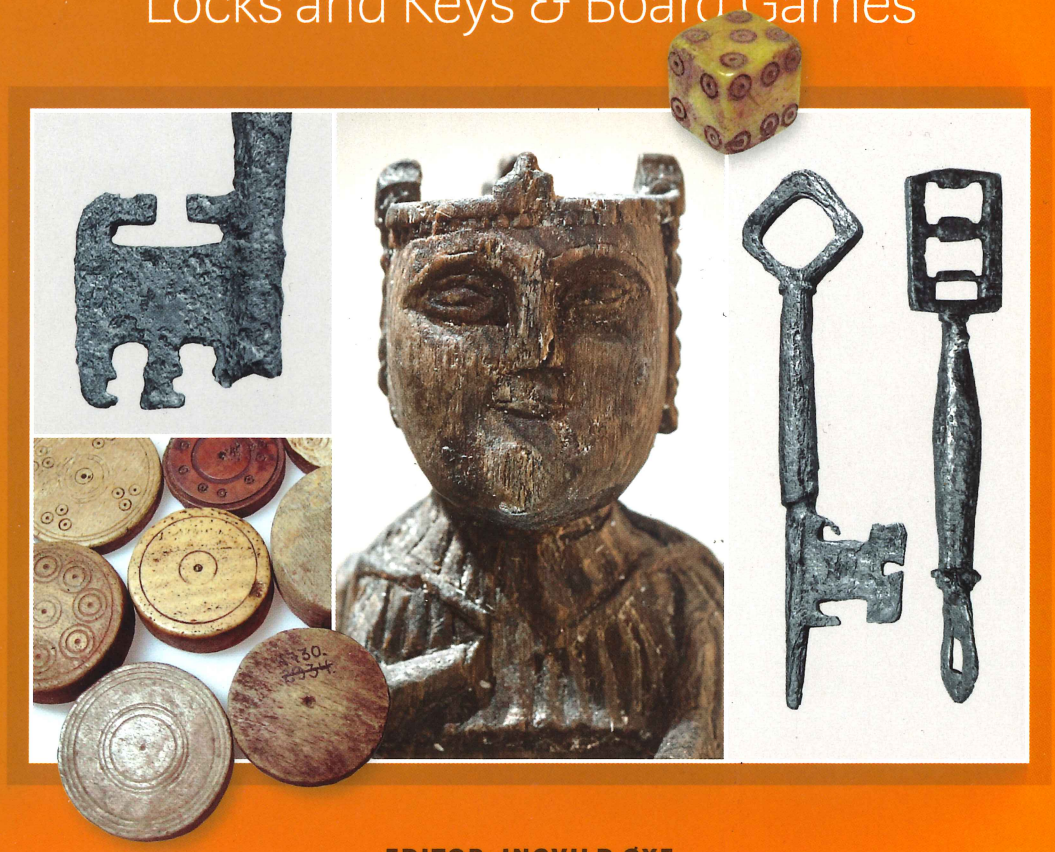
THE BRYGGEN PAPERS

Supplementary Series No. 9

'Small Things Forgotten'

Locks and Keys & Board Games



EDITOR: INGVILD ØYE

FAGBOKFORLAGET

‘Small Things Forgotten’
Locks and Keys & Board Games

The Bryggen Papers

give a scholarly presentation of the archaeological finds from the excavations at Bryggen and other medieval and early modern sites in Bergen.

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Inquiries about this text can be directed to
Fagbokforlaget
Kanalveien 51
5068 Bergen
Telephone +47 55388800
Telefax +47 55388801
http://www.fagbokforlaget.no
fagbokforlaget@fagbokforlaget.no

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Contents

Foreword

This volume of The Bryggen Papers deals with two groups of artefacts: locks and keys and remains of board games from the medieval town of Bergen. In his book *In Small Things Forgotten: An Archaeology of Early American Life* the renowned American archaeologist James Deetz shows how the past can be understood by studying the small things – ignored and forgotten objects that may elucidate the intricacies of daily life but also connect to the larger histories. The title of the present book refers to such assemblages of small and often forgotten things, hitherto neglected but as the book illustrates, important and able to illuminate daily life in the medieval town. They also connect to the broader cultural processes in an expanding international trading centre – shifting social and cultural conditions, lifestyle, economy and security. The artefacts analysed in this volume of the Supplementary Series represent the largest assemblages of these categories in Scandinavia: the locks and keys comprise some 300 artefacts, and there are more than 1100 remains of different board games.

The two papers presented here, 'Locks and keys from Viking Age and medieval contexts – tools and symbols' by Ambjørg Reinsnos, and 'Board games from the medieval town of Bergen' by Guro Koksvik Lund build upon their master's theses in archaeology at the University of Bergen, submitted in 2006 and 2010 respectively. Their theses have been somewhat abbreviated, partly revised and translated into English for the publication in this ninth volume of The Supplementary Series. The publication of the volume has been financed by grants from the University of Bergen: The Department of Archaeology, History, Cultural Studies and Religion, the Faculty of Humanities, and Skolebestyrer B. E. Bendixen's legate.

The editorial board responsible for the publication of the series consists of Senior Executive Officer Ann Christensson, Directorate for Cultural Heritage, District Office West, Bergen, Professor Else Mundal, Centre of Medieval Studies, University of Bergen, Senior advisor Anne Ågotnes, Bryggens Museum/Bergen Bymuseum, and Professor Ingvild Øye, Department of Archaeology, History, Cultural Studies and Religions, University of Bergen.

Bergen, February 2013

Ingvild Øye
Chief Editor

Artefacts in contexts – an introduction

INGVILD ØYE

The archaeological finds from the urban subsoil of Bergen constitute one of the most diverse and altogether largest assemblages of medieval artefacts in Norway, and offer a unique opportunity for studying the urban culture of the period. Many of these finds were uncovered in the latter part of the nineteenth and first part of the twentieth centuries and the assemblage grew with the addition of multiple finds during the large scale excavations at Bryggen – 'the Wharf' – at the bay harbour of Vågen after four tenements burnt down there in 1955 (Fig. 1.1). The excavations of the 5,700 m^2 site continued for thirteen years and then sporadically into the late 1970s (Fig. 1.2). They resulted in an overwhelming mass of finds. Later, excavations of other and generally smaller sites in the medieval town have produced a rich archaeological material.

While medieval archaeology in the latter part of the twentieth century was engaged in smaller and larger excavations, research into the finds has now to a larger degree come to the forefront. It started with the *Bryggen Project,* a publication programme financed by the Norwegian Research Council from 1981 to 1986. During this period the publication of the series *The Bryggen Papers* started. Researchers from the University of Bergen have been the main contributors together with other national and international scholars. After medieval archaeology had been integrated as an academic discipline within archaeology at the University of Bergen in 1994, many PhD- and master students had the opportunity to delve into this rich source material, and so far more than twenty master and doctoral theses based on the finds from Bergen have been submitted. The new emphasis on the artefacts and material culture has given new insights into the medieval urban culture and particularly that of Bergen. Consequently, Bergen has become an important basis of comparisons with other towns from the period. In this volume two recent studies of the finds from Bergen – locking devices and board games – are presented.

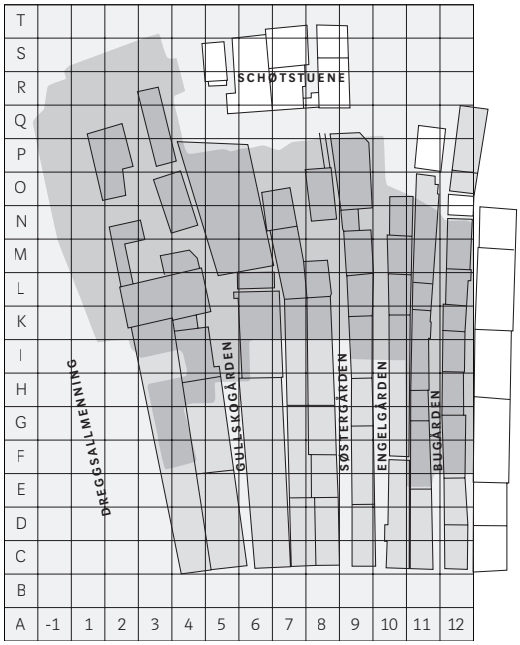


FIGURE 1.1 The Bryggen site (grey) and the area and buildings struck by the fire in 1955, comprising four tenements erected after a major fire in 1702. The excavation showed that the settlement pattern had medieval roots.

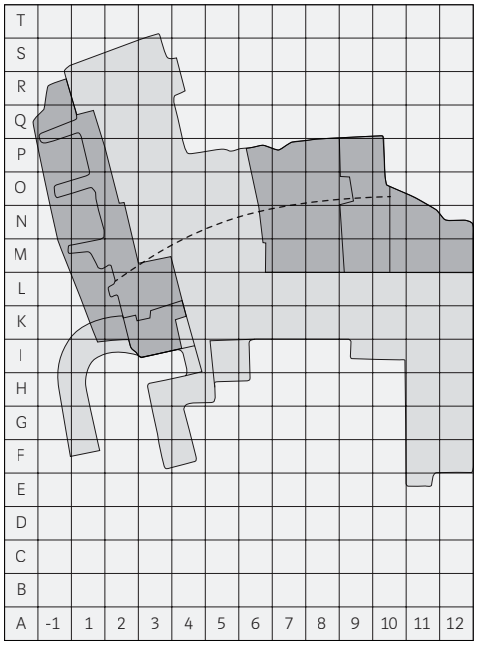
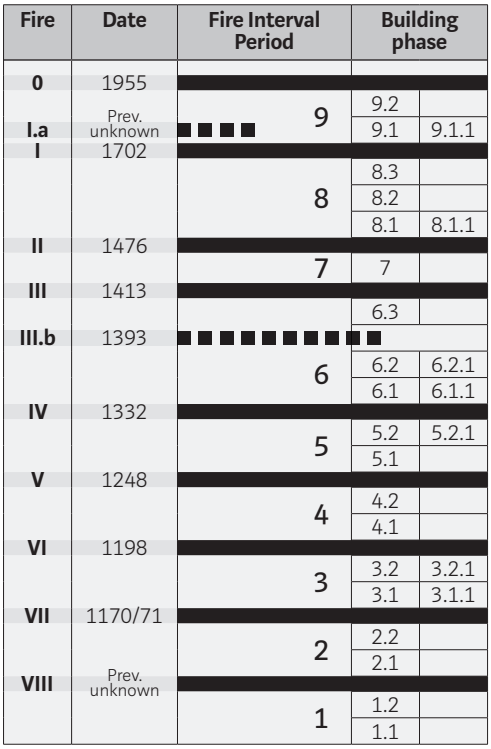


FIGURE 1.2 The Bryggen site, BRM 0. The dark grey areas were excavated by machine down to fire layer V (1248). The rest of the area was excavated stratigraphically from the top layer and down to fire layer VII, 1170/71.

