



CASTELLA MARIS BALTICI 6

CASTELLA MARIS BALTICI 6

CASTELLA MARIS BALTICI 6

Editor Albinas Kuncevičius,
Layout Alvydas Ladyga

Front cover: Castle of Trakai

Photos by Albinas Kuncevičius

Back cover: Royal palace in an Upper castle.

*Corrected S. Lasavickas sketch-project 1977–2001,
3 - D view by V. Abramauskas, drawn by A. Mizgirienė*

ISBN 9986-420-55-5
ISSN 1236-5882


Savastis
Vilnius 2004

CONTENTS / ZUSAMMENFASSUNG

Charlotte Boje Hilligsø Andersen	Material culture in Danish castles9
Aleksander Andrzejewski, Leszek Kajzer	The Chelmno bishops' castle in Lubawa in the light of the latest research17
Lars Bengtsson	Three crowns – the royal castle in Stockholm23
Maria-Letizia Boscardin	Die Wasserversorgung auf Schweizer Höhenburgen35
Tomáš Durdík	Zur Einflussproblematik im Rahmen der böhmischen Burgenarchitektur41
Aleh Dziarnovich	Castella Alboruthenica: castle building in Belarus at the crossroads of cultural influences during the 12 th to 14 th centuries49
Øystein Ekroll	Norwegian castles north of the Arctic Circle55
Nils Engberg	Three castles on Hjelm island – their military, social political and significance.....63
Giedrė Filipavičienė	Retrospection of Trakai fortification system in the 14 th –15 th centuries83
Jonas Glemža	Medininkai castle93
Christofer Herrmann	Deutschordensburgen in der „Grossen Wildnis“97
Napaleonas Kitkauskas	The primeval relief of the Lower castle of Vilnius and the earliest building105
Raman Likhashapka	The Western European articles and innovations in the castles' material culture of the Belarusian Nioman Region in the 14 th –17 th c111
Werner Meyer	Burgenbau und natürliche Umweltbedingungen115
Terhi Mikkola	Spatial organization in the late Medieval castle of Häme, Finland123
Michail Miltschik	Die Verteidigungssysteme von Iwangerod und Narva: Wechselwirkungen in der Entwicklung im 15.–18. Jahrhundert131

Ieva Ose	Die ersten Burgen mit regulärem Grundriss in Lettland141
Tadeusz Poklewski-Koziell	The royal castles and defensive towns on trading routes through Poland to the Baltic Sea in the 14 th–15 th century. A contribution to the history of country defence system planning.....147
Kazimierz Pospieszny	Der preussisch-livländische „Konventshaustyp“ als eine Kloster-und Herrschaftsidee153
Gintautas Rackevičius	The royal palace in Vilnius Upper castle – problems of reconstruction159
Henriette Rensbro	Stige castle 1314 AD – a Danish wooden castle ?.....165
Anders Rejnert	Some Scanian and Scandinavian castles and their relations to the Livonian Order173
Heinz Sauer	Vir nobilis Bernhardus de Lippia (1140–1224), Spurensuche im Balticum185
Daiva Steponavičienė	Gothic period music in the court of the Lithuanian Grand Duchy197
Tomasz Torbus	Die Untere Burg zu Wilna (Vilnius) und ihre möglichen Vorbilder201
Gintautas Zabiela	Castle warfare between Lithuania and the Order in Lower Panemunė in the late Middle Ages211
Algirdas Žalnierius	The first castle of Kaunas219
Rita Mosiejienė	Symposium Castella Maris Baltici VI 231
	Bibliography / Literaturverzeichnis235

On September 18–22, 2001 the Symposium Castella Maris Baltici VI was held in Lithuania. This is already the 6th symposium for the researchers of the medieval castles. The first symposium was held in Turku, Finland in 1991, the second – in Nyköping, Sweden in 1993, the third - in Malbork, Poland in 1995, the fourth - in Estonia in 1997, and the fifth – in Denmark in 1999.

The topic of the conference held in Lithuania was “Contacts and Genetically Dwellings in the Castle Buildings”. Over 40 scientists participated in the conference from Denmark, Belarus, Finland, Sweden, Switzerland, Germany, Russia, Great Britain, Poland, Latvia, Estonia, and Lithuania. In the conference there were not only reports presented but also the most famous castles of Lithuania visited in Vilnius, Trakai, Kernavė, Kaunas and Klaipėda.

The time of this conference coincided with the European Heritage Days “Defensive Fortifications in Lithuania”.

This conference was organised by the Public Institution Academy of Cultural Heritage established by Vilnius University, Vilnius Academy of Arts, Vilnius Gediminas Technical University, Ministry of Culture of the Republic of Lithuania and Department of Cultural Heritage Protection. The Symposium Castella Maris Baltici VI was sponsored by the Department of Cultural Heritage Protection.

The Center of Cultural Heritage funded the publishing of this publication. I would like to express my gratitude to Diana Varnaitė, Director of the Department of Cultural Heritage Protection, Vitas Karčiauskas, Director of the Center of Cultural Heritage, Alvydas Nikžentaitis, Director of Lithuanian Institute of History, Juozas Bardauskas, Director of the Publishing House Savastis, and editors of the publication prof. Werner Meyer and dr. David Gaimster.

Especial thanks deserve my colleagues who organised this event Rita Mosiejienė, dr. Justina Poškienė and dr. Gintautas Zabiela.

Dr. Albinas Kuncevičius

wers were difficult to defend against an enemy inside the curtain wall. The small dimensions of the towers also means that only a few men could stand inside them. They might have been watchtowers, and from them men armed with crossbows or possible handguns could defend the church against a small force, like a band of raiders.

The northern tower is connected to the church by a secondary wall with a doorway which has no trace of a door. The date of this wall is unknown, but it is probably medieval. It is clearly secondary to the chancel.

According to an 18th century source the curtain wall was raised as a defence against the "Russians", a name that can mean all eastern people. There are stories of raids by Karelians to this region in the 15th century. In 1338 the neighboring church of Lenvik and the manor of Bjarkøy were plundered and burnt by a band of raiders (Bertelsen 1994: 252).

Such raids are the probable explanation for both the concentration of the priests and the defensive wall.

Bishop Nannestad notes in his diary of 1750 that "the churchyard has been surrounded by a beautiful tall wall, a part of which is preserved on the eastern and southern side. On the eastern side by the chancel have been in the churchyard wall two watchtowers that still have their vaulted (i.e. arched) doors, corridors and stone stairs, and also a parapet. Through the said beautiful, but now delapidated wall is a vaulted (e.g. arched) doorway to the (north), and a large gate to the south (Figs. 12-13), above which is said to have been a tower, in which the great bell is said to have hung" (Ryjord 1913: 33 (author's translation)). The curtain wall was earlier taller than today, 14-16 feet /4.2-4.8 m (Ryjord 1913: 34).

Next to the church, on the present minister's residence, remains of medieval cellars have been observed, and many finds, e.g. imported pottery, tell about affluent inhabitants. This must have been the residence of the priests' college in peaceful times.

A church surrounded by a curtain wall is known only in one other place in Norway, at Gran north of Oslo, where two 12th-century churches were protected by a wall dating to the late 13th century or later. Today, only a square corner tower is preserved (Ekroll 1995: 96).

The wall and towers of Trondenes were strong enough to resist attacks from raiding bands of robbers, but not an organized attack by an army. It was only the former that posed any threat to this area, as it was too far to the south for Russian armies to reach. In case of an attack, the local population could retreat behind the walls for protection and defence. The coastal population of Norway was organized in



Fig. 12. Trondenes church. The secondary gate between the church and the northern tower, c.1910. Photographer unknown. Riksantikvarens's Archive, Oslo



Fig. 13. Trondenes church. The southern tower with its entrance door, looking north, c.1910. Photographer unknown. Riksantikvarens's Archive, Oslo

small areas called skipreider, each of which should maintain and man a ship for the defence of the country, the leidang. In the roofwork of Trondenes, a cut-up sail is used to cover up cracks between the planks. The enormous attic above the nave could well have been used to store the sails and other equipment belonging to the leidang ship of Trondenes. However, by the middle of the 15th century the leidang organization was hardly functioning any more, and it is just as probable that the sail belonged to one of the archdeacon's ships. The attic could also be used to store the large quantities of dried codfish before it was shipped to Bergen and sold to Hanseatic merchants.

There is no indication that the secular powers had anything to do with the building or the maintenance of the defensive wall at Trondenes. It is a purely ecclesiastical establishment. When the threat of attacks from the east subsided after 1478, and especially after the Church was reformed in 1537, there was no longer any need to maintain this wall. It gradually fell into disrepair, until in 1750 less than half of it was preserved and today even less.

Nils Engberg

THREE CASTLES ON HJELM ISLAND – THEIR MILITARY, POLITICAL AND SOCIAL SIGNIFICANCE

Die Burgen auf der Insel Hjelm – ein Nest für Gesetzlose

Im Jahre 1286 wurde Erik Klipping, König von Dänemark, ermordet. Einige Adelige aus führenden Familien, die heute als „die Gesetzlosen“ bekannt sind, wurden des Mordes schuldig erklärt. Sie verliessen das Land und verbündeten sich mit dem König von Norwegen, der zu dieser Zeit im Kriege mit Dänemark stand. In 1290 landeten die Gesetzlosen auf der unbewohnten Insel Hjelm. Sie begannen falsche Münzen herzustellen und befestigten das Zentrum der Insel. Überdies – wie die Ausgrabungen von 1999–2000 gezeigt haben – errichteten sie auch Burgen auf der Ost- und Westseite der Insel, so dass die drei Burgen eine zusammenhängende Befestigung der Insel bildeten. Die be-

iden Burgen an der Küste dienten dazu, die Schifffahrt längs der Insel zu beobachten. Sie ermöglichten, den Feind zu verwirren im Falle eines Angriffs, der die Verteidigung zersplittert hätte, und einen Gegenangriff aus verschiedenen Stellen zu führen. Aber warum eine Insel befestigen, die mitten in feindlichem Territorium liegt und wo falsche Münzen hergestellt wurden? Wahrscheinlich versuchten die Gesetzlosen, den dänischen König zu erniedrigen und zu provozieren. Im Jahre 1295 wurde ein Vertrag geschlossen und die Herstellung falscher Münzen hörte auf, aber erst 1306 war der König von Dänemark mächtig genug, um die Insel zu erobern.

Nils Engberg
National Museum of Denmark
Danish Middle Ages and Renaissance
Frederiksholms Kanal 12
DK-1220 Copenhagen, Denmark

Introduction

In 1286 the Danish king Erik Klipping was murdered in Finnerup Barn (Fig. 1). A group of noblemen, belonging to some of the leading families in the land, were convicted as participants in the murder. They fled the country and allied themselves with the Norwegian king, who at that time was at war with Denmark. In the years 1289–93 the outlaws, together with the Norwegian king, attacked the Danish coast with large fleets of ships. During this period of warfare, Hjelm island, right in the middle of the Danish kingdom, was fortified in 1290 by the outlaws and the Norwegian king (Fig. 2). This became part of the power-struggle between the two countries. The island became not only the place from which attacks and plundering expeditions were launched, but also, with the help of captured masters from the Royal Mint, the place where counterfeit coins were made. The occupation of the island lasted until 1306, when the Danish king attacked and burned down the fortifications. This we know from written sources such as a treaty made between the Danish and the Norwegian kings in 1295 and documents in the Vatican from 1297 concerning a court case between the Danish king and the Danish archbishop (Olsen 2002).



Fig. 1. The conspirators ride away from Finnerup Barn after the murder of King Erik Klipping. They are painted as an illustration of the oldest ballad about the murder: "So many men in Denmark all want to be masters" with the refrain "That is why the country is in trouble". Painting by Otto Bache. Det Nationalhistoriske Museum på Frederiksborg

Folksongs about the outlaws and specially their leader, Marsk Stig were written down during the Renaissance. By then, Marsk Stig had become the ideal of a mediaeval knight and Hjelm was pictured as the place where he fled with his family and built a castle as his home. This version of the story became very popular and has lasted until the present day (Jørgensen 2002)

From the beginning of the 14th century until the beginning of the 19th century, Hjelm was uninhabited, but written sources inform us that it was used occasionally for horse breeding. The middle of the island is a huge morainial hill of 35 hectares which rises with steep sides 40 metres above sea level. The foreshore has changed a great deal since the Middle Ages and it is uncertain which parts of it existed at that time.

