The author's observations of churches and castles in Mecklenburg, Schleswig and West Pomerania in April 2002.

¹⁴ On the ornamental pattern, see Hiekkanen 1994, 108.

¹⁵ Drake 1968, fig. 87.

¹⁶ Ibid., figs 71 and 88-89.

¹⁷ See Drake 1968, 114.

¹⁸ Ibid. 40, 56, 74, 124, 150. – The apparent overlap of the dates is of a technical nature, and is related to the margins of dating.

¹⁹ Drake himself has noted the influence of Kronqvist and the researchers of the castles of the Teutonic order on his research process of the late 1960s. Drake 2001a, 212; Drake 2001b, 125.

²⁰ Drake 1996c. See also Drake 1997, 5, with reference to the paper delivered at the seminar. Drake had been interested in Magnus Kase's role already at an earlier stage. See e.g. Drake 1996b, 10-11.

²¹ On the slanted alignment of the curtain wall of Stockholm Castle and its role in the dating of Häme Castle, see Drake 1968, 39-40 and cited literature.

²² Drake 2001a, 215; Drake 2001b, 127. On recent research concerning Stockholm Castle, see Söderlund 2001.

²³ See Drake 2001a, 215; Drake 2001b, 126-128. Drake has combined the two first construction periods presented in his dissertation, the "Curtain Wall Fort" and the "Grey Stone Castle", into a single period called the "Grey Stone Castle" (*Feldsteinburg*). Drake 2001a, 212-213.

²⁴ Drake 1968, 105-115, 124.

²⁵ Drake 1970, 24-25.

²⁶ Hiekkanen 1994, 220-221 and notes.

²⁷ Hiekkanen 1996, 47-56, especially 56. I also pointed out that no more than 10 years need have passed from the beginning of the planning of the project to the laying of the last brick and the first painted decoration.

²⁸ Ratilainen 2001, 6.

²⁹ Dendrochronological samples have been taken of the church, but owing to a fire in the 18th century their number remains small and their interpretation is difficult or impossible. Only one analysis result can be used for dating, but it has received improper treatment in the literature to date. In the main body of text of the book *Hattulan ja Tyrvännön kirkot* (The Churches of Hattula and Tyrväntö), Marja Terttu Knapas notes that the sample contained year-rings indicating a period of growth from 1243 to 1378. In the same connection, she states that the number year-rings missing from the surface of the timber in question has been established as "at least ten, but possible more". Knapas 1997, 18. This formulation is misleading, as Pentti Zetterberg, who conducted the actual dendrochronological studies states this point in the following terms: "... the number of missing year-rings can be estimated to be at least ten, but it is possible that up to a hundred year-rings can be missing from the surface of the timber. Accordingly, the tree was felled in a period from the late 1380s to the 1470s." Knapas' manner of quoting this information is hardly improved by the qualification of this claim that she presents in note 24 of her text, which in fact reveals that she is aware of her explicit formulation. This point would hardly be of more than curiosity value, if Knapas was not explicitly seeking to date, also with other means, the Hattula Church to ca. AD 1400. – A similar standard of discussion regarding the sample timber appears in *Ristin Tiellä 750 vuotta, Hattulan seurakunnan historia* (a history of the congregation of Hattula by Eero Ojanen). Here, too, its is noted misleadingly and in order to embellish the results that "according to the researcher Pentti Zetterberg, the timber may be at least ten years younger" than the year 1378. The following pages of the text reveal the purpose behind this formulation: the church must be kept to its old date of ca. 1400. This objective is also served by the fact that Ojanen artificially excludes Häme Castle completely as an aid in the dating of the church. Ojanen 1999, 80-85. In my opinion it would not have been undue requirement for the parties that planned written works on national monument of the calibre of Hattula Church to have obtained writers with sufficient expertise and professional integrity.

³⁰ Hiekkanen 2003, 59-60.

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Abbreviations:

AMAF	Archaeologia Medii Aevi Finlandiae
FM	Finsk Museum
HAIK	Historiallinen Aikakauskirja
NBA	The National Board of Antiquities in Finland
SKAS	Journal of the Society for Medieval Archaeology in Finland
SM	Suomen Museo
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- VII Castella Maris Baltici VI. The proceedings of a Symposium held in Vilnius, Lithuania, on 18-21 September 2001. (in print).
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The work in hand presents Finland's perhaps most studied medieval castle — **Häme Castle**. This book offers an excellent chance to become familiar with those studies in English. It contains articles from different disciplines: history, art history, botany and archaeology. A bibliography provides an opportunity to reach earlier research as well.

The main subject of the book is **Anna-Maria Vilkuna's** work, in which she discusses the castle's function as one of the Crown's economic centres in the 16th century. Her work also gives a good picture of the everyday life of Häme Castle at that time, answering questions such as Who were the people working at the castle? What were their duties? How much were they paid? What did they eat? **Johanna Onnela's** article about a macrofossil sample from Häme Castle gives further information about nourishment in the form of crop plants used or stored at the castle.

A survey of the history and the research history of the castle was written by **Knut Drake**. He participated in the research of building archaeology in the main castle in the mid-20th century and published the results in his dissertation in 1968. In addition to this, he now deals with interpretations from other scholars and his own new ideas. When research in the main castle was completed, it was continued in the outer bailey of Häme Castle. **Päivi Luppi**, who participated in that work, gives here an interpretation of the outer bailey's building phases.

The dating of the Häme Castle and the nearby Hattula Church, structures whose building histories are traditionally linked, is treated here by **Markus Hiekkänen**, who has specialized in medieval churches in Finland. **Terhi Mikkola** writes about the inner structures of the main castle and gives a hypothesis of their use in the late Middle Ages.

This book belongs to the *Archaeologia Medii Aevi Finlandiae* series, publications of the **Society for Medieval Archaeology in Finland**.