Archaeological traces

The uncovered traces of the Bergen material culture serve as a door opener to many aspects of urban life, not least the urban space and its physical structure and development over the centuries: plots, tenements with their many buildings and rooms, passages, streets and the harbour. In Bergen, such traces are especially manifest in the Bryggen area where the humid subsoil offers excellent conditions for preserving organic material. Here, remains of the gradual expansion of the medieval waterfront have been uncovered, from the first posts struck into the beach in the early twelfth century and the first bulwarks erected as foundations for quays, buildings and passages.

Over the centuries, many fires have ravaged the densely built town leaving traces in the underground. Because Bergen, as a royal and an episcopal seat developed into the most important commercial centre of Norway, the devastating fires are also described and solidly recorded in written sources (Helle 1998). This has given an



Fire	Date	Fire Interval Period	Building phase	
0	1955			
		9	9.2	
I.a	Prev. unknown		9.1	9.1.1
I	1702			
			8.3	
		8	8.2	
			8.1	8.1.1
II	1476			
		7	7	
III	1413			
			6.3	
III.b	1393			
		6	6.2	6.2.1
			6.1	6.1.1
IV	1332			
		5	5.2	5.2.1
			5.1	
V	1248			
		4	4.2	
			4.1	
VI	1198			
		3	3.2	3.2.1
			3.1	3.1.1
VII	1170/71			
		2	2.2	
			2.1	
VIII	Prev. unknown			
		1	1.2	
			1.1	

FIGURE 1.3 The fire layer chronology on the Bryggen site, adapted from Herteig 1990.

excellent opportunity to correlate the archaeological remains with the stratigraphical fire layers and historical information. In practice, this task is more challenging than counting fire layers from top to bottom, as the traces of the fires are not spread as even carpets, and have to be correlated with datable finds and other constructions. Nevertheless, it has been possible to establish a reliable chronology for the development of the main urban settlement area of Bryggen, based on fire-layers and their relation to other datable finds. Altogether, eight main archaeological periods have been identified, ending in datable fire layers, from 1170/71 to 1702 (Herteig 1985; 1990, 91). Traces of an earlier fire cannot be related to any historically known town fire, and is tentatively dated to c. 1120/30, based on dendro-chronology and pottery (Hansen 1998) (Fig. 1.3).

Outside the main habitation area of Bryggen, archaeological finds are more unevenly and scarcely distributed, due to more occasional and less extensive investigations, and also to the different functions of the other areas of the town (Fig. 1.4).

Five socio-topographic urban zones

The oldest archaeological investigations were undertaken in the so called *Holmen* area (No 1, Fig. 1.4), today Bergenhus Castle, east of the entrance to the harbour – an area that was dominated by the royal palace and an ecclesiastical complex containing the cathedral and the bishop's estate. When excavations started here in the latter part of the nineteenth century, they concentrated on the building remains and their restorations. This was also the focus of the new investigations that started again in the 1940s and 50s after a devastating explosion in the harbour nearby in 1944, ruining the royal hall, Håkon's Hall from the mid- thirteenth century, and the sixteenth century

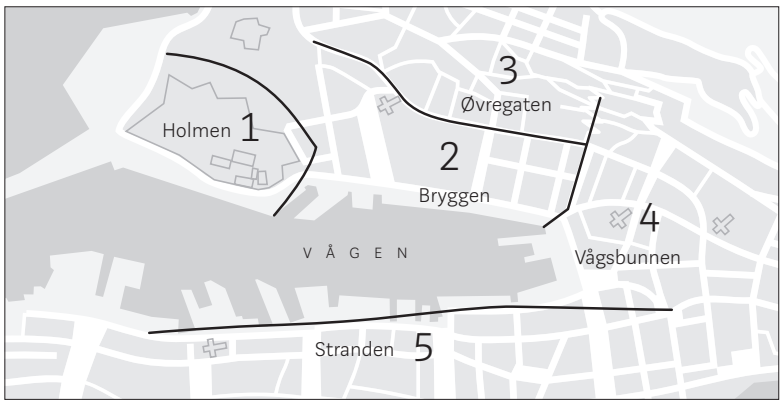


FIGURE 1.4 Map of medieval Bergen with the five sociotopographic zones marked with the numbers 1–5. Source: map: NIKU.

Rosenkrantz Tower; once the keep of the medieval palace. Generally, few archaeological artefacts were documented and collected during these early investigations which were carried out in a mainly architectural perspective.

The area at *Bryggen* (cf. No 2, Fig. 1.4) stretched along the eastern side of Vågen from Holmen to the head of the bay. From the very start this zone constituted the principal town area. It was divided into long plots perpendicular to the seafront, stretching up to the main street at the rear. In the High Middle Ages the area comprised more than thirty tenements, generally built as long rows of more or less connected buildings, each of them containing one or several rooms. Most of the tenements consisted of two rows of buildings ('double tenements') with a passage between and a common quay area in front, but there were also some 'single tenements' consisting of one row of houses and a passage. Additionally, broader public commons ran parallel to the tenements with their private passages from the harbour to the main street. The Bryggen area with its harbour facilities was the core area for the international large scale trade of Bergen and also the densest built zone of the town. During the Middle Ages, the area was expanded by infilling and by building new quays into steadily deeper waters. Stage by stage, from the early twelfth century to around 1700, the waterfront expanded by more than a hundred metres from the original shoreline.

When the old wooden tenements in the southern part of the Bryggen area were torn down by the turn of the twentieth century and replaced by the present taller tenements in stone and brick, only cursory excavations and surveys were carried out. Still, important observations were made of constructions and fire layers, and the most intact artefacts were collected (Koren-Wiberg 1908; 1921). In the 1970s and 80s and well into the 90s, several small scale excavations were carried out, most of them south of the large Bryggen site. In total, these excavations give a more complete impression of the Bryggen area and its archaeological potential, including the medieval market place in the centre of the urban area with the Town Hall and Wine Cellar.

To the rear of Bryggen, another important urban zone was located along the main street, 'Stretet', which in the thirteenth century became the 'Upper Street', now *Øvregaten*, as a continuous passage was opened over the quays in front of the tenements (No 3, Fig. 1.4). This was the origin of the name of Bryggen in the definite form, 'the Quay'. According to written evidence, the Upper Street area was dominated by small scale trade and various crafts where products were offered from booths along the street. The street ran parallel to and was connected to Bryggen by commons and tenement passages. In this zone of the town only few archaeological excavations have been carried out, and the finds are scarce compared to the Bryggen area.

The southern part of the town, around the head of the bay *Vågsbunnen* (No. 4, Fig. 1.4), constituted another socio-topographic town area, also characterised by infilling and industrial activities, particularly shoemaking. Such activities are reflected in the few archaeological excavations that have been carried out there. Further south, on the outskirts of the settled urban area, three of the town's five monasteries were located, the oldest one was the convent of Nonneseter from the mid-twelfth century. It has been partly excavated (Bendixen 1895), but like the other early excavations, the main focus was on the building remains rather than archaeological layers and finds.

The fifth town area, *Stranden*, 'the Beach', west of Vågen (No 5, Fig. 1.4) was also originally dominated by monastic institutions, of which the abbey of Munkeliv from the early twelfth century was also partly excavated in the nineteenth century. Further north the area gave room to the archbishop's palace, the foundations of which are preserved under *Nykirken*, 'the new church'. During the fourteenth century Stranden was taken into use as a residential and partly also commercial area, especially after the Hanseatic Kontor was established at Bryggen. This part of the town has generally been less subject to archaeological investigations than other parts of the medieval town.

The townspeople

As concrete remains of human activities, archaeological objects reflect how people used the urban space – where and how they lived and worked. Bergen was a cultural and social melting pot, where people moved in from rural districts and foreigners came as sailors and tradesmen during the sailing season or even stayed over as so called winter-sitters for longer periods. During the Middle Ages, whole areas of the town could be dominated by different foreign groups, by far the largest of German origin, especially after the Hanseatic Kontor was established at Bryggen about 1360, and the area became a German male colony with its own jurisdiction (Helle 1982). This also changed the demographic structure of the town.

Studies of different kinds of artefacts, as well as buildings and other structures have brought new insight into the development of the town and how people lived and

organised their lives. The artefacts reflect a mixed population as for gender and age, especially in the earliest centuries. Traces of women are reflected through their tools, textile-production equipment (Øye 1988), special remains of pleated textiles (Hansen 2005; Vedeler 2007), dress accessories and jewellery (Molaug 1998, Busengdal 2012), and different types of cooking and baking and other household utensils (Ågotnes 1994; Vangstad 2003; Tengesdal 2010, Nilsen 2011). Males' tools and equipment consist of artefacts such as weapons, sheaths and scabbards (Nøttveit 2000; 2009; Malde 2008; Hjelmtvedt 2012), fishing tackle (O.M. Olsen 2004) and carpenters' tools (Husvegg 2011) amongst others. Shoes appear in all sizes, from the largest used by men to the smallest children's shoes. Sometimes it can, however, be difficult to draw the lines between genders and age groups based on size (Larsen 1992; Mygland 2007). Children's toys are also concrete evidence of their presence in a working environment (Mygland 2007; Øye and Mygland 2012). Runic inscriptions on different kinds of artefacts, including toys and shoes, but also other artefacts, mostly in wood, often give direct information about who the users were marked by their names, both males and females, adults and children, and sometimes also foreigners. Some also contain longer messages, in the form of commercial letters, poems and even love declaration and others (Liestøl 1964; Sannes Johnsen 1988). Indirectly, they also give information about mentality and daily life.

The most concrete evidence is the traces of people themselves, skeletons found at medieval church yards. Studies of human remains from the church yards of St Mary's and the Nonneseter convent have given insights into living conditions (Lorvik 2009; Hamre 2009; Ekstrøm 2009). They indicate that urban life was not always an easy life for some show indications of insufficient nutrition, poor hygiene and physical stress. Still, many people were able to reach a fairly high age considering the period, with a mean age of 40 years.

Special rooms

Buildings and rooms in the tenements were built of different materials and techniques as well as size – mostly stave construction but also as notched log construction. The two techniques could also be combined (Herteig 1990, 1991; Reimers 2001; Olsen 2003). From the thirteenth century the tenements were also of two or three stories (Helle 1982). A new element in the Late Middle Ages was the stone-built cellar. Earlier, only churches, monasteries and royal buildings were built in stone. By the turn of the fourteenth century the Town Hall and Wine Cellar were also partly built in stone (Ekroll 1992).