From around 1800 until 1964, when the island once again became unoccupied, it was brought under agricultural cultivation and, on several occasions during that period, when fields were being ploughed, counterfeit coins were found. Between 1854 and 1856, when a lighthouse and outbuildings were erected on the formerly fortified central part of the island (Fyrbakken - Lighthouse Hill), the remains of a cellar made of granite boulders were found, but no archaeological excavation was carried out. In 1894

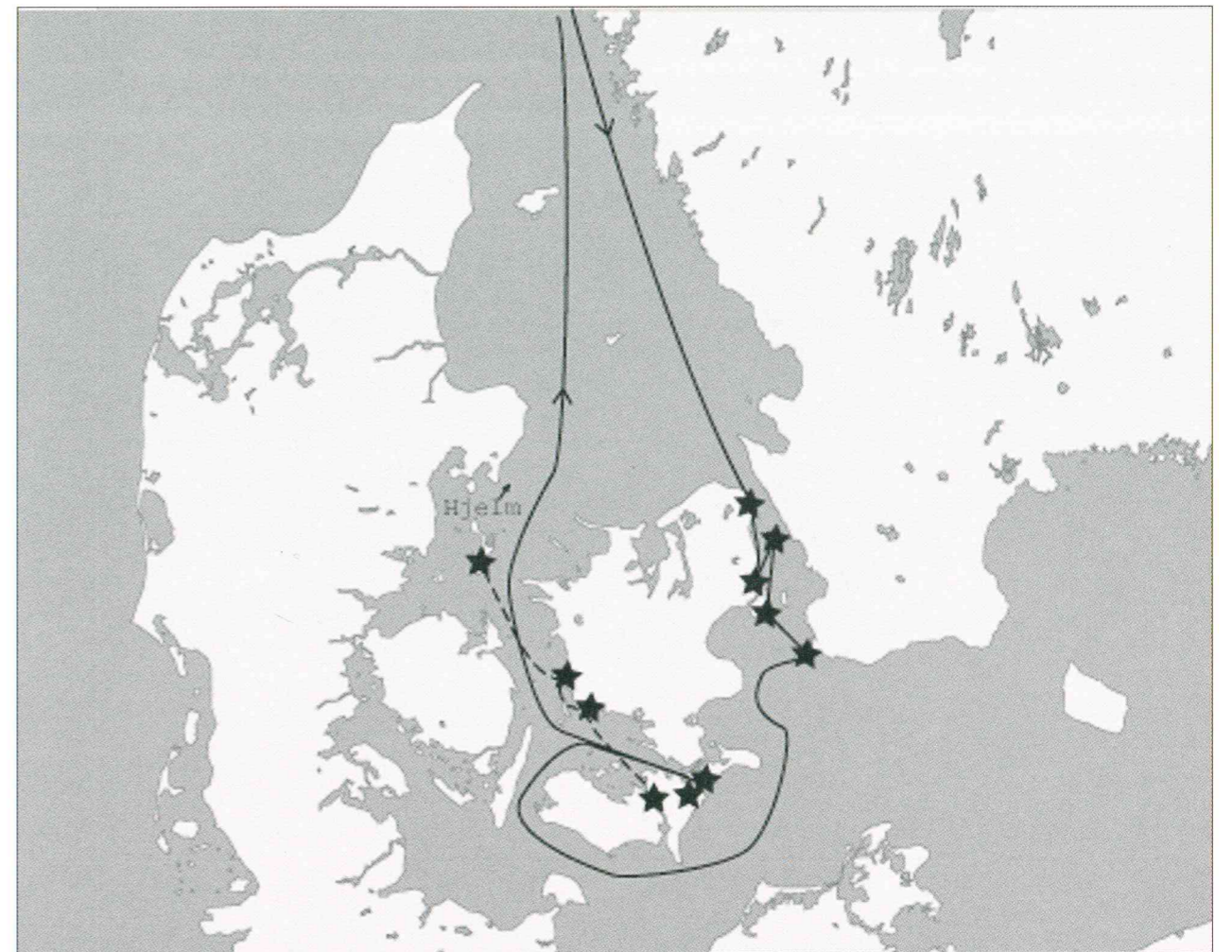


Fig. 2. Map of the King of Norway's war-campaign in Danish waters, waged together with the outlaws in 1289

trial excavations took place at Fyrbakken and two other fortified sites, Skaadebakken on the east of the island and Kastelsbakken on the west, but the results were disappointing. They did not find the splendid remains of Marsk Stig's castle on Hjelm, that the folksongs and nationalistic romanticism had invented, and they did not find the Mint, where the counterfeit coins had been made. Again, in 1952, there were minor investigations. Remains of timber constructions from the motte-like fortification were found on Skaadebakken and stone pavements and possible stone foundations were investigated on Kastelsbakken. The dating of the finds was uncertain and one of the theories was that Skaadebakken was an 11th century motte which served as a lookout and signal post, while Fyrbakken was "Marsk Stig's castle", that is the castle dating from the period 1290–1306. Kastelsbakken was probably part of the outlaws fortification too, but could also be a fortification from the war between Denmark and Sweden in the 17th century or perhaps from the time of the Napoleonic wars at the beginning of the 19th century, when Denmark was fighting the English.

Thanks to funding from A.P. Møller og Hustru Christine Mc-Kinney Møller's Foundation and the Aage

og Johanne Louis-Hansen Foundation it was possible, in 1999 and 2000, to carry out 10 weeks of archaeological investigation with a large team, both on the fortified sites at Fyrbakken and Kastelsbakken, as well as on the open land, where we tried to locate the mint. The research project has been a joint enterprise between Ebeltoft Museum, Moesgaard Museum, the National Museum and the Medieval Archaeology Department at Aarhus University (Fig. 3).

Fyrbakken Castle

Fyrbakken, Hjelm's most noteworthy mound, lies in the middle of the island, 45 m above sea level at its highest point. It lies on a morainial ridge running north-south and from here the land falls evenly on all sides down towards the coastal cliffs. Today the mound appears as a rectangular hilltop stronghold 50x30 m, ringed by a dry moat of up to 22 m wide, the bottom of which lies 8 m below the top of the mound (Fig. 4). To the east there is no trace of a moat. Either it was filled in when the lighthouse keeper's house was built

in 1856, or there was no moat on this side, Mother Nature has seen to it that the land drops sharply away to the east. On the western side, the bottom of the moat is 2m lower than the surrounding area. In more recent times, a winding path, a cart track up the mound's north side, has provided access. The lighthouse and the keeper's house with its 3 wings cover most of the hilltop. The area around the buildings, which is only about 3m wide, has not been built on and is covered with grass and plants. The northernmost part of the hill, where the lighthouse stands, rises a good metre higher than the rest of the hill. The slope is sudden and precipitous. There are no visible remains of the mediaeval stronghold.

Today Fyrbakken is a protected site, which in practice means that only minor archaeological work is permitted. From the beginning therefore, the archaeological digs were carried out within a very narrow framework. For that reason trial ditches were dug in field 1-5 so that we could form an overview of the cultural strata on the different parts of the hill where we could dig, away from the lighthouse and the keeper's house (Fig. 5). In situating field 1 where we did, important information about earlier building construction on the hill was taken into account and this was the only site on Fyrbakken that was later extended. Field 2 was excavated as a long investigative ditch from the top of the hill, down through the moat to the west and out onto the open land, so that we could understand the moat's original size and shape. Sites 3,4&5 were

situated respectively on the S, N and eastern edges of the mound.

Originally the ridge in the middle of the island rose about 42 m above sea level. It was the island's highest point. This was used when the castle was to be built and a moat was dug and the southern end of the hill removed. Excavations on field 1-5 made it possible to determine the level of the ridge, which became the castle mound. The former vegetation layer of the hill was a 25 cm thick layer of light brown sandy soil containing a little charcoal and small lumps of clay. To the south the hill's surface was 42.40 DNN, to the north 41.35 DNN and to the east 41.55 DNN. All in all, a fairly level plateau, rising about one metre in the south. When they decided to use the ridge as a castle mound, they chose also to change its shape, making it higher with clay dug out when the moat was formed. The mound was raised by only 0.3 m in the south (field 3) but in the north 1.6 m of clay were added. This meant that they not only smoothed off the hill's different natural levels, but also made it higher in the north where the approach route must have been. This meant that the castle mound was a good metre higher than the ridge north of the moat - a valuable difference in level from the strategic point of view.

The most significant element of the fortifications was the height of the mound, which was further strengthened by an 8 m deep and about 22 m wide moat. In the ditch (field 2), dug down the side of the rampart and out through the moat, we were able to



Fig. 3. Trail ditches and excavations-fields on Hjelm 1999 and 2000. Measured by P. E. Skovgaard Jensen, H. C. Clemmesen and C. Dam. Photo: Kampsax

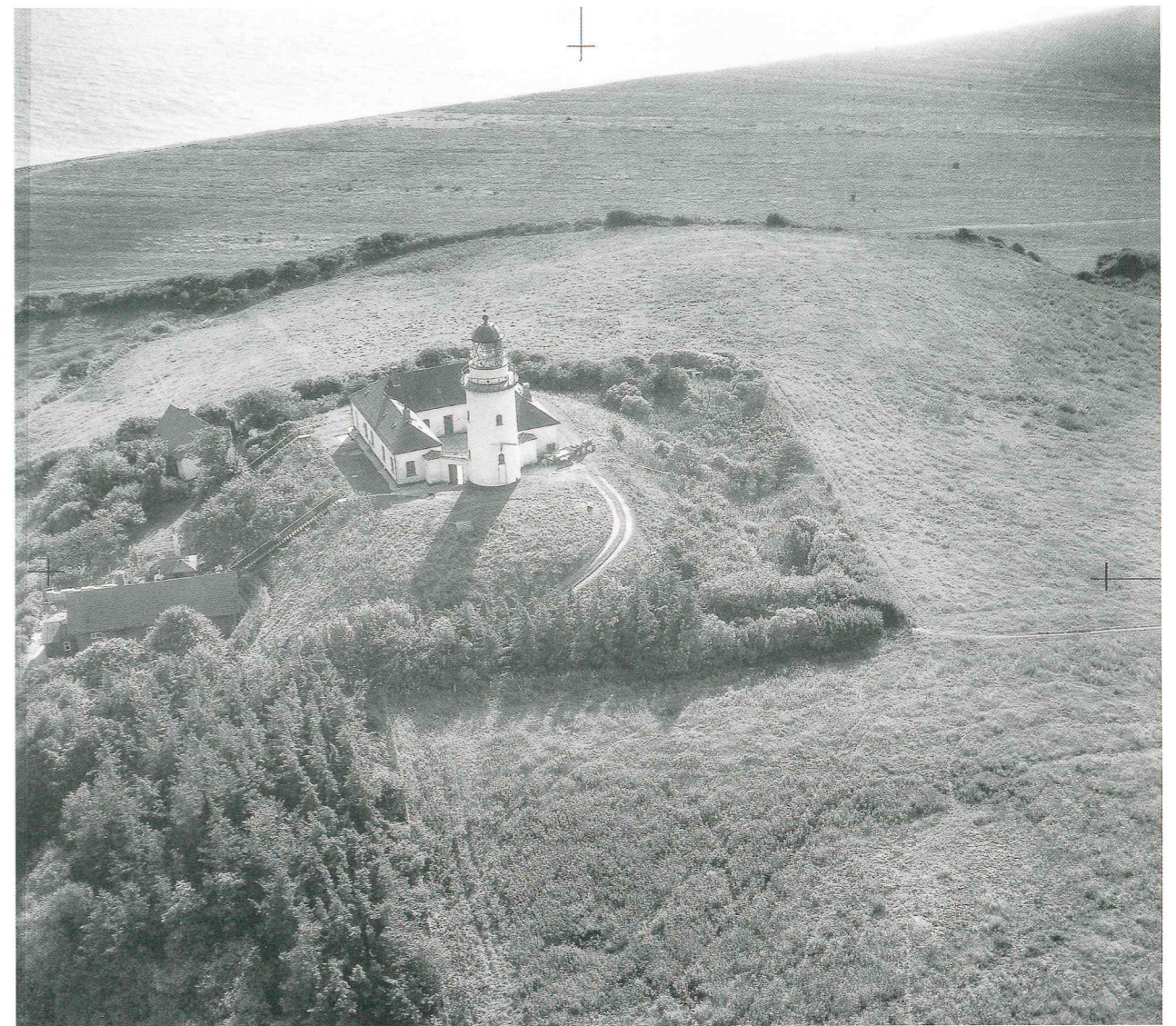


Fig. 4. Fyrbakken seen from the north, 1969. Photo: Hans Stiesdal

establish that today they are, generally speaking, the same shape as they were in the Middle Ages.

On the very eastern edge of the mound, (Fig. 5), a posthole of more than 1.2 m was recorded. The post was dug 1.4 m down into the clay. The impression of the post itself lay outside the field but the large dimension of the hole shows that the post was a massive one. The fact that the post was placed towards the edge of the mound lends itself to the interpretation that the castle mound was protected - as was confirmed on Kastelsbakken - by a strong palisade along its edge. This interpretation is strengthened by a concentration of iron nails found on field 3 at the southernmost end of the mound. These were found in the burnt stratum dating from the time when the castle was overthrown and can best be explained as nails used to build the palisade.

The castle was approached from the north. A difference in height of only one metre would not have made it difficult for people or vehicles to come

into the castle. At this point the moat was 12 m wide. It is quite possible that in the north there was a smaller redoubt, an additional defence to protect the connecting bridge, the castle's weakest point. So a 30.5 m long x 5 m wide exploratory ditch was dug northwards down a steep slope, which could be the remains of another moat (Fig. 5). However this slope is a natural one and, since another ditch out to the west revealed no traces at all of a moat, the idea that there was a redoubt on Fyrbakken can be dismissed.

On the small excavation sites, the remains of three buildings were investigated (Fig. 6). A large building orientated east - west stood on field 1 on the northern part of the hill (building 1). The northern half of it lay within the boundary of the site. Fortunately the site of the building was in a good state of preservation and yielded valuable information that enabled us to observe details of its construction and alterations during the 16 years that it was part of the outlaws' stronghold. The building had several rooms of different construction. In one of them the floor was



Fig. 5. Fyrbakken with the lighthouse tower, the lighthouse keeper's house and excavation fields 1999-2000. Measured and presented by P. E. Skovgård-Jensen, H. C. Clemmesen and C. Dam

sunk. The building's north wall had rested on a large sill which, when it was dug out, gave a clear indication of the course of the wall. Connected to the building was a brick-built oven, the back of which was set into the wall. Another building (building 2) lay to the east of building 1 and at right angles to it. This proved to have a clay floor (Fig. 6) and a ditch running north-south which had apparently borne a timber wall. Other walls were constructed of sun-dried clay bricks and the recycled sides of boats.

The oven in building 1 set into the wall (Fig. 6j), was situated in the west of the building. The oven walls were regularly built of large mediaeval bricks in nine courses, 1.2 m wide and 0.90 m high. On the other hand, the sides were built of rocks in two or three courses, laid on top of the bricks. The oven walls had partly collapsed inwards. 1.6 m of the oven-space lay inside the site. The base of the oven was 60 cm wide and made up of flat, neatly laid beach stones. The oven was stoked from the north side, probably from a building situated a couple of metres further to the north. We can assume that it was a baking oven in a kitchen, but as it was too set in the wall of the southern house, where it served as a

source of heat. Indeed it is quite possible that the oven was in fact a hypocaust, that is to say an oven designed for heating purposes, the heat being channelled into the building through pipes on the same principle as a modern warm-air central-heating system. If this were the case, with our restricted site, we were not able to ascertain precisely how it was constructed. We were able to establish that part of the oven-space was situated outside the building and evidently was covered with stones and a thick layer of clay that extended along the building's north side like a 5 m long and 0.6 m high rampart.

In the ditch, field 4, north of field 1 we succeeded in finding the particularly well preserved part of a house, building 3 (Fig. 7). As on field 1, it appeared under a black layer of charcoal mixed with burnt clay and clay daub, clear sign that the castle had been destroyed by fire. The remains of the house first showed up as a flat area and large pieces of charred wood, the ends of which followed a 20 cm wide

border of reddish brown burnt clay and charcoal. This proved to be a channel about 10 cm wide and 30 cm deep which, taken together with the charred planks on the floor and the charcoal in the channel itself, could only mean that there had been a timber wall here. We succeeded in finding a similar wall at the most southern end of the field. So we had uncovered the south west corner of a building, or rather the south west corner of a room in a building. The rubble on the west of the timber wall can best be explained as belonging to the burned-down building and the wall running north-south should be seen as a partition wall. When the charred planks were removed, a surface of stones the size of walnuts appeared. This was the floor of the house. It was not possible to follow the floor to its full extent northwards, but when the field's sides and floor were cleaned up and measured, it was clear that there had been digging and the same sort of layers of activity as at the time of the castle's inception up to a point which gives building 3 a width of 6 m.

The castle was destroyed by fire. In the layer of burnt material there was a lot of daub and a large number of bricks made from clay mixed with straw. On the other hand, very few kiln-baked bricks were found. The overall impression we received from the excavations of those parts of the castle mound that we were able to investigate, was that the buildings were constructed of wood, timberframed with wattle-

and-doub infill and sun-dried bricks. When the lighthouse and the keeper's house were built in 1854 there were indications that a cellar had existed on the site. Where precisely it was, we had no idea. On the ground plan it measured roughly 4x3 m, was 2.5 m deep and set with rocks on the inside, daubed with clay mixed with straw. Not a very impressive cellar. All in all, from the buildings we now knew of on Fyrbakken and elsewhere, it was clearly the castles military aspect that was dominant. As far as we could judge no emphasis was laid on the social prestige of these and other buildings. The assertion that the archaeological evidence makes, is far removed from the fantasies in the folksongs and romantic and nationalist stories of the 18th century about Marsk Stig's castle with its walls and turrets.

Finds at Fyrbakken Castle

The buildings on Fyrbakken were not impressive, nor do the finds there suggest the presence of some of the most prominent men in the country, except for the many remains of meals in the form of bones from venison. (Enghoff 2002). Here one can see a trace of their upper class self-indulgence. Haunches and shoulders of venison were brought to the island. They raised pigs and poultry and veal and lamb formed a not inconsiderable part of their diet. A population of rabbits which, as we know, quickly reproduce themselves, was also a basis of sustenance. Fish have at all times played a substantial role in the diet of islanders. Cod was on the menu at Fyrbakken, cormorants and crows too. The inhabitants of the little island have always been heavily dependent on nature's larder.

Amongst the finds of copper, copper used for coin minting predominates, as is the case all over on the island. Thirtyseven coins and 8 blanks were found in the culture layers in and around buildings 1&2. In

addition, there were 15 pieces of scrap copper, apparently fragments of pots, and thin copper strips which can be interpreted as raw material for smelting. There were also 5 copper ingots, 2 of which were fully hammered out – fine examples, 13.5 cm long which lay side by side and very close to each other at the bottom of the north-south wall ditch in building 2. It looked almost as if they were house offerings. A few drops of melted copper confirm that copper working took place on Fyrbakken too. Pieces of copper, which can be linked to coin minting, were also found in the ditches on field 2-5.

Finds of iron were limited to a key, various small fittings and a chisel. Several pieces of iron slag confirm that iron working went on close to field 1. This might have taken place to the east of the mound on field 5, where a great deal of slag indicated that here we were close to the forge in a smithy. One crossbow bolt head was found on Fyrbakken. It lay in field 3 in the south of the mound, in the layer from the burning of the castle. It was the only object found on Fyrbakken, which gives rise to thoughts about the military aspect of the castle. Yet we are dealing with the central part of the castle here, which we may take as being the military headquarters. One cannot infer, from the evidence of a single crossbow bolt, that battles took place on Fyrbakken.

Sherds from bowls, pots and pitchers lay spread throughout the culture layer. Danish produced household utensils, especially greyware or lead-glazed pottery were in use on Fyrbakken, but they also had imported early stoneware from the Rhineland (Dr. Jette Linaa Larsen analysed the pottery). Two bronze sewing needles, a belt buckle along with several small decorative pieces, bear sparse witness to the fact that the inhabitants repaired their clothes and, in spite of the fact that this was a military camp, allowed themselves some decoration on their clothes.

The above-mentioned black layer of burnt wood appeared with or just above the remnants of the

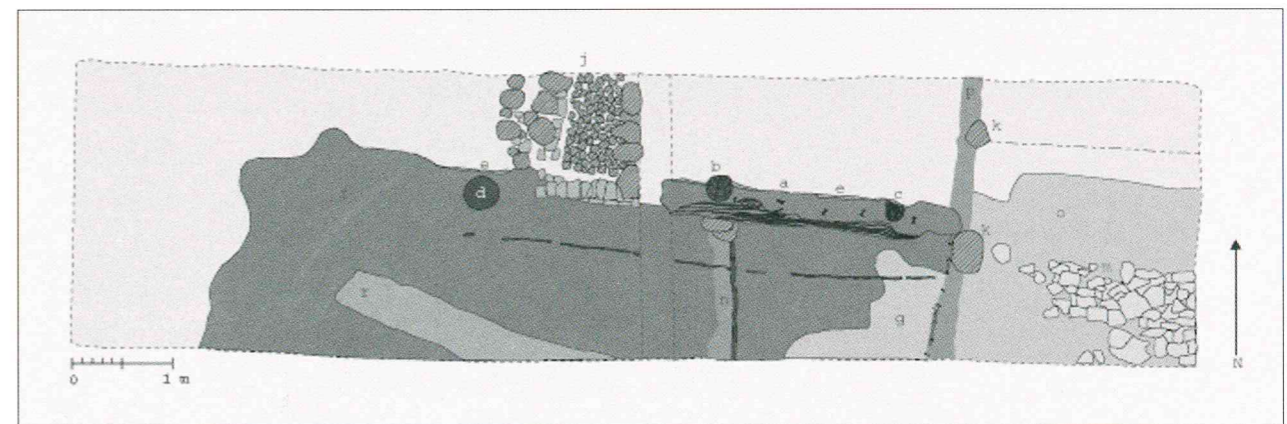


Fig. 6. Fyrbakken, field 1. Remains of parts of the structures, buildings 1 and 2: a: sill; b and c: wall posts; d: post-hole; e: blue clay; f: sunken floor; g: clay floor; h: partition; i: boards taken from the side of a ship; j: oven; k: stones in a stretch of wall; l: plank of a bench; m: collapsed wall built of sun-dried bricks; o: clay floor, building 2; p: wall-trench, building 2; r: ditch excavated 1894. Measured and presented by Pauline Asingh and Louise Hilmar



Fig. 7. Fyrbakken, field 4. Building 3 during excavation. Three phases can be seen in the narrow trial ditch: first the collapsed stave-built wall, then the stone-paved floor and lastly the wall-trench with the charred planks. Photo: Per Poulsen

buildings on field 1,3&4 and can only mean that the outlaws' dwellings were destroyed by fire (Fig. 8E). Taken with the written sources' description of how, in 1306, the Danish King Erik Menved took the castles and set fire to them, this can only mean one thing – the layer of burnt material is the result of that. The date is confirmed by the coins and the other finds. With this conquest, Hjelm disappears from the mediaeval written records. It was therefore surprising that a layer of clay about 1.3m thick could be seen on top of the burnt layer (Fig.8F). No finds were made which could date this layer of clay but it was obvious that it was thrown on immediately after the fire. Nothing indicated that anyone had walked on the burnt

layer, nor were there any signs that sand, soil or other material had blown across it. On the large field 1 particularly, it was found that the layer of clay was pressed down between pieces of the burnt out building. It was placed there soon after the burning down of the castle. It was either Erik Menved's men who thought they would use the castle themselves and had chosen to strengthen it, or, more likely, it was the Norwegian king and the outlaws who, shortly after the sacking of the castle, returned and began to build a stronger fortification. In the letter that the Norwegian king wrote on 25th November 1306, he rightly complains that Erik Menved broke the agreement of 1295, which stated that Hjelm was