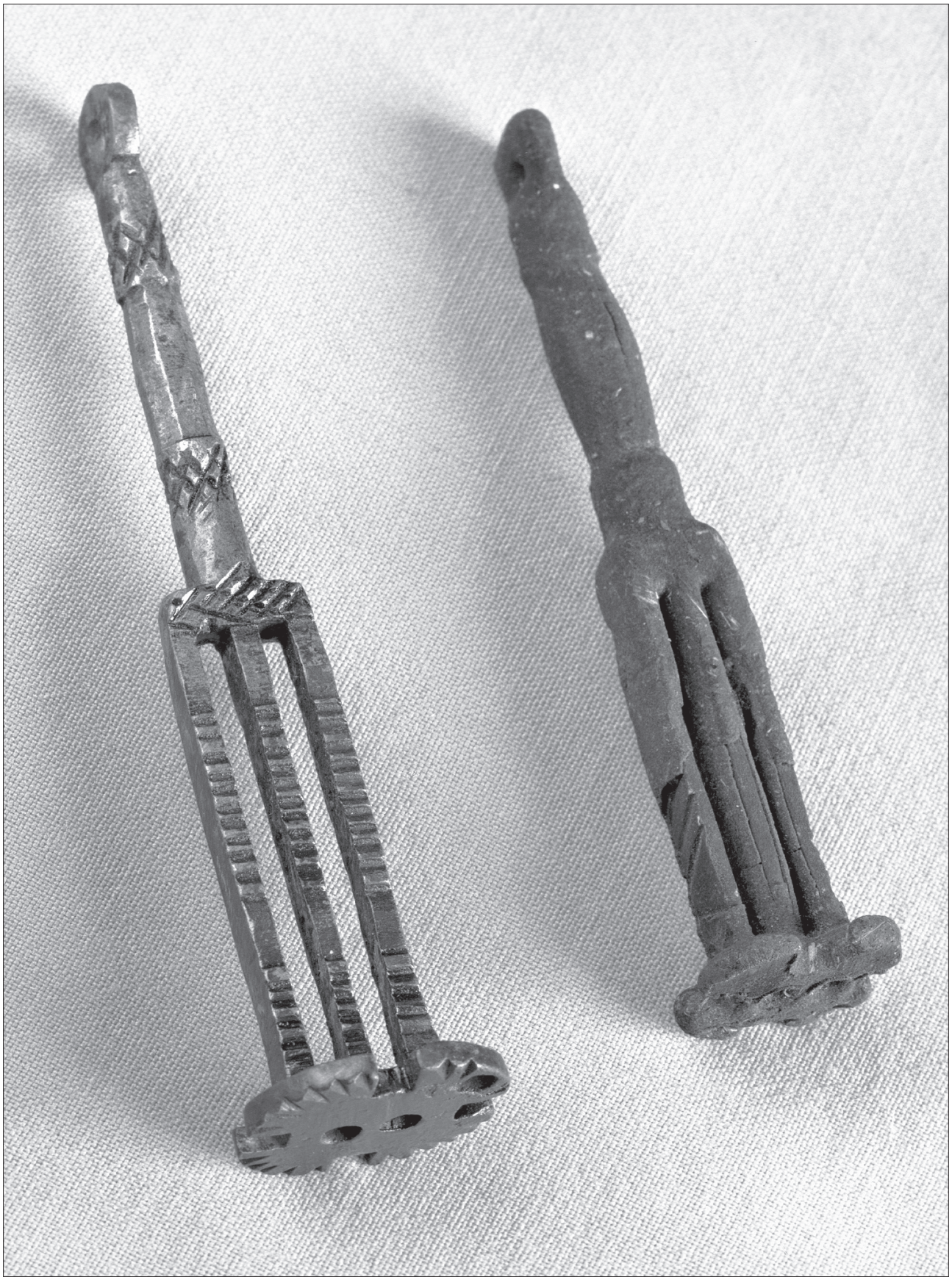
Analyses of the building remains have also shown both rather primitive and more advanced toilet facilities, both for common and private use (Herteig 1990, 1991;

Økland 1998; Øye 2007). Sanitary conditions seem to have improved during the Late Middle Ages with regard to waste disposal. This is reflected in the archaeological record as thinner layers of accumulated waste, and thus also fewer artefacts for the archaeologists to study. The new treatment of waste seems to have been influenced by the German presence at Bryggen and first appears in this part of the town.

As the settlement expanded into infilled areas at the waterfront of Bryggen, the tenements were also prolonged, and a functional division between the front and rear areas can be observed both in the building constructions and artefacts within these zones with lighter stave constructions for storage in the front and living quarters and assembly rooms to the rear (Herteig 1990, 1991; Moldung 2000; J. Olsen 2004). Over the centuries a horizontal functional and spatial division also occurred. Written sources also leave detailed descriptions of the different rooms and their tenements from the Bryggen area in the late thirteenth and early fourteenth centuries. They show among others that servants slept in common rooms for males and females respectively in the attics (Helle 1982). The artefacts also seem to reflect gender-related spatial divisions within rooms and work zones in the High Middle Ages (Øye 1988). According to written evidence, the whole Bryggen area became a purely male zone under the Hanseatic Kontor. The archaeological remains do, however, indicate a more gradual process lasting for some decades after the establishment of the Kontor (Øye in press).

The artefacts reflect many aspects of urban life, many also related to eating, drinking and social gatherings. The many thousand shards of imported wares of drinking vessels, drinking glasses, jugs and pitchers of ceramics reflect the cosmopolitan environments in the town (Høie 2006; Tøssebro 2010). Cooking equipment of imported stoneware appears side by side with traditional domestic vessels of soapstone, indicating a mixture of nationalities and traditions, where new products and ideas were easily adopted and adapted (Øye 2009). The expanding international trade and shifting trading partners is also reflected in the provenience of the different artefacts, especially the pottery which appears as a mass material able to give quantifiable expressions of shifting relations (Lüdke 1989; Vince and Blackmore 1994; Demuth 2000).

Precious commodities and voluminous merchandise such as stockfish for export and incoming grain and other groceries to be stored at Bryggen, demanded rooms that had to be locked off. The rear areas, on the other hand, stand out when it comes to artefacts reflecting social activities, drinking, eating and playing. The two papers that are presented in this volume of The Bryggen Papers, one on locking devices and the other on board games, relate to both areas and reflect many different aspects of urban life and space: related to social spare time activities, and to control and security, both physically and mentally.



Push keys of subtype B1.2.2.1 from the Bryggen site (BRM 0/40441 to the left and BRM 0/11678 to the right).

Locks and keys from Viking Age and medieval contexts – tools and symbols

AMBJØRG REINSNOS

1 | Introduction

Locks and keys are primarily tools intended to prevent and allow access and thus essential objects for marking distance or connection both practically and symbolically. This study deals with locks and keys in urban and rural contexts, located geographically to the county of Hordaland in Western Norway, including the medieval town of Bergen. The aim is to analyse different aspects of the keys, both their practical functions and symbolic roles in a long term perspective.

In Norway, keys came into use in the Early Iron Age, and the oldest known keys in Scandinavia are dated to the Early Roman period (c. 0–200 AD), found in wealthy female burials (Roesdahl 1993: 217). These early examples of locks and keys were simple constructions signifying people's needs to protect their belongings but also strong symbols of power and property rights. Locks and keys of bronze and iron were expensive items and thus not common property and probably signify wealth and power in their own terms. By studying possible changes in these devices in time and space, changes in attitudes towards property may thus be revealed. Changes in the symbolic expression of artefacts may also expose societal changes, especially when it comes to power relations, as material culture is often actively expressed in social strategies (Olsen 1997: 65). An important approach, then, is trying to detect possible changes within these find categories from the Viking period (c. 800–1050 AD) to the urban environment in the Middle Ages (c. 1050–1500 AD).

As early as in the Migration Period (c. 400–550 AD) as well as in the Late Iron Age (c. 550–1050 AD), keys frequently appear in female burials, and are interpreted

as a symbol of married women's role as administrators of the supply on farms (Blindheim 1947; Kristoffersen 2000). Medieval laws also confirm the connection between keys and marital status. Wedding ceremony changes from the Viking Age to the Middle Ages may also have affected the key as a symbol (Carlsson 1942), but the highly decorated keys and/or keys of precious material may still have been symbolically connected to the role as housewife. To what degree are keys of these types represented in female graves from the Viking period and the medieval urban contexts of Bergen?

With Christianity, keys became both symbols for the church's power over worldly goods and access to the divine goods (Zwilgmeyer 1986: 169). In addition, keys were used for locking the church doors. These keys were often large and highly decorated, and in the Early Middle Ages (c. 1050–1150), were often made of bronze (Blix 1960). Later, bronze was mainly replaced by iron, due to the strength of this material. Bronze keys have often been interpreted symbolically as the keys of St Peter, as the guardian of the gates of heaven, the key-bearer, referred to in Matthew 16: 19. Iconographically, he is often portrayed with two keys, one in silver and one in gold, representing heaven and hell (Ursin 1975: 129). It is therefore interesting to see whether such keys are archaeologically detectable in medieval Bergen with its twenty churches and five convents by the High Middle Ages.

About the mid-1300s, when the Hanseatic League established one of its four main Kontore in Bergen, the Bryggen area became a purely male community (Helle 1982: 722, 734, 761). It is therefore interesting to see whether there are changes in locks and keys in this area during the period, and if changes can be connected to the establishment of the Kontor. Changes might be detected in the presence or absence of particular types of locks and keys. Is it possible to trace spatial differences in the different zones of the town and within the Bryggen area?

State of research

Archaeological finds of locks and keys represent an understudied artefact group in Norway, generally limited to typological aspects, or related to studies on art historic themes or works on craft or techniques. Only to a limited degree have they been assessed in wider contexts.

Early studies of locks and keys

The earliest typological study that included locks and keys appeared in 1885, when Oluf Rygh published *Norske Oldsager*, a chronological presentation of different artefact categories from all the main archaeological periods. Rygh's classification of artefacts from the Late Iron Age is still relevant, also for parts of the medieval artefacts.

As for artefacts from the Middle Ages, Sigurd Grieg was the first archaeologist in Norway to study artefacts from medieval towns more systematically. In *Middelalderske byfund* from 1933 he presented artefacts that had been uncovered during the earliest excavations and surveys mainly in Bergen and Oslo brought about by development and modernisation of the urban infrastructure. In this broad overview of the different artefact categories, including locks and keys, Grieg focuses on types and dating. He finds that the keys that are presented in Rygh's publication are rare in urban contexts (Grieg 1933: 80). He therefore presents his own classification, based on similarity and dissimilarity in shape. He also compares the finds with corresponding artefacts from other Scandinavian towns, and the chronology is to a large degree based on analogies. The finds are, however, scanty compared to the number of objects that have later been retrieved in Bergen. Still, Grieg's work is useful as reference.

A contemporary of Grieg, Jan Petersen, gives an overall presentation of tools from the Late Iron Age up to date with finds as for the early 1940s in *Vikingetidens redskaper*. Here, the different artefact categories are presented regionally according to counties (Petersen 1951: 5). Locks and keys are classified according to the types of Rygh and Grieg, and divided into subgroups based on decoration and raw material. His typological analysis and chronology is still used and useful. The find contexts are mainly graves, stray finds and rural settlements. As for the grave finds, Petersen introduces a new categorisation related to gender, and finds that keys and remains of caskets have been more common in female than in male graves (ibid: 482). According to Petersen's national survey, 328 graves from the Late Iron Age contained locks and/or keys, and where the gender could be determined with more or less certainty. Of these, 183 were female and 145 male burials. The high proportion of female burials containing these artefacts becomes even clearer when taking into account that the female Viking Age burials only constitute one fourth of the total number of graves in Norway. Petersen's work thus forms an important reference with regard to the finds from the Late Iron Age, but an update on the finds from Hordaland has been necessary.