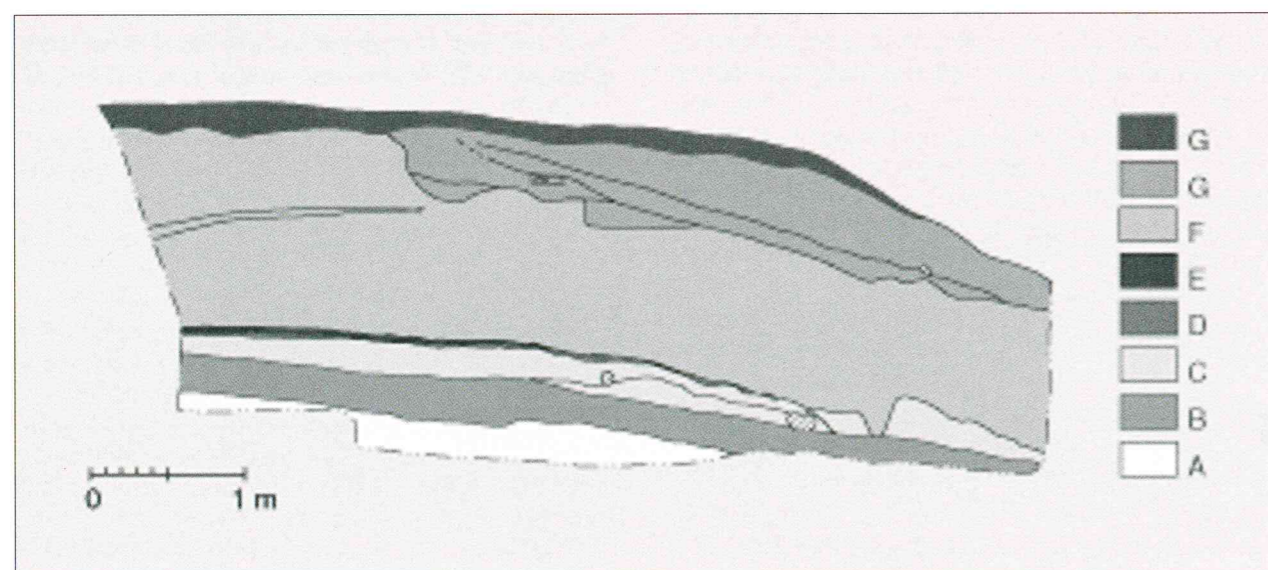


Fig. 8. Fyrbakken, field 3. East profile. A: natural moraine clay deposit; B: vegetation layer; C: construction of the castle-mound; D: from the castle's lifetime; E: formed when the castle burned down; F: the castle-mound raised again after the fire; G: from the time of the lighthouse. Measured and presented by Nils Engberg, Martin Pavon and Sven Kaae



Fig. 9. Reconstruction of the castle at Fyrbakken. Presented by Nils Engberg, Pauline Asingh and Jørgen Mühlmann-Lund

under the protection of the Norwegian king. We may imagine that he enforced that right by sending people back to the island to rebuild the castles. The balance of power between the Danish and Norwegian kings had altered markedly when the Norwegian king and the outlaws in 1289 and subsequent years raided the Danish coasts and apparently, without great resistance, ruled the Danish seas.

Hjelm no longer had any significant strategic importance for the Norwegian king, nor did the outlaws and their successors have the same meaning for the Norwegian king as they did earlier in the Nordic struggle for power. The new fortifications were never finished. There was no layers that indicated activity on top of the newly raised area of the castle mound in any of the sites we excavated on Fyrbakken. It is noteworthy that, apart from the above-mentioned crossbow bolt head, no weapons or parts of weapons were found on Fyrbakken, even though metal detectors were used extensively

The impression given is that the castle was built in great haste. Sides of boats and other materials at hand were used in the construction, but the fortification itself, the high and steep castle mound, crowned by a strong wooden palisade, was nevertheless equal to the strongest of castles of the period (Fig. 9). This may be the reason that Fyrbakken Castle, probably the only one of the castles, was not taken by force when Erik Menved and his men took the island in 1306. The lack of finds of weapons and parts of weapons more than suggests this. We can

assume that the defenders surrendered the castle after negotiations with the king. As was clear from the excavations, this did not spare it from the same fate as the other castles on the island. It too was burnt to the ground (Asingh & Engberg 2002A).

Kastelsbakken Castle

Kastelsbakken is a natural knoll, which rises up in the west about 6-8 m above the plateau and a good 35-39 m above sea level. The hill measures 65 m north-south and 35 m east-west. The castle mound is highest towards the south. The two castle sites, Kastelsbakken and Fyrbakken are separated by about 130 m.

A series of trial ditches and an excavation site were laid out (Fig. 10). Access to the castle was not proven by the somewhat limited excavations, but the gateway to Kastelsbakken must have been facing in the direction of Fyrbakken Castle. The moat was not at all impressive, with a maximum depth of 1.25 m and a width of no more than 7 m. The rampart nearest the excavation in the moat consisted of exactly the same layer of gravel which we found under the moat. This clearly indicates that the rampart was constructed from the material dug out from the moat. The moat, because of its shallow depth, was probably dug out primarily to provide material for the building of the rampart on the castle mound.

We found evidence of the rampart in three places on Kastelsbakken. Trial ditch 1, which ran approximately north-south, cut through a layer of added clay which is the remains of the rampart. The base of the rampart was 7 m wide at this point. It was about 3 m higher than the top of Kastelsbakken. On the outside, the rampart material was probably held in place by a palisade, which functioned as a breastwork on top of the rampart.

An area of a good 100 m² was opened around the western part of trial ditch 4 (Fig.11). 1m under the surface, roughly on a level with vegetation layer v, a row of large postholes appeared (Fig.14). The 12 postholes sketched the clear outline of a square building measuring 6.75 x 6.75 m. Each posthole consisted of the hole itself and traces of a post. This showed that the posts had had a diameter of 25–35 cm. Most of the traces of posts consisted of brownish sandy soil or yellowish clay, but in several cases, the postholes were empty of material, just as was the case on Skaadebakken when this stronghold was excavated in 1952. This is because the wood has rotted away and left an empty space in the compacted layer of clay. The postholes were dug down through the vegetation layer and could all be clearly seen, when this level was reached. The posts were sunk 1.5 m below the original layer of vegetation. Subsequently, when the encircling rampart was erected, clay was packed around the posts so that they were exceptionally deeply set (up to more than 3 m), which indicates, that the building erected had a substantial height of 3 or more storeys. Everything points to the fact that the building indicated was a defence tower built into the surrounding rampart. Large quantities of iron nails, soot and charcoal indicate that the wooden tower burnt down.

If Kastelsbakken were to provide an effective defence for its inhabitants, there must have been several towers. The postholes in the out of line section of trial ditch 4 are probably part of yet another tower. Logically there must have been at least a third tower on the southernmost part of Kastelsbakken to make it possible to cover the sides of the rampart from the towers. (Skov 2002, p. 147)

Finds from Kastelsbakken Castle

Most of the pottery is greyware or lead glazed and produced in Denmark. The shape of the vessels ranges from pitchers and bowls to pots. A smaller amount of the pottery from Kastelsbakken consists of two types of imported stoneware from the Rhineland in Germany and Rouen pottery from northern France. This type of pottery is no different from what one would expect to find in a Danish town of the time.

Amongst the finds of iron, nails and rivets of all kinds are predominant. There are small rivets and

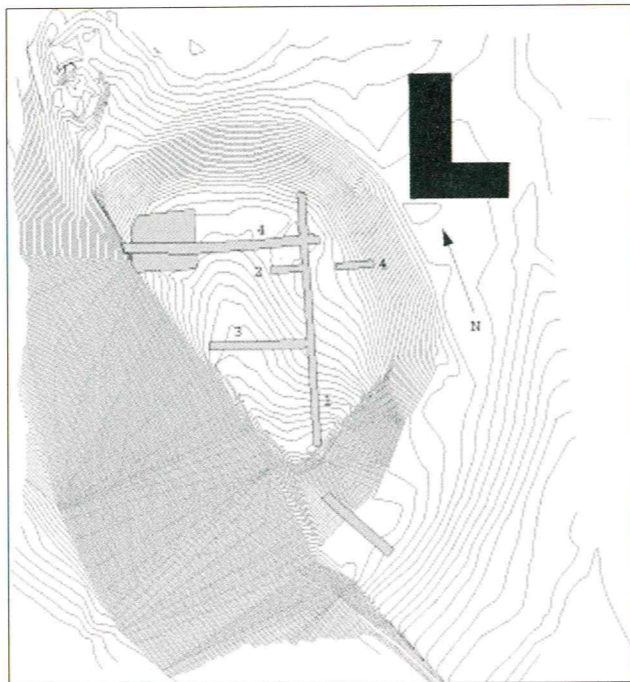


Fig. 10. Kastelsbakken with trial ditches and field of the investigations in 1999 and 2000. Measured and presented by P. E. Skovgård-Jensen, H. C. Clemmesen and C. Dam

very large rivets. Large quantities of these rivets were no doubt used in the wooden buildings, of which we managed to find only a few traces during the excavations. Of other finds can be mentioned door mounts, a hinge, a fishhook, a belt-buckle, an ordinary knife and a folding knife with a bone handle. Two picks were buried in the clay of the rampart and must have been buried by accident when the rampart was built. eighteen crossbow bolt heads and 3 spear points may have ended up there when the king captured Hjelm in 1306. Large finds of iron slag show that iron was manufactured in this location.

Finds of copper were especially numerous too. Pieces cut from sheet copper, cooking pots and other vessels are to be found everywhere on Kastelsbakken as they are on the other parts of the island where investigations took place. Meanwhile only 2 copper ingots and 3 coin blanks were found on Kastelsbakken, few drops of melted copper and little slag, so it is very unlikely that the castle area was included in the production of counterfeit coins. The 73 coins that were found at the castle were likely to have been dropped during day to day activities.

Amongst the other objects in copper and bronze can be mentioned a fine pendant in the shape of an eagle (Fig.12). Most striking was a strange little decorated cylinder that was soldered together at both ends so that one could keep something carefully secured. A reliquary perhaps or a sealed ampoule for a confidential message on parchment. Objects made of bone included a small number of dice, unfinished dice, gaming pieces, a decorated fitting and a fragment of a bone flute.

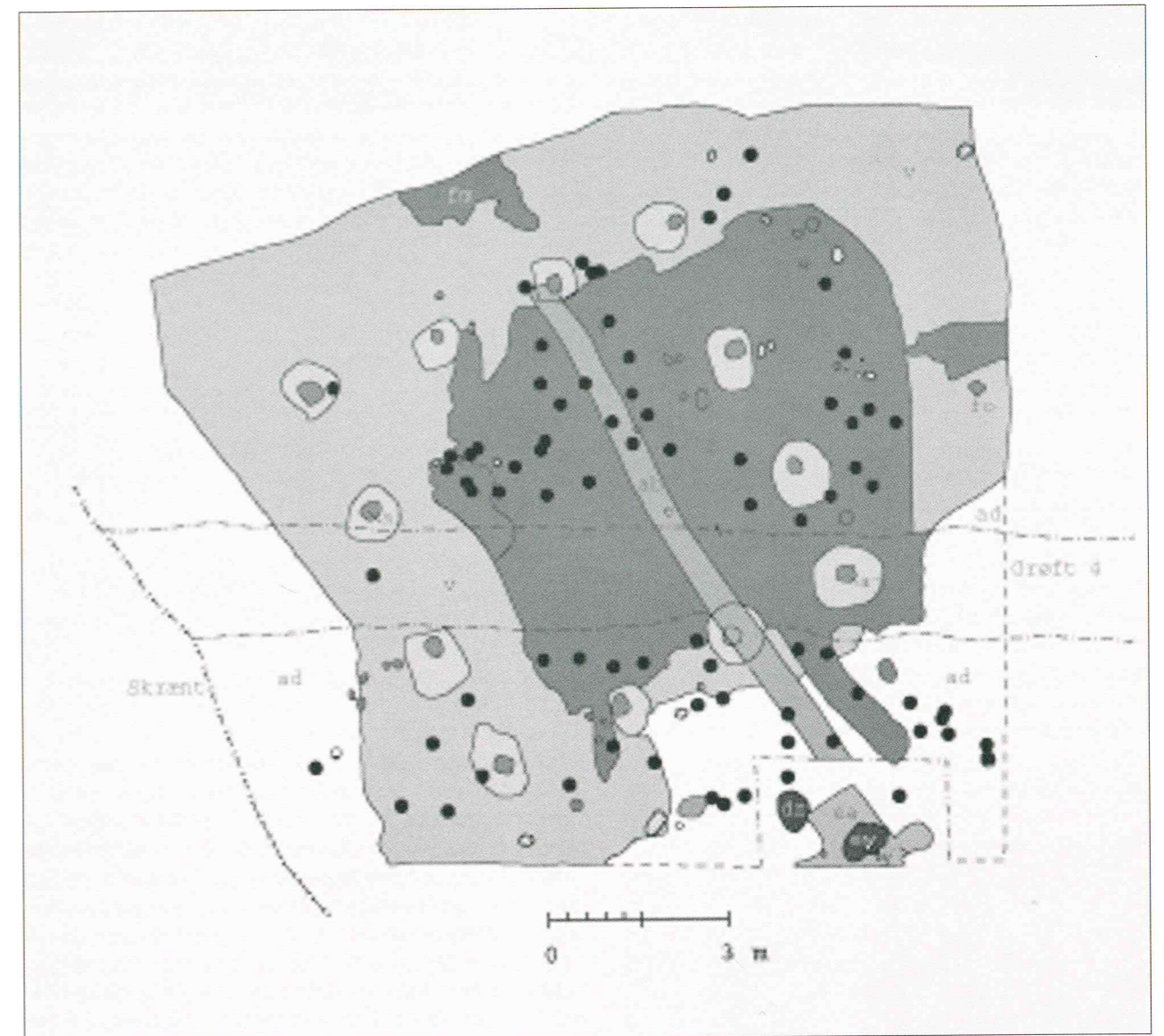


Fig 11. Kastelsbakken. The excavation fields from 2000 at a level corresponding to the original vegetation layer v. The vegetation layer has been ploughed away in the areas where the underlying bleached sand/subsoil **ad** is exposed; **fm**: bonfire layer with ash and charcoal from the short period between when the outlaws came to Hjelm and when the ring rampart was built. The 12 large post-holes of the wooden tower show clearly in vegetation layer v. There are some pits (**z**) and postholes (**dz**, **ew**, **fo**) that are from the time when the outlaws held Kastelsbakken. The post-hole **ew** is very deep and may have been part of one of the buildings for the garrison; **ab**: Trial-ditch from 1894; **ea**: probably part of the excavation field from 1952. Dotted line: trial ditch. Dot: find. Measured and presented by Hans Skov and Peter Bye Jensen

The aforementioned rampart, the encircling moat and the wooden tower bear witness to the strong fortification of Kastelsbakken (fig.13). The 18 crossbow bolts and 3 spear-points indicate that the castle was fought over at the time of its defeat in 1306. The wooden part of the castle was burnt to the ground, the rampart was levelled off and down the sides of the mound. The destruction was almost total and Kastelsbakken never again functioned as a stronghold (Skov 2002).

Skaadebakken

The south easterly corner of Hjelm's great central morainial hill is a castle mound in the shape of a truncated cone, the surface of which rise 15.5 metres above sea level and about 14 m over the low-lying foreshore (Fig.14). The castle mound is made up of the end section of a natural ridge, which has been isolated by the construction of a moat, 12 m wide and 2.5 m deep. Today a foreshore about 50 m wide shields the morainial hill from the sea, but this was not the case around 1300. A carbon-14 dating taken from one of the dykes on the beach near the castle mound, shows that the foreshore developed after

1300 and we must suppose that before that date the sea lapped against the eastern slope of the hill.

The slope on the north of the mound consists of gully that cuts its way into the hill and is one of the few natural approaches to the top of the island. The gully, which gets wider as it goes higher up, is known on the island as "Marsk Stig's Stable", but there is nothing to prove that this is fact. This is a name which sprang from a later period's fascination with the island and its legendary history. But it is likely – although no archaeological evidence could be found – that we have here the only approach to the high-lying morainal plateau in the time of the outlaws.

Skaadebakken is the name of the castle mound. "Skaade" comes from "at skue" to observe or keep a look-out (in Old Danish: skote; Swedish: skaade; Old Norse: skoda) Combined with the word "hill" or mound it means "a place to keep a lookout" and it has long been accepted that the place was part of the outlaws' defences; or rather there is an assumption that the outlaws built up on the early mediaeval stronghold. Abroad Skaadebakken is seen as the best-known example of a Danish motte. This is because Sophus Mueller in his book "Vor Oltid" (Our Ancient Past) characterised it as such and through the German edition it became known in the wider world. (Mueller 1897).

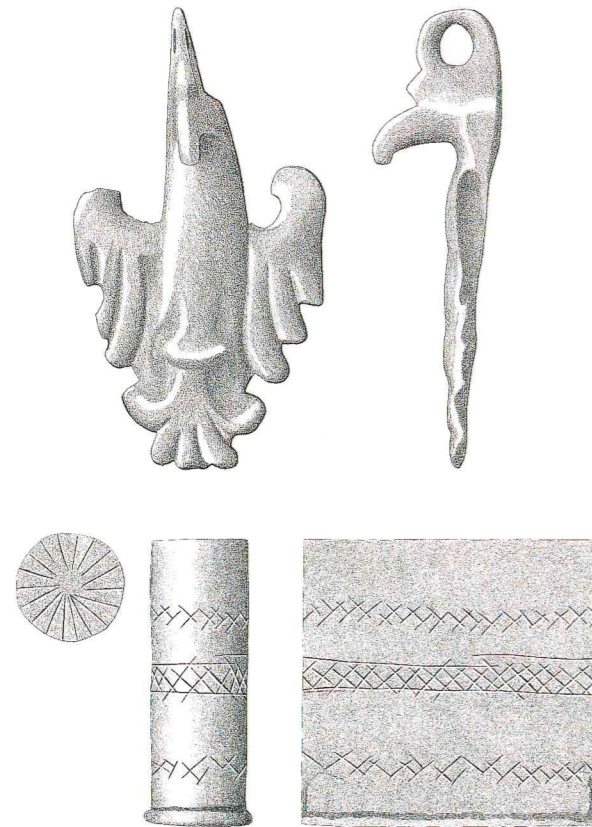


Fig. 12. Finds from Kastelsbakken. a: bronze cylinder for keeping a relic or a confidential message. The round disc is soldered onto the cylinder with tin; b: bronze pendant shaped like an eagle. Drawing: Louise Hilmar

Skaadebakken was not investigated archaeologically in the excavations of 1999–2000. It must be supposed that the modest-sized castle mound was more or less fully excavated during the archaeological investigations in 1894 and 1952 respectively. From the 1892 excavation we know only that they found alternating layers of clay and sand to a depth of 1.5 m and a single posthole around the middle of the mound's top surface. It is my colleague Hans Stiesdal's detailed account of his excavation in 1952, that is the basis for the description of the stronghold. Report by Stiesdal 1952 in the National Museum of Denmark). He was aware that, since the outlaws' time, there may have been one or several landslips on the stronghold's eastern side towards the sea. This was evident in the south-east corner itself when he excavated in 1952 but he did not think that this had removed substantial parts of the original castle mound. The excavation was laid out so that it covered the southern part of the hill (Fig. 15). The new excavation site was a slightly irregular 4-sided shape, 8.4 m long east-west and about 3 m wide. It was dug out in layers to a depth of 1 m below the surface. He then continued to dig in the south-west corner of the site to a depth of 2.4 m, where he had to concede that down to this depth the bank consisted of the same type of material as in the first metre he dug: alternating layers of gravel, sand and clay with large lumps of clay in the sand layers and a few stones. He was able to conjecture the combined thickness of the layers from the postholes of about 3 m deep – which we shall discuss later. These were seen as having been added when the castle mound was being built up. From our experiences in the new excavations, on Kastelsbakken in particular, where exactly similar postholes were found, it is probable that only the top 1.5–2 m were added, whilst the lower 1–1.5 m of the posthole here too was dug into the natural morainal hill. The moat was not examined but it was clearly visible then before vegetation on the island took over. The 12 m wide moat was 1 m deep – 2.5 m in fact where it met the castle mound – and stood dry. As far as defence purposes were concerned it was enough to secure the approach to the castle mound, for there can be no doubt that there was a bridge over to the mound from the highest part of the ridge, west of the moat.

On excavation the first indication appeared, 25–35 cm below the surface. This was a well-preserved layer of hard-baked clay, almost square (1.4 x 1.4 m) with rounded corners, which had a narrow black border (Fig. 16). This layer of burnt clay was 1–2 cm thick and formed the top of a 10–15 cm thick layer of hand-sized stones packed in clay. A typical oven base – and it was noticed that on top and at the sides of this place lay some clay, which could be the oven covering. The earlier observation of "walling" of burnt clay mixed with straw can very easily have been part of the oven covering to which a concentration of stones also belonged.

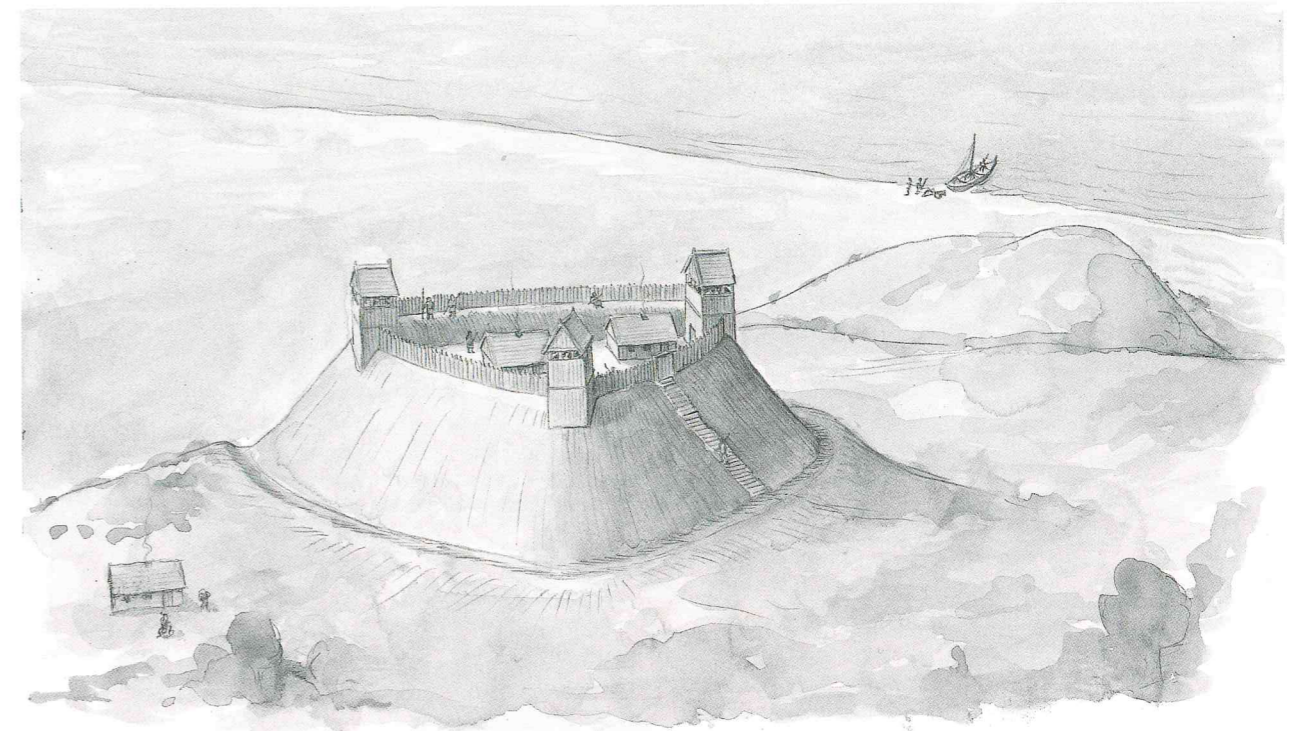


Fig. 13. Reconstruction of the castle at Kastelsbakken, seen from the east. Presented by Hans Skov and Jørgen Mührmann-Lund

The oven was stoked from the western side where there was a 1.5 m long and 75 cm wide clay floor, on a level with the base of the oven, and ringed by a single row of hand-size stones. Three fragments of badly damaged and misshapen bricks were found associated with this feature. There is little doubt, from our experiences in more recent excavations of a similar feature that the few remains we have here indeed belong to the very hearth itself. This whole feature therefore is a fully equipped kitchen with both oven and hearth such as are known from farms in the middle and late mediaeval period. (Engberg 1986). With our excavation it was not possible to date the site of the oven on Skaadebakken more closely – a matter that Stiesdal underlines in his report, in which he also emphasises that the connection to other traces found on the site must remain an open question.