Recent studies

More recent studies of these find categories generally have a wider scope than the early presentations, but often appear only as elements in wider artefact oriented artefact studies based on raw material, where locks and keys only make up a small group of the total material that is analysed. This is the case for Sigmund Jakobsen's analysis of metal objects in the medieval town of Tønsberg, where barrel locks and keys for barrel locks are included to illuminate metallurgical competence in the production of alloys, as well as knowledge of metals and alloys (Jakobsen 1991). His analysis shows that the form of the object was often more important than its strength, and hence degree of security. These issues are also relevant when studying the artefacts from

Bergen, as the artefacts from urban contexts have many common traits. My focus is, however, on the use and the use contexts, rather than on production and technology.

Gerd Færden's analysis of locks and keys from Gamlebyen in Oslo also has a technological approach (Færden 1990) but she also takes the use into account. She finds that the Oslo material changed over time (ibid: 276–277).

Generally, keys and locks from Swedish towns have been more thoroughly studied than in Norway. The finds of barrel locks and push keys from medieval Lund, presented in an article by Ragnar Blomquist (1940), focuses on chronology and development of the locks, especially the barrel lock. He suggests that this kind of lock might have been introduced from the east during the Viking Age through commercial networks (Blomquist 1940: 103). Another important Swedish study relates to the site of the PK-bank in Lund, excavated in the 1970s (Andrén and Nilsson 1976). Besides being classified in types and dated, the functions and symbolic aspects are also to some degree assessed. In my context, especially the dating of the artefacts is relevant.

In a wider geographical perspective, tools of 'Viking Age type' also had an impact on the development of keys in Great Britain into the 1200s (Ward-Perkins 1940: 18), probably of reciprocal influence. Artefacts from the British area may therefore be relevant for comparison. An early article 'Mediæval keys in Salisbury Museum' (Penny 1911) presents keys from the 1200s to the 1500s found in Salisbury. Another rather old, but still useful publication is the London Museum's *Medieval Catalogu*e which presents the artefacts from London, found mostly as stray finds up until the interwar period (Ward-Perkins 1940). Here, keys are crudely classified into types, based on among things what types of objects they belonged to and the keys are dated on the basis of Grieg, Rygh and the finds from Salisbury. In addition, iconographical material has been used, particularly the so-called St Peter's key.

The German historian Torkild Hinrichsen has discussed keys as symbols both of the housewife and St Peter, based on written sources and images on amongst others medieval grave stones, mainly based on Swedish and Danish source material (Hinrichsen 1979). The historian Lizzie Carlsson also takes up the symbolical aspects related to keys and changing views over time (Carlsson 1942).

The new interest in material culture as symbols has benefited post-processual archaeology since the end of the 1980s but has had relatively little impact on the studies on keys this far. Siv Kristoffersen and Kristin Gellein both mention keys in their respective studies on the Early and Late Iron Age (Kristoffersen 2000; Gellein 2007). Gellein deals with the transition to Christianity in Hordaland, focusing on artefacts in burial contexts, while Kristoffersen deals with the Migration Period. Gellein discusses keys as one of several artefact groups trying to identify prehistoric graves containing traces of Christian influence. The symbolic connotation is a central issue, among others related to keys of the St Peter type, of which she has found three

examples. Although the symbolic interpretation can be questioned, her survey is very useful for the present study. Kristoffersen, like Gellein, also has a gender perspective, and finds that keys have always been found in female burials from the Migration Period and interprets them as symbolic representations of women as housewives. The only key type that is represented is the simple hooked key.

Ethnological studies are also relevant for my analysis, especially Sigurd Erixon's survey (1946) of the development of the lock from Antiquity to the present, where he presents the different types of locks and keys that have, directly or indirectly, influenced the technical development. His work is very useful, as many of the artefacts in my study are keys belonging to mounted locks on doors. He also explains the technical aspects of the locks in a systematic way.

To summarise, most of the studies on locks and keys are catalogue presentations, focusing on chronology and typology. More recent works, however, focus more on production techniques. All in all, locks and keys have only to a small degree been assessed in wider contexts both as for function and as symbols.

Approaches and research questions

The aim, then, is to examine the different functions of the key, functionally as well as symbolically, focusing on changes in the use of the key from the Late Iron Age throughout the Middle Ages. Is it possible to detect changes in the use of the key over time and in different cultural and socio-economic contexts, from a heathen rural community to a Christian, urban setting? What kinds of objects were locked, how, and why? To approach these issues, I study the different types of locks and keys, their raw material, and their spatial and temporal distribution. I therefore also analyse the contexts of the locks and keys, both on a micro and macro level. On a micro level, the artefacts are localised in as much detail as possible according to the find contexts: as part of the burial ritual in the Late Iron Age, and in relation to the urban surroundings of medieval Bergen, such as buildings, passages and quays. In this way, I try to reveal whether particular buildings, rooms and containers were locked, and their possible functions. Smaller containers, such as chests, caskets and closets, have often had locks and are therefore also relevant artefacts. An identification and examination of finds of caskets and chests in the urban context has, however, not been possible and only caskets and chests from the Late Iron Age that have been identified in earlier studies, are included. Finds combinations might reveal the inherent symbolic roles – what people locked, and what they kept open.

On a macro level, the context of the artefacts is assessed on a larger scale. In medieval Bergen, the artefacts can be allocated to different socio-topographic zones. In the rural areas, this can be done only in relation to buildings and rooms at the differ-

ent settlements. Thus, differences in the use of locks and keys in rural versus urban contexts might be detected, as well as differences between the different town areas. Did new types of keys come into use during the period and were they adapted to new areas of use? The reasons for possible changes are an important issue to be considered. Do changes in the use of the keys express change in functions, and perhaps also a change in mentality?

Area of investigation

In the county of Hordaland, nearly all locks and keys from the Late Iron Age are found in burials. According to the finds catalogue of the University Museum of Bergen, 30 graves in this county from the Late Iron Age, but mostly from the Viking period, contained keys and/or chests/caskets, comprising 25 keys and the remains of 13 caskets. Seven confirmed artefacts and one probable have a wide dating frame; Viking Age/Middle Ages. These artefacts have been found in rural settlements on islands outside of Bergen: Sandøya, Hjartøy and Høybøen. One medieval key has been found at a churchyard in Eidfjord, and two medieval keys have been found at the convent at Halsnøy. Two medieval keys have been found in the communities of Os near Bergen and Granvin in the Hardanger region, but these lack further contextual information. In addition, eight artefacts dated to the Middle Ages have no information with regard to find locations.

The majority of the assemblage stems from Bergen, where the extensive Bryggen excavations (1955–68) represent the largest site. The Bergen assemblage includes altogether 223 confirmed artefacts: 89 locks/parts of locks and 134 keys, found at 17 different sites, and at six sites during construction work. One of the urban artefacts was found in re-deposited layers, without a secure context. In addition, the total assemblage comprises 27 probable and 10 uncertain locks/keys as for identification.

Medieval Bergen may be divided into five different socio-topographic zones (cf. Øye this volume, Fig. 1.4): (1) the royal area at Holmen, (2) Bryggen, the main commercial area, (3 and 4), the handicraft areas at Øvregaten and Vågsbunnen and (5) Stranden. Artefacts from all these five areas are represented in this study, but the majority is from the Bryggen area.

2 | Theoretical perspectives and methodological approaches

Theoretical approaches

The theoretical approaches used in this study relate to different theories on material culture, emphasising the dual character of the artefacts. Inspiration comes not least from structuralist points of view, explaining the dualism between function and meaning. The anthropologist Claude Lévi-Strauss claims that human beings have a tendency to divide the world into contrasting categories, and the most meaningful differences are those that can be grouped into binary oppositions (Lévi-Strauss 1969: 161; Olsen 1997: 196). Thus, cultural meaning is produced in similarities and differences between signs, to make the world comprehensible. Classic examples of binary oppositions are life/death, warm/cold and the dichotomies public/private and open/closed.

Locks and keys are artefact groups that comprise a transformation of this kind; the binary opposition 'open/locked'. The situation 'locked' or 'closed' gets its meaning through the contrast to the situation 'open', and the lock attains value as a symbol of something private through its contrast to public/common. This gives further associations to the distinctions ownership/no ownership and access/no access. The key thus acquires connotative levels of meaning as a symbol of power.

As form and function are closely connected, it is often difficult to separate an object's stylistic and functional elements. Keys are no exceptions. The concept 'style' may comprise both technological and purely stylistic variations (Sackett 1982). Style, then, can be anything from choice of raw material to the shape and décor of the object. These are interesting and relevant aspects that I find useful. The raw material might have made the lock or the key stronger, but may also play an important symbolic role, expressing status. Thus, the raw material has apparently also been significant for the symbolic significance of the objects. Still, symbolic value does not exclude functional importance, but these are rather two sides of the same coin.

Style is closely connected to cultural context, and to interpret artefacts one should therefore know as much as possible about the context they are part of. My study comprises both a prehistoric rural society of the Late Iron Age and an urban, commercially developed society in the Middle Ages. Intentional grave finds are very different from urban settlements, where the objects have been lost, thrown away, or discarded.

Through material culture, symbols can be used to shape new roles, to redefine existing roles, and to deny the existence of others (Hodder 1986: 8). According to the anthropologist Anthony P. Cohen, one of the most important aspects of symbols is that they mark a community where a group of people share a common set of symbols to mark distance to other groups (Cohen 1985). Thus, people define themselves as opposed to what they are not part of.

Keys can be seen as symbols of exclusion, both functionally and symbolically. The key makes it possible to physically lock someone or something out of an area, a house, a room, a closet, a casket, etc. Demarcation of an area exhibits power to decide how the area is closed off; who gets access and who does not. In this way, one also delineates the social room. The key may thus be used as a symbol of power and resources, and also to signify the owner's social position. Display of status visualises different social strata by symbolically locking people out. Power, then, is a central aspect of locks and keys. Michel Foucault defined power as something one executes. The organisation of room is fundamental in the execution of power (Foucault 1984: 252). The contexts the locks and keys are found in are therefore essential for the study of the artefacts on different levels of meaning

Methodological approaches

Identification

A basic premise for the study is that the artefacts can be identified as locks and keys. Most of the artefacts comprised here – 130 confirmed, 10 probable and 6 uncertain locks and keys – derive from the Bryggen excavations. The identification of locks and keys from the Bryggen site and from other sites in Bergen had to be done by physically searching amongst all the metal and wooden objects in the store rooms for medieval objects of the University Museum of Bergen, located in Bryggens Museum. The artefacts have also been compared with earlier identified locks and keys from other archaeological contexts. To a lesser degree, contemporary photographies and ethnological material have been used.

The prehistoric material, 55 artefacts, have been identified and partly classified and presented in the finds catalogue of the Bergen University Museum. In order to compare all the artefacts, I have used the same classification system for both the prehistoric and the medieval material.

A general problem concerning identification is that the finds are often poorly preserved. Based on where the artefacts have been found and which method of conservation has been used, the condition varies considerably. Parts of the assemblage are severely corroded or fragmentary, and identification has sometimes been difficult. The artefacts have therefore been grouped into *confirmed*, *probable* and *uncertain* locks or keys as for identification. In the group *confirmed* artefacts, the objects are for the most part undamaged or they are parts of the artefact that can easily be identified. *Probable* artefacts more often consist of parts that are more difficult to define or identify, such as the stem of keys and the lock bolts. *Uncertain* artefacts consist mostly of elements that are difficult to define or identify, such as the stem of keys.