At the dig in 1952, apart from the kitchen area, 5 postholes in all were discovered. They were proven at different depths, just as they were in the new excavations on Kastelsbakken. It was harder or impossible to see in the very mixed up layer of added filling. In 1952 the postholes were categorised in two different groups. Three of them were proven to a depth of 1.5 m. They were square in shape with a diameter of between 15 and 17 cm. In Fig. 15 they are indicated by the Fig. 3. Between two of them lay a strip of clay 10 cm wide and about 2 m long together with a rotted piece of wood with 10 evenly spaced iron rivets in it. A similar construction was dug up on Fyrbakken in 1999 and it was clear that the wood and the rivets had belonged to the side of a boat re-used as part of



Fig. 14. The fortified site of Skaadebakken can be seen here at the south-east corner of the moraine hill in 1969. The slopes are overgrown with thorns and elder, and this is also true of "Marsk Stig's Stable", the gully that lies north-east of the castle-mound and that has assumed to be the natural access route to the highest part of the island ever since the time of the outlaws. Down on the beach ridges to the south of the castle-mound (upper left in the picture) there is a low rampart, which was part of the castle defences

a wall in a building. We can attribute the same function to the piece of wood with rivets in it on Skaadebakken. Apart from two other postholes, Stiesdal was not able to uncover any further details of buildings during the excavation.

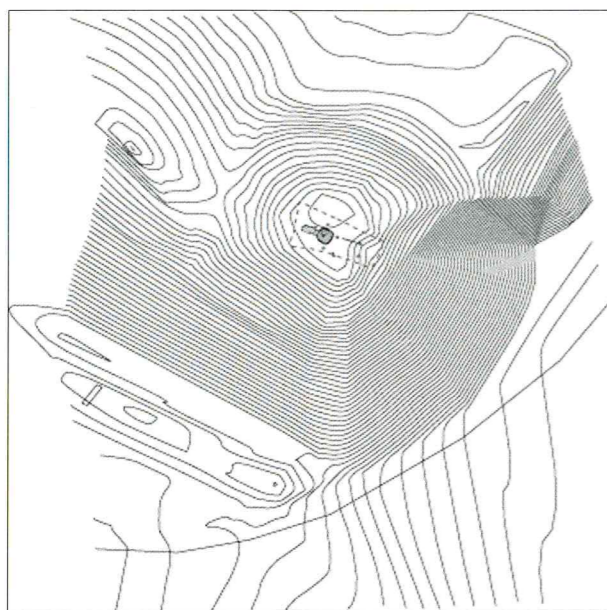


Fig. 15. Skaadebakken. Contour map with the excavation area marked. Measured and presented by N. C. Clemmesen and Louise Hilmar

Two of the postholes aroused his justified excitement. They appeared suddenly like “an empty hole caused by the earth collapsing”. They were measured with an iron pipe to a depth of almost 3 m. At this point the pipe reached a solid base without it first having to be pushed through loose filling. It was from this observation that at that time it was judged that the filling on the castle mound was about 3 m deep, whereas we can say today, as already mentioned, it must be more modest, just 1.5–2 m, because the posts were sunk 1–1.5 m into the morainal hill. There was not the slightest indication that the posts had been burnt, on the contrary it is quite certain that they rotted away in the holes because the imprint of bark was found in the corners. The observations do not of course exclude the possibility that that part of the posts that stood above ground may have been burnt. The posts were hewn on four sides but as they were not cut very exactly it must have been whole, probably young trees that were used. No wood was left in any of the postholes examined so far, so the types of tree that were used cannot unfortunately be determined. The traces of post show that the dimensions of one post were 21x23 cm and the other 22x22 cm. There is no doubt that these two posts buried so deeply were part of a tower-like construction. There is no longer any doubt either that the building constructions that were found on Skaadebakken have so many similarities to those we dug up on the other two mounds, that they were part of the defences that were built when the Norwegian king and the outlaws fortified the island in 1290.

The archaeological investigations which took place on Hjelms in 1999 and 2000 were much more extensive than the earlier ones and during the intervening years archaeology has developed both

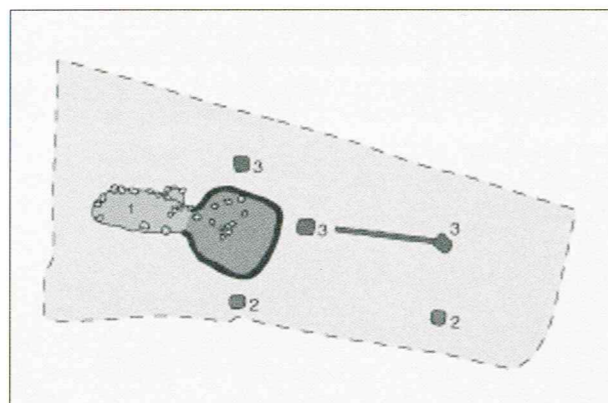


Fig. 16. Skaadebakken. Plan of excavation area, 1952. 1: the “kitchen” with the oven and fireplace; 2: the deep post-holes and 3: the shallower holes. Measured by Hans Stiesdal. Presented by Louise Hilmar

in terms of methods and documentation, so more and more observations were made during excavations on the two other castle mounds, Fyrbakken and Kastelsbakken. Today, for example, we can make use of machines, which enable us to dig deeper into the castle mounds and remove the piles of earth so they do not impede our overview of the excavation sites. The sides of the tower on Kastelsbakken were 6.5 m long and the posts, four on each side, stood about 2.1 m apart. Bearing in mind both the depth to which they were sunk into the mound and their dimensions, they are more or less identical with the large posts on Skaadebakken. There is however a difference. The distance between the big posts on Skaadebakken is 3.2 m. Obviously too few details are known about the buildings and their construction for us to be able to determine their shape and precise location but with the knowledge we now have about the construction of the buildings on Fyrbakken and Kastelsbakken, it is possible to make a few suggestions. There might be large posts that were overlooked during the excavations. On Kastelsbakken it was only when the added layer was removed from the castle mound with machines that all the postholes were revealed. If this is the case, one might suppose that the buildings on Skaadebakken had only 1.6 m between them rather than 3.2 m. If we think of there being four posts on each side, as on Kastelsbakken, that gives a side 4.8 m long. With the two known posts as starting point, the building must have been located in the middle of the mound (see Fig. 17 a). This solution is not entirely convincing. If this were the case, there should have been four further postholes, which was not seen in the excavation and that does not seem likely; but first and foremost what argues against this is that the west wall would then be placed in the middle of the kitchen area.

On this modest castle mound there is in fact room for a slightly larger ground plan than that described above. Five posts on each side would give a side

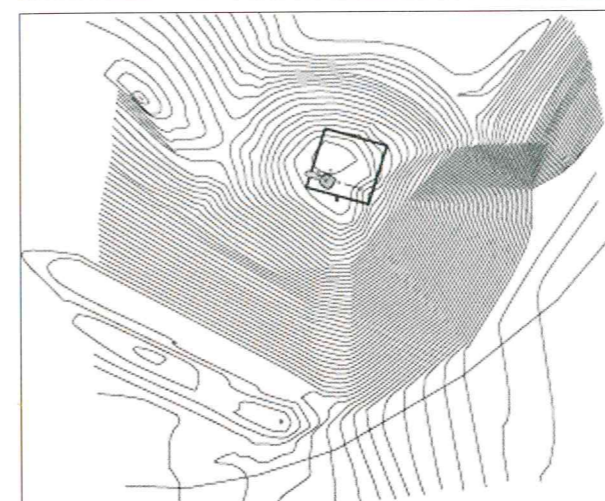
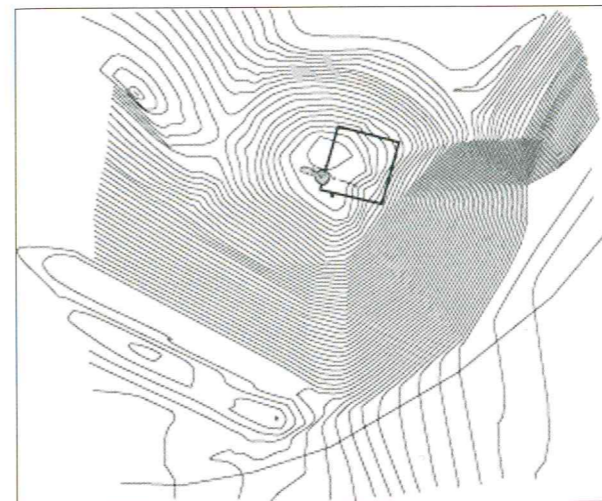
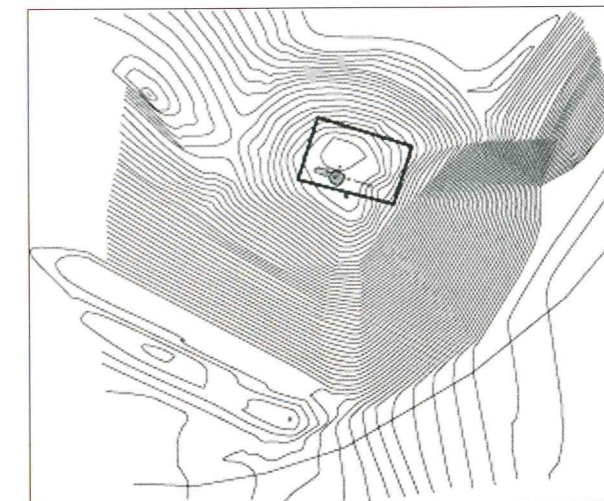
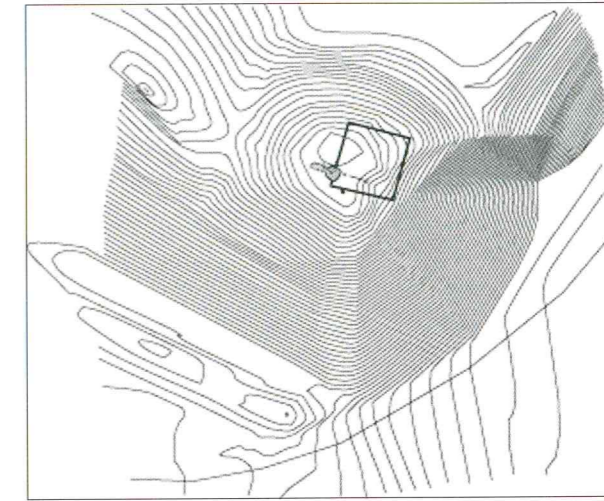


Fig. 17. Skaadebakken. Contour map with indications of possible ground-plans of the tower/tower house. Presented by Nils Engberg and Louise Hilmar

length of 6.4 m. This gives two further possible locations, again using the two known postholes as starting point. Either one location out on the eastern side or one more central. The eastern location would have a wall out over what is today the mound's eastern slope, but that is reasonable, because it is here that the sea has eroded part of the castle mound and caused it to collapse. As can be seen in Figs. 17b-c, both these locations would give buildings with a west wall standing diagonally across the kitchen, so this suggestion is not likely either. There remains one last possibility: this posits a building that covers the whole of the mound (Fig. 17 d). With this solution we estimate that there was room inside the building for a kitchen and this does not mean that there were postholes, which were difficult or impossible to find in 1952. In the building there were therefore 3.2 m between the wall-posts. But two more on each of the long sides, give the building a total length of 9.6 m and its width could scarcely have been more than 6.4 m (Fig. 18). This is a size that is well-known from the stone houses in mediaeval castles, which, with the addition of three or more storeys are called “tower-houses” in English.



For those leaving the castle, we may imagine that there was narrow drawbridge over the moat. It was not necessary to take horses or carts to the castle, so the bridge was exclusively for pedestrians who were led over to the building's west gable where we assume steps led up to the second storey entrance. There is not much to be said about the interior of the tower. The kitchen, as we have seen, was on the lowest floor and had a small floor space with an oven and a hearth. Part of the assumed run of a wall is not enough for us to guess the layout of the rooms. But the fact that the side of a boat was found to be part of a wall shows that the fortifications on Skaadebakken too were erected in great haste, using all the materials to hand.

The castle was sited as far out towards the island's east coast as possible. Here there was a clear view of the sea to the east and this was a deciding factor in the siting of the castle because, from Fyrbakken, the island's main castle, it was not possible to control who or what was out at sea. That they chose to make their lookout post apparently so strongly fortified, is probably due to military considerations: that the three castles acting in conjunction with each other were

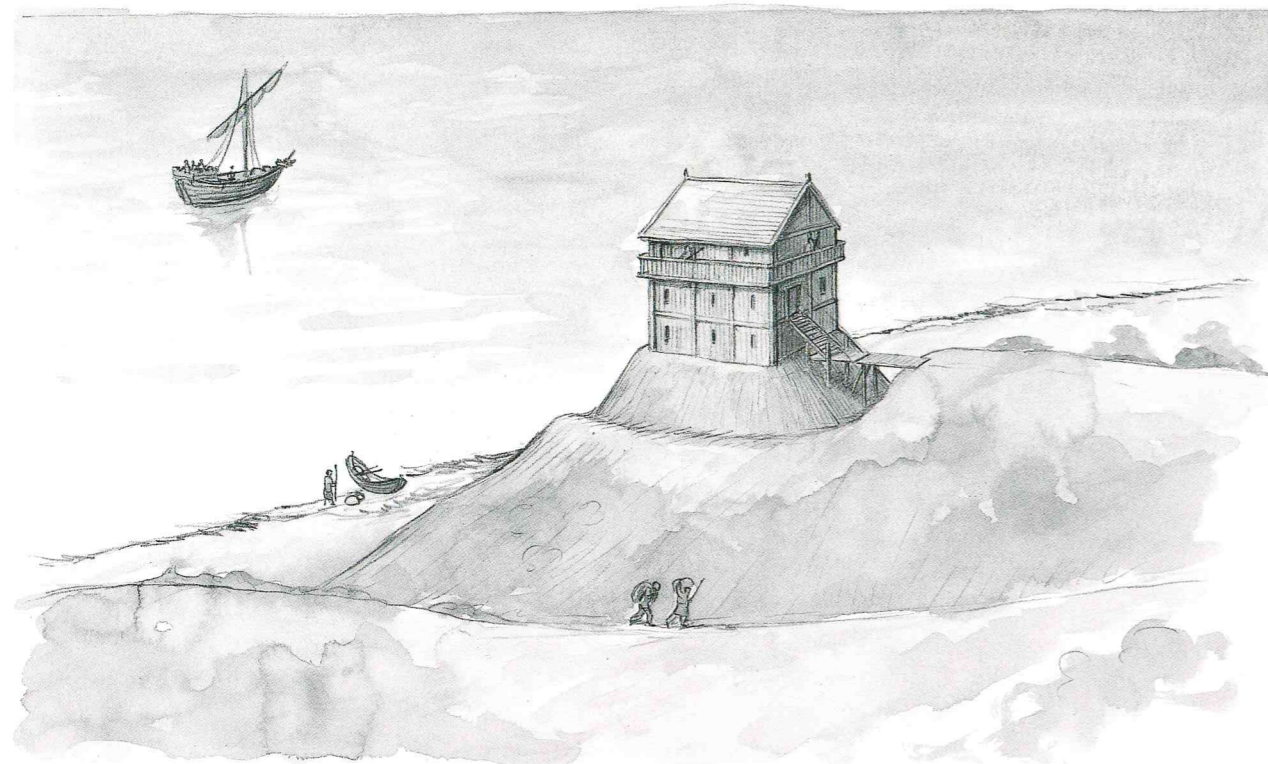


Fig. 18. Reconstruction of the castle Skaadebakken. This is based on the assumption that on the small castle-mound there was a tower house with three storeys, with access across the moat in the form of a small drawbridge and a staircase that led to the entrance on the 2nd floor. Presented by Nils Engberg and Jørgen Mührmann-Lund

seen as providing the strongest way of securing the island's defence. From Skaadebakken furthermore, they could control and protect the only apparent approach – "Marsk Stig's Stable" - that led up to the island's ridge (Engberg 2002).

Between the strongholds

The 35 hectares of Hjelms great moraine hill are a more or less impenetrable wilderness of thorns, brambles and thistles with patches where wild chervil holds sway. Vegetation has grown on the rest of the surrounding area since agriculture ceased in 1964. Today it is quite difficult to orient oneself up on the high ground, but in winter it is still possible to make out the old agricultural landscape with marked rises in the terrain and dikes which in some places have the character of a rampart. Naturally the mediaeval landscape changed with agricultural developments from the 19th century onwards. Even if cultivation stopped before the big deep-ploughing implements became part of modern agriculture, it nevertheless levelled off the terrain and blurred the mediaeval conditions, which included disturbing or removing the remains of buildings, paths or other features that lay in the path of the plough. This is a well-known phenomenon on open agricultural land in general which, naturally, occurred on Hjelm also.

One of the aims of the many trial ditches we dug between the castle mounds was, as far as possible to locate possible stables, storehouses, dwellings or other buildings which must have been necessary if one was to be able to stay on the island throughout the whole year. For example, examination of bones from Fyrbakken and Kastelsbakken show that, all the year round they kept cattle, sheep and pigs and that required cowsheds and cattle-pens. To this can be added chicken coops, facilities for geese to survive in winter and, somewhat surprisingly, rabbit hutches. Meanwhile there were only a few traces of buildings, in the form of scattered postholes and narrow wall channels. As became common practice at the time, the remainder of house sites were built on a stone foundation with the stones laid more or less directly on the earth. These were what the plough removed first when the island was again cultivated in the 19th century (Asingh, Klemensen and Engberg 2002).

Counterfeit coins

According to the written sources, when the outlaws took Hjelm over, they took some of the king's mint-masters with them. They may have been taken prisoner in recent raids from which the outlaws also brought home a great number of copper artefacts from the plundered towns.



Fig. 19. Copper-waste, bars and blanks in various stages of presentation, together with complete coins. Photo: Tove Pedersen

War was waged on several fronts including the economic one. Issuing coins was a royal privilege, the king's sole right. It was a powerful assault on the king's authority if coins were counterfeited and distributed and came into circulation along with the royal coins. The king would not only lose the income from issuing currency, but – and this is what the outlaws were hoping – those who supported the boy king would be humiliated and toppled and they themselves would be back in power. We know that the outlaws succeeded in establishing a mint for the production of counterfeit coins. This is mentioned in the Hindsgavl agreement between the Danish and Norwegian kings in 1295. According to that document the Norwegian king could legally keep Hjelm, provided that he made sure the production of counterfeit coins was stopped.

The captured mint-masters were forced to take part in the counterfeiting on Hjelm. Before the investigations began, we anticipated that a central coin workshop lay east of Kastelsbakken. Several times during ploughing, coins, ingots and other objects had been found which pointed to the production of coins in that area. So it was surprising – and in the beginning incomprehensible – that, in all the ditches we dug in the area between the castles, we found coins and great quantities of pieces of copper for coin production. Metal detectors were used

and layers of 5–10 cm at a time were excavated. In all, more than 2000 coins, blanks, ingots and pieces of scrap copper were found as well as melted copper and slag (Fig.19). There were particularly large concentrations in three places. These were in the place known locally as the Mint (77 coins 467 blanks, and 80 ingots), a dip in the ground north of Kastelsbakken (106 coins, 253 blanks and 48 ingots) and close to the moat north-west of Fyrbakken (7 coins, 23 blanks and 6 ingots). We think that we have uncovered the western part of an actual coin workshop, with wall ditches, postholes for posts where the lower die was situated, three partly buried barrels and a forge (Fig. 20). The ground plan is very similar to that excavated in the archbishop's mint in Trondheim. North of Kastelsbakken, the remains of a building that must have housed another coin workshop was found. Meanwhile, at "the Mint", no remains of buildings were found, having been ploughed under. There is no doubt that coin production had gone on in these places. The large quantities of copper found, represent all stages of manufacture – copper-waste, waste from castings, newly cast and hammered-out bars, cut-out blanks which were cold-hammered further to make round blanks, as well as finished coins. Bars had also been cut directly from copper pots and blanks made from

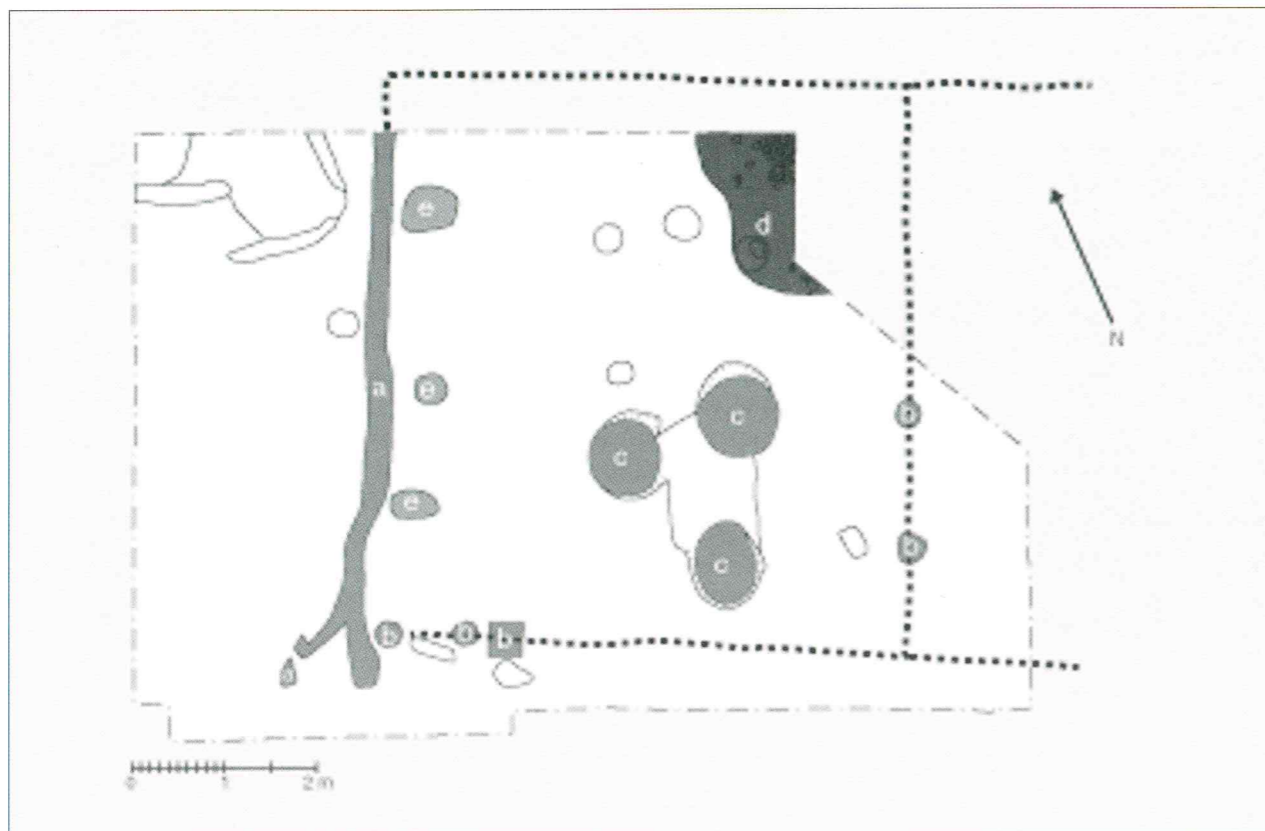


Fig. 20. The coin workshop north of Fyrbakken. The excavation-field after the lifting off of the last level of soil. a: wall-trench; b: post-holes; c: pits for barrels; d: oven/forge; e: post-holes from coin-striking benches. Dotted line: probable extent of house. Measured and presented by Nils Engberg and Louise Hilmar

these. Small drops of melted copper which had spurted out from the glowing copper-alloying process when the crucible was carried from the furnace to the casting mould, show that we are very close to the casting process. Meanwhile the coinsmith's hands shook so that a splash of flying copper alloy fell to the ground and left behind a lump of melted metal. Flakes of hammered iron also show that we are close to the forge. In copper production the flakes jump from the iron tongs when the crucible is held in the fire. And we found the ultimate proof of coin production – a coin stamp whose impress was identical to that on one of the types of coins of which we found many (Fig. 21). More than 350 coins are now recorded which bear the impresses, used in the period 1290–95 (Asingh, Klemensen and Engberg 2002).