Some of the artefacts referred to in the catalogues have not been retrieved in the museum. In these cases, I refer to the information in the Bergen University Museum finds catalogue, even though these records may be incomplete and possibly even misleading. This is also the case with regard to the medieval artefacts that have not been retrieved in the museum. These artefacts still form parts of the overviews in the main group they belong to, or as far as they can be classified. Some artefacts could not be identified as confirmed keys or locks even though they formerly had been identified as such. In these cases, the artefacts are placed in the categories 'probable' or 'uncertain'.

Classification

Another important methodological principle concerns classification of the objects to find both the functional types and other meaningful attributes. In the widest sense, classification is identification. Units are based on shared characteristics, and are described and tagged in a way that makes it possible to recognise every individual member and at the same time differentiate these from other groups (Adams 1991: 64). Classification, then, is based on similarities and differences in shape and function; formal and functional classification (Dark 1995: 78–81). Locks and keys have a clear function, but are based on different principles and forms. When classifying the assemblage, I use both form and function as criteria.

Dating

An important part of the analysis is dating. By dating, changes in material culture can be traced over time, such as more secure types of locks or more or less decorated keys, or simply the distribution of the different artefacts in time and space. The artefacts from the Bryggen site are dated based on the finds' contexts and dating based on the fire layer chronology covering a time span from c. 1120 to 1702 (cf. Øye this volume, Fig. 1.3). Finds from buildings are dated according to documentation about the finds and their stratigraphical and spatial context, and analogue dated forms. The prehistoric material mainly comes from burial contexts and has already been dated, based on combinations of finds and the youngest object in the grave.

There are several methodological challenges involved when dating archaeologically deposited objects, and one of these is the possible divergence between the time of production and deposition (Dark 1995: 76). If the object has a potential for re-use, it might be taken care of because of its value as raw material. Some artefacts may also be deposited shortly after the time of production, or they might have been in circulation for a long time, such as artefacts that reflect status and can be inherited (Gräslund 1996: 34). Finds from secondary deposits can derive from older layers that have been brought to the spot. The dating of artefacts in such layers

indicates the youngest possible date of use. When an artefact has been found in an undated stratigraphical layer, I try to date it based on analogies in parallel forms found in other datable contexts.

Spatial distribution

One of the research issues is to reveal possible differences in the use of locks and keys in different areas of the medieval town, and in urban and rural environments. When studying the rural artefacts, the main issue is to localise graves that contain locks, keys or remains of caskets. The focus when studying the artefacts from medieval Bergen is to trace possible differences between the socio-topographical areas of the town. There might for instance be a difference in the use of locks when comparing the Bryggen area to other areas. At the large Bryggen site, covering an area of 70 x 70 m divided into an 8 x 8 m system (Herteig 1985: 15), objects were located in relation to both layers and constructive elements, making it possible to relate to different types and areas of the buildings, possibly also to detect differences between private and public spaces (ibid: 37).

Representativity

Natural processes are important regarding the representation of the archaeological finds. Different conditions of preservation can give a skewed impression of the artefacts. At Bryggen, organic material has had good conditions in the moist fill masses. Waste depositing in dry areas, on the other hand, generally provides poor conditions for organic material, but is more appropriate for metals. The conditions of preservation for iron were generally poor in infillings containing salt water, as in the Vågsbunnen area and the front of the Bryggen area, because hydrochloric acid could develop here (Olsen 2004: 20). In periods I and II, before 1170/71, most of the settlement on the east side of Vågen was located on dry land in the harbour area (Herteig 1985: 69).

Human influence also affects the material. Objects from graves represent a special category, as they have been intentionally deposited. The artefacts have probably been placed in the grave to show the deceased's role in the family and society. However, they can also present a manipulated reality, where the aim was to achieve a good reputation and to reflect power, even to hide conflicts and problems (Myhre 1991: 16). The graves might also express property rights; important for a new owner or heir. This was for example used as a premise in Frode Iversen's study of feudal and royal estates in Western Norway (Iversen 2004; 2008). In the Late Iron Age, not all people were buried in a marked grave, and particularly not in a mound. A daughter or sister had the right to inherit allodial and properties when there were no male heirs, and these women with marked graves were probably female heirs, so-called *'baugrygr'* (Øye 2005: 82).

In the town, objects that are either lost or discarded are the ones being studied. Destroyed or damaged objects were probably thrown away as waste in the Bryggen area (Øye 1988: 117). Complete and usable objects were probably lost. Still, medieval keys were probably taken good care of, and not easily lost. Damaged locks or keys could be re-melted rather than thrown away. A study of the waste deposit in the medieval Bryggen area shows differences between the periods before and after c. 1400 (Økland 1998). After c. 1400, the cultural layers became thinner, and seemingly, waste was then gathered and transported away from the area. This also affects the representation of the finds (ibid: 103).

The excavation method in the Bryggen area is also relevant, and has to be taken into account. Parts of the area were excavated by machine down to fire layer V, while the rest was excavated stratigraphically from the top fire layer to the bottom (Herteig 1969: 22; cf. Øye this volume, Fig. 1.2).

The analysed locks and keys therefore only represent a minimum number compared to the actual locks and keys in use, both in the Late Iron Age and in the Middle Ages.

3 | Classifications

The overall aim of the classification is to reveal the different types of locks and keys that were used in rural and urban environments of the study area. This provides a basis for assessing my other research questions. Defined terms for the different parts of the locks and keys are crucial for classification purposes. Keys can be divided into three main elements, with varying proportions according to the type of key (Fig. 3.1).

The *handle* is the part of the key one holds when operating it. This part does not physically enter the lock. The handle usually includes a *handle ring* or *bow*, which may comprise up to two thirds of the total length of the key, or only a bend or a ring at the end of the stem. *The stem* is the part between the handle and the key-bit. It can be simple, as in Fig. 3.1, or split lengthwise. The *key-bit* is at the end of the stem, and is the part that performs the locking operation inside the lock. The key-bit can have one or more teeth.

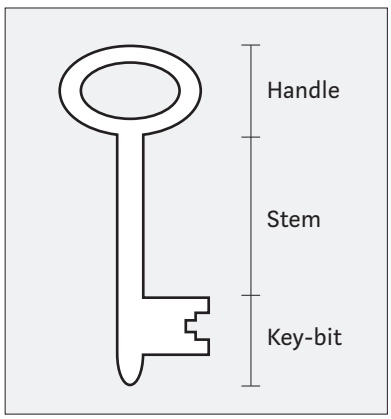


FIGURE 3.1 Sketch showing the different parts of the key.

The locks in the assemblage have different locking mechanisms, but are based on a common construction principle: they all have a bar or bolt, with or without springs, that prevents the lock from opening. The key moves the bolt out of the locking position, in some cases after neutralising the springs on the bolt.

In the classification, I distinguish between *functional* and *formal* elements, with a reservation as these categories tend to overlap. The material is mainly classified on four levels: *main group, subgroup*, *type and subtype* (Tables 3.1 and 3.2). *Function* forms the basis for the division into main groups and subgroups, while *formal* attributes are the basis for dividing the groups into types and subtypes.

In a by-law in Bergen from 1282, locks are referred to as being of two different types; ON *útláss* (outside lock) and ON *hverfláss* (turning lock) (*NgL III*: 13–14). 'Hverfláss' is a permanent lock, fastened to a door, casket or the like, while 'útláss' means a lock at the outside of something (*Fritzner III*: 821), or padlock (*KLNM XI*: 48). This division into permanent and portable locks is also used in my classification. These two main functional groups are further divided into subgroups according to the locking mechanism and how the key operates the lock.

The locks and keys classified in other studies are often barrel padlocks and push keys, cf. subgroup B1 in this study (Blomquist 1941; Færden 1990; Jakobsen 1991). To a certain degree, my classification of this type of lock and key is based on the analyses of Færden and Blomquist.

When classifying the formal attributes of the keys, I emphasise the shape of the stem and the key-bit. In parts of the barrel padlock-material (including the push keys), the locks and the keys are classified separately, and these locks are not classified according to formal elements. Still, the terms type and subtype are also used for these items.

Attributes that can amplify the functions of the objects, practically and symbolically, such as more or less complicated locking mechanisms and décor, are analysed separately. The raw material played an important role with regard to how secure and durable the locks and keys were, but may also reflect symbolic aspects. The raw materials represented are iron, wood, bone/antler and different copper alloys. Here, I use the terms copper, bronze and brass only when the metal has been defined as such in earlier studies, as a correct definition of the alloy is difficult to define based on the visual appearance (pers. info. Jo Willey 2006). In the undefined cases, I therefore use the term copper alloy, and in some cases mention which type of alloy it might be.

Only the confirmed objects are counted in the figures, while the probable and uncertain categories are mentioned in the text when represented.

Classification

Firm locks, main group A

A firm lock is, as the name indicates, firmly fastened on the inside or outside of a door, or on chests or caskets. The main principle is a bolt that functions as a blocking device, which has to be pulled aside to open the lock. If the lock is fastened on the inside of the door, the key must be put into a hole in the door/chest from the outside. Firm locks can be divided into three subgroups based on the locking mechanism: pulling locks, turning locks and pin tumbler locks. Both locks and keys in the category of firm locks are denoted with a capital A, and subgroups with numbers (Table 3.1).

Function	A													
	A1				A2									A3
Form	A1.1	A1.2	A1.3		A2.1	A2.2				A2.3				A2.4	
			A1.3.1	A1.3.2	A2.1.6	A2.2.2	A2.2.3	A2.2.4	A2.2.5	A2.3.1	A2.3.3	A2.3.4	A2.3.5	A2.4.2	

TABLE 3.1 **Firm locks, main group A. Form- and function categories.**

Pulling lock with hooked key – Subgroup A1

The pulling lock consists basically of a bolt, often made of wood and fastened to a door with cramps (Fig. 3.2). The bolt can be plain, or it might have blocking springs that must be neutralised with the key. Two more or less fragmented but confirmed locks of this type are represented in my assemblage, both made of iron. One lock, similar to Petersen 1951, Figure 248, has probably been fastened to a chest or casket. The other is a front panel of this type of lock.

The keys to this type of locks are denoted hooked keys, due to their shape. There are 23 confirmed, 6 probable and 1 uncertain keys of this type in my assemblage. The stem, sometimes together with the key-bit, constitutes the largest part of the key. The handle is a small ring or a hook at the far end of the stem (Fig. 3.3). When unlocking, the key is put into the key-hole, and in the simplest form the key catches a notch or tap on the upper side of the bolt and then moves the bolt out of its locked position (cf. Fig. 3.2). Unlocking can also be done by two movements; (1) neutralising the springs with the

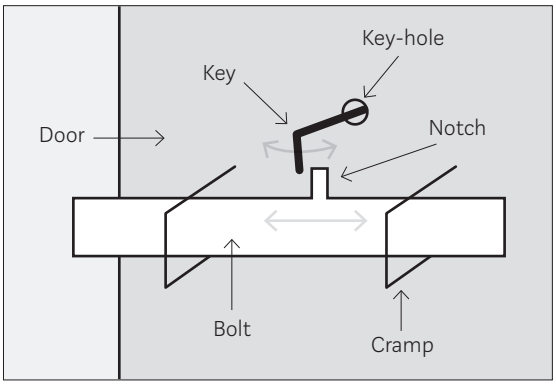


FIGURE 3.2 **Sketch showing the different parts of the pulling lock.**

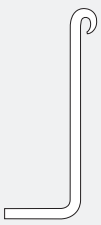
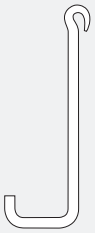
Keys in subgroup A1, hooked keys			
A1	Type A1.1	Type A1.2	Type A1.3
Hooked keys that cannot be classified further			
4	1	4	14
Confirmed keys in total 23			

FIGURE 3.3
The key types in subgroup A1.

key and (2) manually moving the bolt. The keys can be divided into three types based on form (Fig. 3.3), sometimes with subtypes according to key-bits. Three confirmed and two probable hooked keys could not be divided further into subtypes. Seven keys and two locks were not retrieved in the store rooms, and are classified according to information in the finds catalogue.

Of the 23 confirmed hooked keys, 22 were made of iron. Information on the last hooked key is only based on the finds catalogue, as it was not retrieved during the examination. The six confirmed pulling locks, including the three remains of locks on chests/caskets, are also made of iron. Three of them were not retrieved during the examination, and the information is based on the finds catalogue.

The length of the complete hooked keys varies from 8 to 15.6 cm, and no sizes seem to be more common than others. Four confirmed hooked keys were not retrieved.

Only one pulling lock seems to be complete. Being 10 cm long, it has probably been fastened on a chest/casket.

Type A1.1

The hooked key is in its simplest form shaped like a capital 'L', where the short part is the key-bit (Fig. 3.3). This key can be compared to Rygh, Fig. 162. Only one confirmed and another probable key of this type are represented in the material. Locks belonging to type A1.1 do not exist in the assemblage, probably because of the large size of this lock, the fact that the locking bolt was often made of wood, and that the parts are difficult to identify.

Type A1.2

This key type has the same basic shape as type A1.1, except that the end of the key-bit is bent upwards (Fig. 3.3). The type is identical with Petersen 1951, Figs. 255 and 256. Four

confirmed keys and one probable of this type are represented. The type has been used on pulling locks with several holes in the bolt for the key and possibly springs, probably fastened on chests/caskets (Andersen et al. 1971: 184). This type of lock is, however, not represented in the assemblage, probably for the same reason as for locks of type A1.1.

Type A1.3

Key type A1.3, with a bein the stem right in front of the key-bit (Fig. 3.3), was used on chests/caskets (*KLNM XI*: 57–58). It can be divided into two subtypes; A1.3.1 without teeth on the key-bit, and A1.3.2 with teeth. A1.3.1 concurs with Rygh, Figs. 161/163, and A1.3.2 with Rygh, Fig. 459. In both cases the key is put into the gap between the lid and the front wall of the chest; it then squeezes the springs, and a bolt can be pulled to the side. Disengaging the latch, the lid can be lifted and the chest/casket opens (Fig. 3.4). From burial contexts, locking springs that do not belong to barrel padlocks are interpreted as parts of chests/caskets. Altogether 14 confirmed A1.3-keys are represented in the assemblage, and remains of 13 chests/caskets. Remains of locks have been identified in three of the chests. In addition, two probable and one uncertain key of this type have been found.

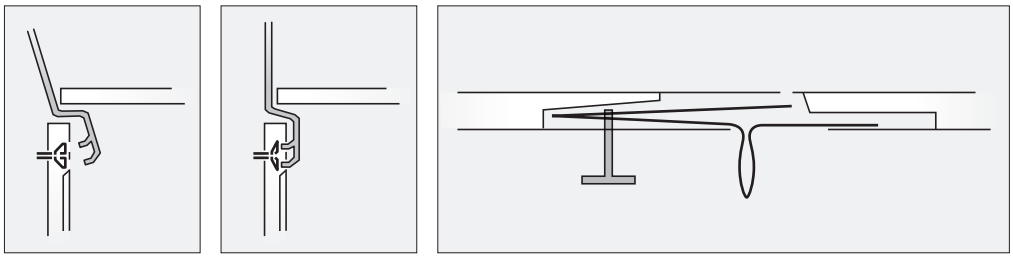


FIGURE 3.4 Principles of opening the lock on a chest/casket with a hooked key (Source: *KLNM XI*: 58). To the right: a sketch of the lock in locked position, as seen from above.

Turning lock with turning key – Subgroup A2

The turning lock is based on the same principles as the pulling lock (cf. Fig. 3.2). It differs in that the bolt is often built into a box, a lock case, and the key is turned around inside this lock case. In addition, most turning locks neutralise the springs and move the bolt in one movement. The turning lock is generally smaller than the pulling lock, and is usually made of iron. The key hole is normally framed on the outside of the door by a front panel of metal (Fig. 3.5). Altogether, six confirmed turning locks are represented in the assemblage, and one front panel. Four of these locks cannot be further divided into types. In addition, there are two probable turning locks, and one probable and one uncertain front panel.

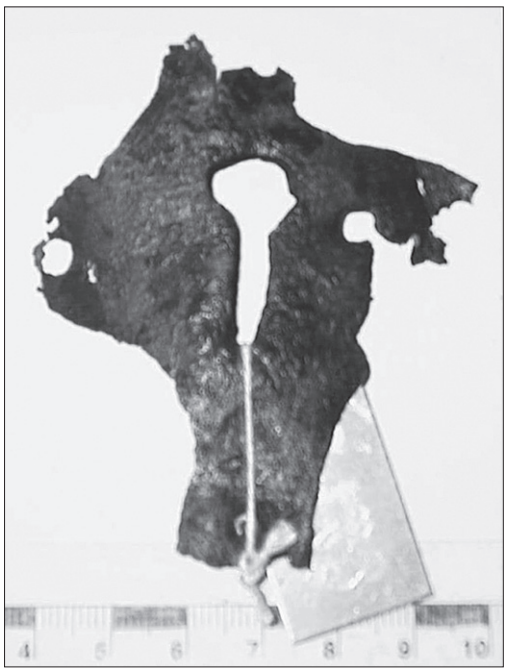


FIGURE 3.5 Front panel of a turning lock. BRM 0/39139.

Three of the confirmed A2-locks measure between 7 and 9 cm in length. The three other locks are 5.6, 14.4 and 33.5 cm long, demonstrating that the size of the turning locks varied considerably. Iron was the most common material: six of the locks are made of iron, and only one of copper. Altogether, the turning keys count 108 confirmed specimens; in addition to three uncertain and six probable ones.

Generally, the handle constitutes one third of the whole key (cf. Fig. 3.1). The key-bit also forms a large part of the key, while the stem is relatively smaller. The turning keys are divided into types based on the shape of the stem and the end of the key-bit (Fig. 3.7), while subtypes are based on the shape of the key-bit (Table 3.1). An exception is key type A2.1, differing from the other types in the relative size of the handle. Eleven confirmed, six probable and one uncertain turning key cannot be further subdivided into types. The shape of the key-bit could be identified as for 58 turning keys, of which six different key-bits could be identified: key-bits without teeth, key-bits with teeth on one, two or three sides, N-shaped key-bits and key-bits with knobs (Fig. 3.6).

Of the 108 turning keys, 71 are preserved in their complete length, or the length could be calculated, varying from 2.6 to 19.3 cm. I have divided the A2-keys into three length groups; small keys (2–8 cm), medium-sized keys (8.1–14 cm) and large keys (14.1–20 cm). The size varies between the different key types.

Type A2.1

On type A2.1, corresponding to Rygh, Fig 454 (cf. Fig. 3.6), the handle constitutes more than one third of its total length. It fits into a simple, tiny turning lock with a spring, and is only turned halfway around in the lock case, not all the way around as the other A2-types. The key-bit lifts a blocking device, and by pulling the key sideways one also pulls the bolt, opening the lock. The assemblage comprises five confirmed keys of this type, while locks of type A2.1 have not been found. All five are

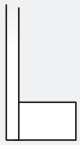
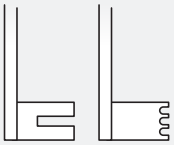
Key-bit without teeth	Key-bit with teeth on one side	Key-bit with teeth on two sides	Key-bit with teeth on three sides	N-shaped key-bit	Key-bit with knobs
					

FIGURE 3.6 The different key-bit-shapes on the A2-keys

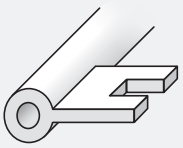
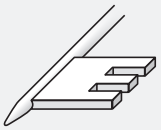
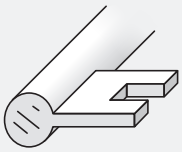
Keys in subgroup A2, turning keys				
A2	A2.1	A2.2	A2.3	A2.4
Turning keys that cannot be classified further				
11	5	63	26	3
Confirmed turning keys in total 108				

FIGURE 3.7 The key types in subgroup A2. The shape of the handle on type A2.1 is random.

made of bronze. The shape of the key-bit is only documented for two of these keys, both shaped like a triangle, with knobs at the far end (Fig. 3.5). The keys of type A2.1 seem to have had a rather standardized size. They are all small, c. 4–6 cm long.

Type A2.2

This key type is characterised by its hollow stem (Fig. 3.6). It has been used on lock type A2.2 with a directing pin inside the lock case, where the hollow stem fits onto the pin that controls its movement. There are 63 confirmed specimens of this key type in the assemblage, and one uncertain, plus one confirmed lock of type A2.2. Altogether 60 of the A2.2-keys are made of iron, one is made of bronze and two of copper alloy. Several of the A2.2-keys could not be divided into subtypes as the key-bit is missing. Seven keys of this type have key-bits with teeth on one side. Sixteen keys have key-bits with teeth on two sides, and 12 on three sides. Two keys have N-shaped key-bits. The keys of type A2.2 vary in length from 2.6 to 10.3 cm, where the large keys are most common. Both the smallest and the largest key in the total material are of this type.

Type A2.3

This key type is characterised by a projecting tip in the end of the stem (Fig. 3.6). It has been used on lock type A2.3, which has a hole in the rear end of the lock case that the tip of the key fits into. This type is represented with 26 confirmed keys and one uncertain, plus two confirmed locks. 24 keys are made of iron, one is made of bone/antler, and one of bronze. Two keys of type A2.3 have key-bits without teeth. Five keys have key-bits with teeth on two sides, and three keys have teeth on three sides. Seven A2.3-keys have N-shaped key-bits. The A2.3 keys vary in length from 4 to 14.9 cm. The most common length is 6 to 8 cm (6 keys).

Type A2.4

The keys of type A2.4 have blunt stem-ends (Fig. 3.6). There are three confirmed specimens of this type, all made of iron. The key has probably been used on locks without any directing device in the lock case, but it might also have been used on lock type A2.3. There are no confirmed locks of type A2.4 in the assemblage. For two of the keys, the shape of the key-bit could be identified, both with teeth on one side. Key type A2.4 ranges from 7.9 to 13.4 cm in length.