The royal coinage at this time contained a small amount of silver. Since the 1230s, because of the country's poor economy, it had become customary to use more and more copper in coins and correspondingly less silver. By about 1290 coins contained just 10% silver. If there were to be any point in the outlaws manufacturing coins, they would have to contain a lower proportion of silver or no genuine silver at all. New metallurgical tests have strengthened the theory that the numerous coins found with the imprint from the period 1290–95 are in fact coins of pure copper. There is no longer any doubt - the outlaws' counterfeit

coins were made only of copper. Moreover, the impress on the coins means that coin production stopped in fact in 1295, after the Hindsgavl agreement. Meanwhile, a question that has still not been answered is how did they make their coins look like the royal ones, which, in spite of their low silver content, managed to look like silver? If the copper coins had a reddish shine like copper, the whole process of giving them the royal stamp was in vain. Most likely the reddish copper coins were dipped in a liquid containing some silver (Arne Jouttijaervi, Heimda. I Archaeometry has suggested this method which was used on Roman coins from the 2nd to the 3rd century. Cope 1972. La Niece 1993). When silver ore is placed in a solution containing ammonia, urine for example, silver chloride is precipitated, or rather, the silver dissolves. If copper coins are placed in such a solution a thin shiny silvery surface is deposited on them, which cannot be distinguished from the surface on a coin containing 10% silver. The silver layer is so thin that it has dissolved during its stay in the ground. We can therefore no longer see this silverying and metallurgical test cannot detect it either. However, one of the coins that was analysed contained traces of silver chloride, which may have come from such a silverying process.

A slightly different picture of the reality of the outlaws counterfeiting now emerges. There must have been several workshops on the island, of which

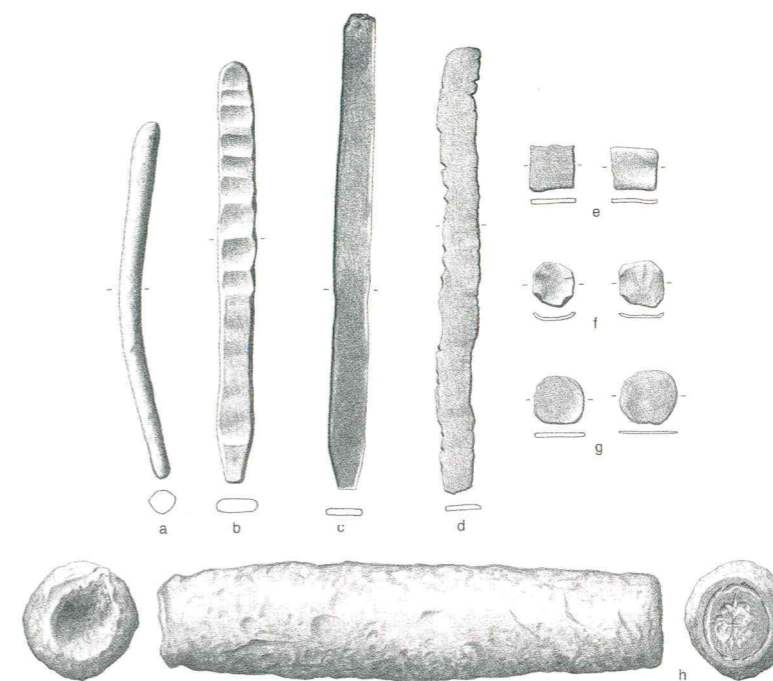


Fig. 21. The outlaws' coin production. a: cast bar; b-d: hammered-out bars; e: square blanks; f: blanks with corners hammered at the edges; g: round blanks; h: die from the coin workshop north of Kastelsbakken. Drawing: Louise Hilmar

we have found three. Striking coins was low technology that did not demand solid buildings, but nevertheless it looks as if houses or huts were built where the whole process of manufacture took place, from smelting to striking the coins. Finds of Danish coins are very common in the excavation of cultural layers from this mediaeval period. Their small value meant that the masters of the royal mint were very busy producing numerous large quantities of coins. If the counterfeiting on Hjelm has had the damaging effect on the kingdom's economy that the written sources indicate, then many coins were produced on Hjelm. How many is not known of course, but hundreds of thousands, or more likely up to a million cannot be far off the mark. We can suppose that the captured mint-masters must have organised the coin manufacture and instructed a considerable number of people who took part in the process. Perhaps the soldiers earned an extra shilling in this way, or rather an extra penny (penning), which was the currency at that time (Asingh and Engberg 2002B).

Conclusion

In 1290 the outlaws, supported by the Norwegian king, landed on the unoccupied island of Hjelm. They fortified the centre of the island and in addition - as

the excavations have shown - they built castles on the island's east and west sides. The three castles were part of a joint fortification of the island. But why fortify an island in the middle of enemy territory and moreover set up the production of counterfeit coins?

The two minor castles of Kastelsbakke and Skaadebakke near the coast were necessary for several reasons. First of all, the need to observe hostile ships and to control the passage of trading ships following one of the important trade routes was vital and it was impossible to see ships from Fyrbakken castle in the middle of the island.

Then there were military considerations. Dividing your forces is a well-known tactic that makes it possible to confuse the enemy and to attack from several places. And this fits in well with the way war was practised at that time. The war between Denmark and Norway, of which the outlaws

were part, was not a war in which the nations' full armies were engaged. It was more a feud than a war; the noblemen and their private armies fighting each other, taking prisoners, demanding ransom or simply confiscating property or dispatching the owners.



Fig. 22. Crossbow arrowheads found at Kastelsbakken. Drawing: Louise Hilmar

The castles all showed signs of having been built in a hurry, using the trees on the forested island or recycling objects (the side of a boat) as building material. There are no signs in the building of the castles, their houses and towers that point towards social ambition. They were not built as private castles, as is indicated in the folksong tradition, but purely as military strongholds.

In 1295 a treaty was signed between the Danish and Norwegian kings. A very important part of the treaty dealt with the counterfeiting carried out on Hjelm island. To the Danish king this was such a vital matter, that he agreed to let the outlaws and the Norwegian king keep the island as long as they stopped coin production. No doubt the counterfeit coin production, to the amount we have been able to show took place on Hjelm Island, must have been an essential part of an economic struggle, as was the control of trading ships and the plundering of the Danish coasts in the first part of the 1290s. This makes sense, but cannot be the full story. Hjelm was not the only place for example where counterfeit coins were made. The outlaws produced them too at Hunehals in Halland, a much more secure place. Why did they not make all the counterfeit coins there instead of choosing the vulnerable Hjelm Island, so close to the Danish mainland? One explanation for this is that making counterfeit money and using an island situated in the middle of the Danish kingdom as a military base was an attempt on the part of the outlaws to humiliate and provoke the Danish king, topple his followers and get themselves back into power.

The overthrow of the castles.

In 1306 Erik Menved captured Hjelm and burnt the castles to the ground. He wanted to get rid of the enemy threat in the middle of the kingdom, now that the war with the Norwegian king had moved to Halland. To this end he had assembled a large army of professional mercenaries. He can use these to capture the island. We get some indication of how this happened from the archaeological finds. It was not difficult for his war-experienced army to force their way up the cully to the island's high ground north of Skaadebakken. We do not know whether this castle was seized straightaway, was besieged or surrendered. No weapons or parts of weapons were found in the excavations on Skaadebakken so we cannot get close to an answer this way. When the army came up onto the high ground they avoided direct confrontation at first with the central castle at Fyrbakken and instead attacked

Kastelsbakken. The finds of 18 crossbow bolts and three spear-points show that they had to fight to take the castle (Fig. 22).

We can suppose that all the inhabitants of the island fled up to the castles when the attack came. Arrow- and spearheads found on the open ground could be from the crossbow bolts and spears that the defenders used against the attackers. Only one crossbow bolt head was found on Fyrbakken. It is conceivable that they entered into negotiations to avoid unnecessary losses. The castle on Fyrbakken was a strong one for that time and there is no doubt that most of the defenders would have fled there. A hard fight would be necessary if this castle was to be taken. This gave the defenders a favourable negotiating position, which could assure them safe conduct to leave the island with both life and honour intact. Probably Erik Menved had no outstanding claims against the defenders and was interested only in razing the castles to the ground. So we can see the white flag hoisted over Fyrbakken, after which the commanding officer and his soldiers, the manual workers, cooks and those who looked after animals, kitchen gardens and the like and their wives and children all left the castle and made for the ships which then sailed with them to Norway. A few Norwegian merchants were held back. Next, the king's men set fire to the castles. This occurrence can clearly be seen in the archaeological excavations as a black layer - filled with ash, charcoal and the burnt remains of buildings - which lay everywhere and sealed off the relics left behind after 16 years of life on the island.

We had expected that the story of Marsk Stig and the outlaws on Hjelm would come to an end at this point, but here too our investigations brought surprises. Soon after the castle on Fyrbakken was burnt down, it was being rebuilt. Was it Erik Menved who decided to build a castle here? Hardly, otherwise he would not have burnt the castle to the ground. Moreover he had other strong castles, which lay in a much better strategic position for a Danish king. The most probable explanation is that the Norwegian king wanted to assert his right to the island, as is discussed in the Hindsgavl agreement of 1295. He did this by sending men back to the island to start rebuilding the island's main castle. However, Hjelm did not have the same significance for him as it did earlier. The outlaws and their successors were no longer so important in the Nordic power-game, and after confirming his right to the island, he gave it up again. The castle was never finished and Hjelm disappears from Denmark's mediaeval history except in the songs in which Marsk Stig and the island that got horns are still remembered.

Giedrė Filipavičienė

RETROSPECTION OF TRAKAI FORTIFICATION SYSTEM IN THE 14TH - 15TH CENTURIES

Die Retrospektive des Verteidigungssystems Trakai vom XIV.–XV. Jahrhundert

Die Stadt Trakai ist eine kleine Stadt auf einer schmalen Halbinsel, die von vier Seen umschlossen wird; sie ist vielleicht der am häufigsten von Touristen besuchte Ort in Litauen.

Die Nennung der Stadt Trakai findet man schon seit dem XIV. Jahrhundert in den schriftlichen Quellen. Als Hauptstadt des Staates Litauen galt Trakai von 1316 bis 1323. Während der Herrschaft des litauischen Großfürsten Vytautas in den Jahren 1395–1430 hat die Stadt eine besondere politische Bedeutung bekommen.

Den Außenteil bildeten die Erdhügel und die Siedlungen der Tartaren.

In der zweiten Hälfte des XIV. Jahrhunderts gab es in Trakai zwei gemauerte Burgen – auf der Halbinsel und auf der Insel. Die Burg auf der Halbinsel wurde auf einem Vorsprung gebaut, der durch einen tiefen Graben – Fossa, der mit dem Wasser gefüllt war – von der Stadt getrennt. Diese eine Burg hatte zwei Höfe. Aus dem Vorderteil ragten sieben Türme heraus. Alle Türme waren viereckig, gemauert aus Natur- und Ziegelsteinen.

Es ist möglich, vier Bauphasen der gemauerten Burg auf der Halbinsel zu unterscheiden:

- Phase 1 – der Anfang des Baus der Burg vom Garde-Typ mit einem großen Turm (15x15m) auf dem nördlichen Teil der Halbinsel,
- Phase 2 – die Umsetzung des Planes der vorderen Burg mit sieben Türmen und den Verteidigungsmauern dazwischen,
- Phase 3 – der Abschluss des Baus des vorderen Tei-

les der Burg, die Einfassung des Hügels "Opfer" mit Verteidigungsmauern,

- Phase 4 – der Baubeginn auf dem Hügel "Opfer", der vermutlich auch nicht abgeschlossen wurde.

Die Burg der Trakai-Insel ist eine der besterhaltenen Burgen aus der Zeit des Großfürstentums Litauens. In der architektonischen Komposition der Burganlage dominiert der Donjon des Hauses (Schlosses) des Großfürsten, über fünf Etagen. Dieses Schloss wird gebildet von zwei Bauteilen über drei Etagen und einem Innenhof dazwischen. Vor der Burg stehen vier Verteidigungstürme, an den Verteidigungsmauern sind die Teile des Gebäudes angeschlossen, die für die Soldaten und als Schuppen gebraucht wurden.

Die Burg hat man auf drei Inseln gebaut. Aufgrund der Ergebnisse von Forschungen kann man drei größere Bauphasen erkennen:

- Der Bau wurde auf der höchsten Insel angefangen, wo jetzt das zentrale Schloss steht; es wurde geplant, das Schloss U-förmig und mit einem Hof vor dem Schloss zu bauen; Die Forschungen haben gezeigt, dass diese Bauten abgebrannt wurden;
- Während der zweiten Bauphase hat man ein repräsentatives Schloss gebaut und einen Teil der Verteidigungsmauer, die das Schloss einfasst.
- Während der dritten Bauphase hat man die Bauten vor der Burg gebaut, für den Bau der Türme hat man solche Stellen der Insel in der Nachbarschaft gewählt, die sich am besten eigneten und am höchsten aufragten.

Giedrė Filipavičienė
Institute of Monuments Restoration
Žemaitijos 13/102001 Vilnius, Lithuania