Brief summary of the keys in subgroup A2

Key type A2.2, which counts 63 confirmed specimens, is clearly the most common turning key. It is also the type that varies most in size (Fig. 3.8). Half of them are large (14.1–20 cm), and with fairly few small keys (2–8 cm).

Type A2.3, being the second most common turning key, counts 26 confirmed specimens. All the three length groups are represented; half of them are medium-sized, 8.1–14 cm. Only three A2.3-keys can be denoted as large keys. Of the turning keys as a whole, A2.1 is the smallest, while A2.4 represents the most homogenous type, with medium-sized keys only.

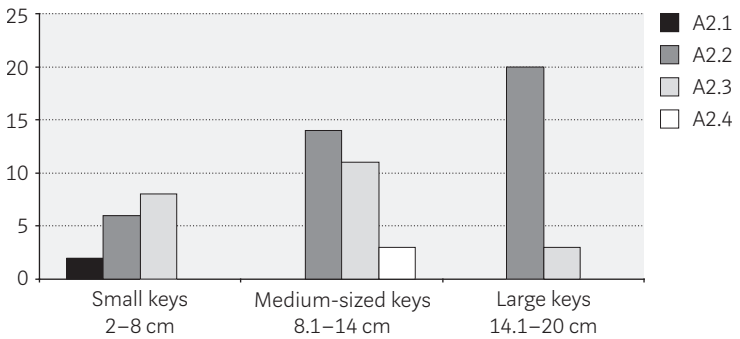


FIGURE 3.8 The length of the key types in subgroup A2. N=67.

The areas of use for the turning keys based on size are very vague. Keys with a size up to c. 4 cm have been interpreted as belonging to caskets (Ward-Perkins 1940: 144). Keys belonging to chests were probably larger, as the normal size of a chest lid according to the by-law issued in Bergen in 1282 was equal to 110.6x55.3 cm in modern measurement (*NgL III*: 15; Helle 1982: 435). It has been suggested that the size of chest keys was generally shorter than 6 cm (*KLNM XII*: 471). Here, I interpret turning keys from 2 to 8 cm as belonging to chests and caskets, while larger turning keys are interpreted as keys for door locks.

Only one key is shorter than 4 cm, while 15 keys are 4–8 cm. These small turning keys may also belong to the padlock of subgroup B2. It has been claimed that keys belonging to door locks often were longer than 20 cm (ibid.). I therefore interpret medium-sized and large keys as keys for door locks.

The general size of the turning keys suggests that most of them have belonged to door locks. Most of these keys are medium-sized, 8.1–14 cm (28 keys), and large, 14.1–20 cm (23 keys).

The shapes of the key-bits also differ among the types. Generally, the key types A2.2 and A2.3 are most diverse, each represented by four different key-bit shapes. Sixteen keys of type A2.2 have key-bits with teeth on two sides. Thus, this is the most frequent key-bit shape on this type.

Key-bits without teeth and key-bits with knobs are the least common shapes, only represented on two keys each (Fig. 3.9). Key-bits without teeth have only been found on key type A2.3 and key-bits with knobs only on key type A2.1. The latter is also the only key-bit shape on type A2.1 in the assemblage. A third A2.1-key may possibly have had the same shape. Of the remaining key-bit shapes, key-bits with teeth on two and three sides are the most common: 21 and 15 keys respectively (Fig. 3.9), and are only documented on key types A2.2 and A2.3. Also, the N-shaped key-bit is only

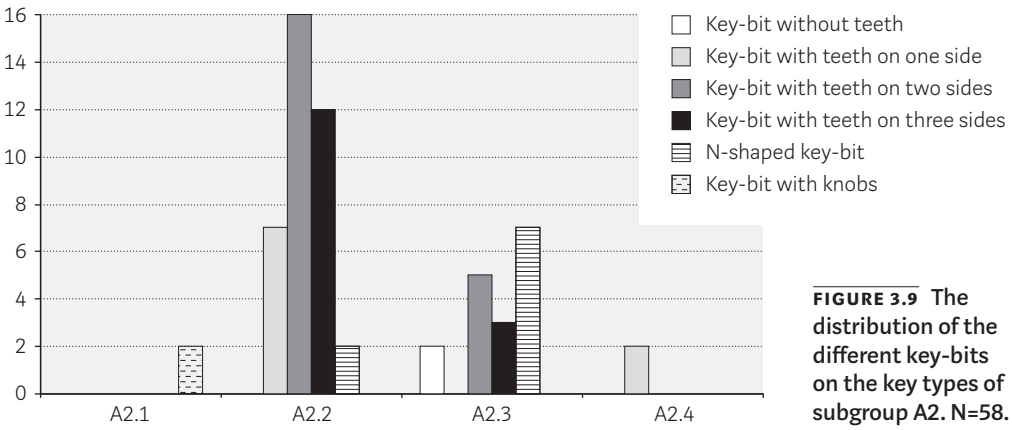


FIGURE 3.9 The distribution of the different key-bits on the key types of subgroup A2. N=58.

documented on these key types, whereas key-bits with teeth on one side are only documented on key types A2.2 and A2.4. On key type A2.3, the N-shaped key-bit is the most common.

More detailed key-bit shapes; key-bits where the teeth might be shaped as much for appearance as for technicality, are documented on 28 turning keys in the assemblage. These keys are all of the types A2.2 (21 keys) and A2.3 (7 keys). The details tend to be tiny and fragile, making the key-bits more vulnerable to wear. One of the details is pierced three-leaf clovers or approximate three-leaf clovers on the bit. Keys with this shape are documented in 15 specimens in the assemblage. Thirteen keys have other detailed shapes, like T- or L-shaped teeth.

Of the 108 turning keys, seven are made of bronze, two are made of a copper alloy, and one is made of bone, while the remaining 98, on average 90 per cent of all the turning keys in the assemblage, are made of iron.

Pin tumbler lock with key, subgroup A3

This lock type is placed on the outside of the door, and the bolt must be pulled out all the way before opening. Both the lock and the key are most often made of wood. The lock consists of pins placed in notches in the bolt (Fig. 3.10). The key lifts the pins and releases the bolt. There are no confirmed parts of this lock type in the assemblage, but there is one probable key. It is 10.4 cm long and made of wood.

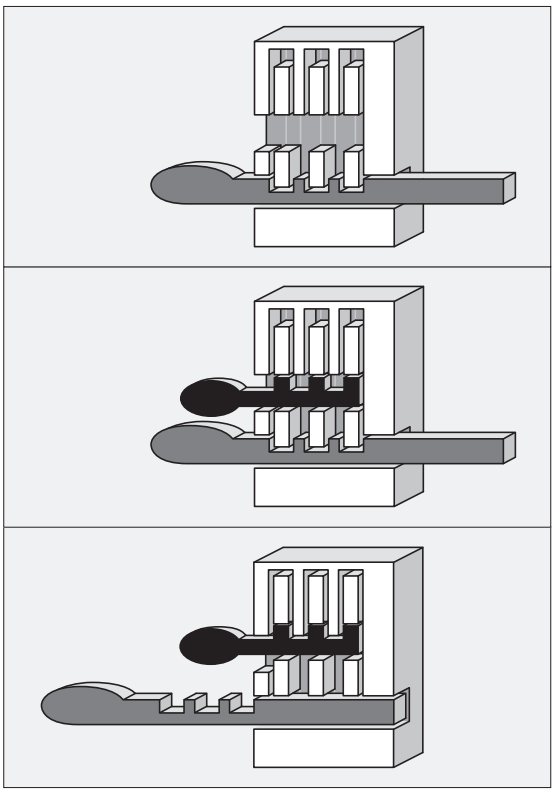


FIGURE 3.10 Sketch showing disengagement of a pin tumbler lock.

Portable locks – main group B

The main principle of this type of lock is that one needs cramps or chains in addition to the lock itself (Jakobsen 1991: 125). Portable locks can thus be used to lock most things. In the function category portable locks, both keys and locks are named with a B, and are sub grouped with numbers (Table 3.2). The barrel padlock of type B1.2 is, as mentioned, classified separately and not together with the keys. Shape elements are therefore not included in the main classification of this type.

Portable locks can be divided into two subgroups based on the locking mechanism: barrel padlock with push key and portable lock with turning lock mechanism. Two probable and two uncertain loops for the padlocks cannot be classified further.

<table>
<tr><td rowspan="6">Function</td><td colspan="12">B</td></tr>
<tr><td colspan="10">B1</td><td colspan="2" rowspan="5">B2</td></tr>
<tr><td colspan="3" rowspan="4">B1.1</td><td colspan="7">B1.2</td></tr>
<tr><td colspan="5" rowspan="3">B1.2 key</td><td colspan="5">B1.2 lock</td></tr>
<tr><td colspan="3">B1.2.1</td><td rowspan="2">B1.2.2</td><td rowspan="2">B1.2.3</td></tr>
<tr><td>B1.2.1.1</td><td>B1.2.1.2</td></tr>
<tr><td>Form</td><td>B1.1.1</td><td>B1.1.2</td><td>B1.1.3</td><td colspan="2">B1.2.1</td><td colspan="2">B1.2.2</td><td>B1.2.3</td><td colspan="3"></td><td>B2.1</td><td>B2.2</td></tr>
<tr><td></td><td></td><td></td><td>B1.2.1.1</td><td>B1.2.1.2</td><td>B1.2.2.1</td><td>B1.2.2.2</td><td></td><td colspan="3"></td><td></td><td></td></tr>
</table>

TABLE 3.2 Portable locks, main group B. Form- and function categories.

Subgroup B1, barrel padlock with push key

The barrel padlock consists of two parts, the *bolt* (black on Fig. 3.11) and the *lock case,* that are completely separated when unlocking (Blomquist 1940: 62).

The lock bolt has one or several *springs* that fit into holes in the gable of the lock case, blocking for disengaging. The key, then, functions as a push key. It is put into the lock case from the end of the bolt, fits around the bolt and the blocking spring/springs inside the lock case and squeezes these, so that the lock bolt can be removed and the lock is opened. A directing pin can be placed either on the locking bolt or in the lock case. This fits into a hole on the key, easing the unlocking operation. Directing pins can also make the lock more complicated and secure, but the number of springs is more important with regard to security. One spring that needs to be

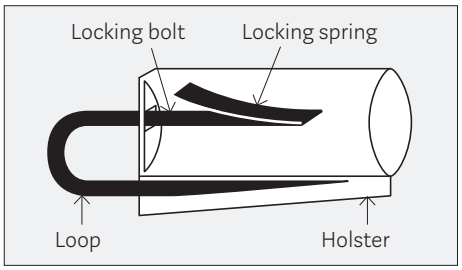


FIGURE 3.11 Sketch showing a simple barrel padlock. Source: Blomquist 1940.

neutralised gives a less secure lock than four springs that need to be neutralised simultaneously. The construction of the key often makes it possible to both squeeze the springs and push the bolt out of the lock case in one movement. Like the hooked key (A1), the handle of the push key is most often only a ring at the end of the stem. The stem and the key-bit, then, comprise the largest part of the key.

There are 56 confirmed barrel padlocks, 22 confirmed lock bolts and 43 confirmed push keys in the assemblage. Thirteen of the locks and two of the keys cannot be classified further. Additionally, there are one uncertain and four probable push keys, two uncertain and two probable locks as well as two probable lock bolts. The uncertain key and one probable key cannot be further divided into types.

Only three of the barrel padlocks were found with their belonging bolts. Most often, the barrel padlocks are found as either lock case or bolt. Thus, the number of locks can easily be misguiding. In the further classification, all the bolts are counted separately, since it is not possible to link locks and bolts if they have not been found together. Twelve confirmed and two probable bolts cannot be classified further. Lock bolts belonging to lock B1.1 are difficult to distinguish from bolts belonging to lock B1.2.1.1 and are therefore included in the before mentioned group.

Out of the 56 barrel padlocks, 27 are complete and 29 are more or less fragmented. The two complete barrel padlocks that cannot be classified further than to subgroup B1 measure between 4 and 5 cm in length. The barrel padlocks are divided into two length groups, the shortest 4–7 cm and the longest 7.1–10 cm. The push keys are divided into three length groups: (1) small keys, 4–8 cm long, (2) medium sized keys, 8.1–12 cm, and (3) large push keys, 12.1–18 cm in length. Two keys cannot be divided further than at subgroup level. Both are made of iron.

With regard to raw material, the barrel padlocks and the push keys are both made of iron and different types of copper alloys, or of iron covered with copper alloy. On the barrel padlocks, copper alloy covers the outside and to a lesser degree the inside, as a kind of décor, giving the locks a nice surface, although it may also have been to prevent corrosion (Jakobsen 1991: 135–136).

Type B1.1

Lock type B1.1 has a slit for the key along the whole lock case (Fig. 3.12). The bolt is U-shaped. When locking, the bolt-end with springs is placed inside the lock case, while the opposite end of the lock bolt is placed in a holster on the outside of the lock case (Fig. 3.12). On key type B1.1, the key-bit is placed in the same direction as the stem (Fig. 3.17).

Type B1.1 comprises five confirmed locks, three of which are complete. Two are of the smallest size, 4–7 cm, and one is of the largest size, 7.1–10 cm. One of the locks seems to have had two springs on the bolt.

Altogether, there are 13 confirmed keys and one probable of type B1.1, which can be divided into three subtypes based on the shape of the key-bit (Table 3.2). Key type B1.1.2, with a square-shaped key-bit, probably belonged to a lock with square/trapezoid shaped lock case (Andersen, Crabb, Madsen 1971: 187). This lock type has not been identified in my assemblage.

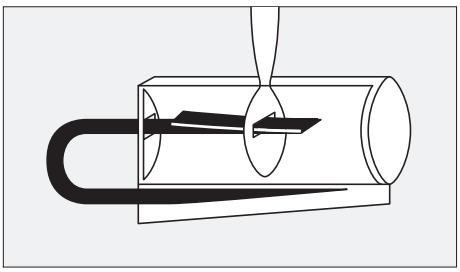


FIGURE 3.12 Sketch showing how to unlock type B1.1.

The B1.1-keys are from 4.9 to 12.8 cm in length. Five of them are not complete. The shape of the key-bit is more and less complex. Of the twelve B1.1-keys with the key-bit preserved, six keys are made for a bolt with one locking spring, three keys for a bolt with two springs, one key for at least two springs, one key for maximum two springs, and one key is probably made for four springs.

Most of the B1.1-keys, 12 specimens, are made of iron, of which one seems to have been covered with copper alloy. One key is made of bronze. Two of the B1.1-locks are made of iron, one of copper alloy, and one probably of iron with a cover of copper alloy.

Type B1.2

Lock type B1.2 has no slit for the key. The key hole is at the gable, and the key is led horizontally into the lock, parallel with the locking bolt (Fig. 3.13). The division into subtypes of locks is based on the locking bolt and the loop, and how these are fastened to the lock.

There are 28 confirmed specimens of lock type B1.2 in the assemblage, but only few can be identified as for subtypes of B1.2-locks, and the keys are presented separately. One uncertain lock cannot be divided further. First, I present the three subtypes of locks.

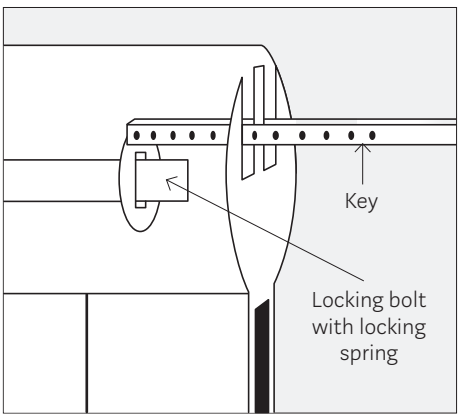


FIGURE 3.13 Lock type B1.2.

Lock, subtype B1.2.1

The lock bolt here is connected with the loop, as with lock type B1.1. The subtype counts 34 confirmed locks and one uncertain lock. Two of the locks cannot be classified further. The lock appears in two variations: B1.2.1.1 has a holster for placing the

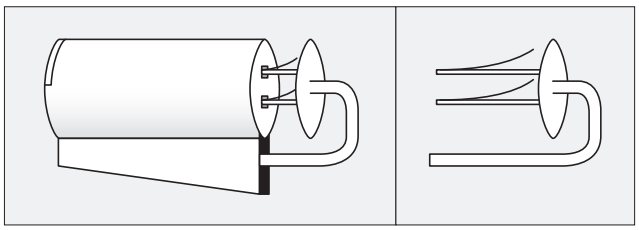


FIGURE 3.14
Lock B1.2.1.1 with holster and loop.

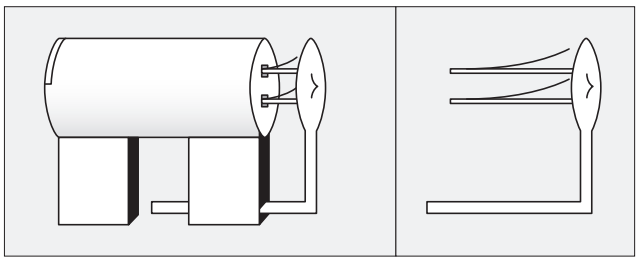


FIGURE 3.15
Lock B1.2.1.2 with extensions.

end of the bolt, and a hook on the bolt to be fastened in a chain or some other device (Fig. 3.14). There are seven confirmed locks of this category and one uncertain. The other specimen, B1.2.1.2, has extensions instead of a holster, making the loop superfluous (Fig. 3.15). The chain or cramps that are used when locking are now placed between the two extensions. Altogether, 25 confirmed locks of this type have been identified, and 9 confirmed lock bolts.

Lock, subtype B1.2.2

For this subtype, the lock bolt is fastened to the lock case with a hinge. The lock is thus without a holster or extensions for the lock bolt (Fig. 3.16). The lock case and the lock bolt are therefore not separated when unlocking, but still, the bolt must be completely removed from the lock case. The assemblage contains three confirmed locks of subtype B1.2.2, three confirmed lock bolts, and additionally, two probable locks.

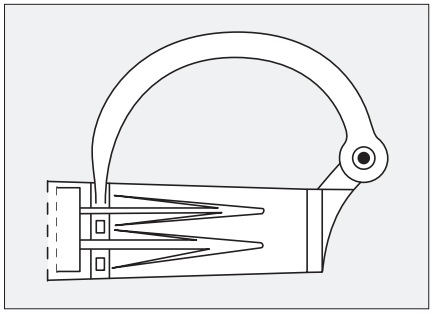


FIGURE 3.16 Lock, subtype B1.2.2. Source: Blomquist 1940.

Lock, subtype B1.2.

The lock bolt of subtype B1.2.3 is L-shaped and is permanently fastened to the lock case. The lock bolt (left on Fig. 3.17) has an opening (lower left) where the end of the loop is placed. Only one lock of this kind has been identified in the assemblage, and one probable lock bolt.

Altogether 22 of the B1.2-locks are complete, or adequately preserved to measure the length from proportions. Of these, fifteen are of the smallest size, 4–7 cm, while seven locks are 7.1–10 cm in length.

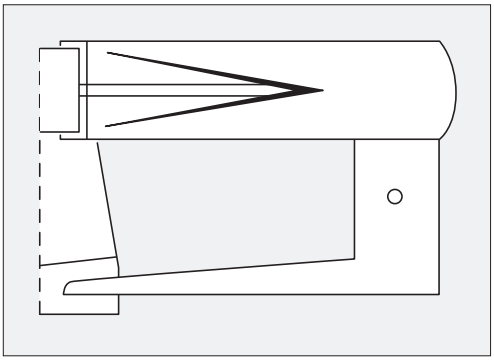


FIGURE 3.17
Lock, subtype B1.2.3. Source: Blomquist 1940.

The keys of type B1.2

Three subtypes, B1.2.1, B1.2.2 and B1.2.3, are identified, based on how the stem and the key-bit are connected. The length of the B1.2-keys varies from 4.9 to 17.4 cm. Most of them (26 keys) are made of iron, one key of a copper alloy, one of brass, and two keys have a cover of copper alloy.

Subtype B1.2.1

The stem on this subtype is bent 90 degrees at the point where the key-bit begins (Fig. 3.18). In some specimens, the stem is divided lengthwise. There are seven keys of this kind in the assemblage. The key-bits are made for one locking spring (3 keys) or two springs (1 key). A variant of this key has a key-bit shaped like two projecting teeth. The lock connected to this key type has a plate placed in the lock case, dividing the case in two. The key, then, must fit into holes in the plate, thus neutralising the springs. This variant is represented by three specimens, but no locks of this kind are identified in the assemblage.

Subtype B1.2.2

Here, the stem is placed centrally on the key-bit (Fig. 3.18). Altogether 16 confirmed keys of this subtype are represented in the assemblage, and two probable. The stem can be divided lengthwise. With regard to the shape of the key-bit, ten of the keys are made for four locking springs, three keys for three springs, one key for two springs, and two keys for at least two locking springs.

Subtype B1.2.3

Key B1.2.3 is without a regular key-bit. Here, tracks along the stem function as a bit (Fig. 3.18). There are two keys of this kind in the assemblage; one is made for at least two locking springs, and the other for at least three.

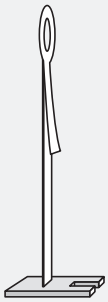
Keys in subgroup B1, push keys					
B1	B1.1	B1.2	B1.2.1	B1.2.2	B1.2.3
Push keys that cannot be classified further		Push keys of type B1.2 that cannot be classified further			
2	13	3	7	16	2
Push keys in total 43					

FIGURE 3.18 **Distribution of the key types in subgroup B1 (the key-bit shown on B1.1 and B1.2.1/2 is random).**

Summary subgroup B1

The analysis shows that key type B1.2 is the most numerous variant, counting 28 keys, while type B1.1 counts less than half of this, represented by 13 confirmed specimens (Fig. 3.19). There are also differences between the two types as for size (Fig. 3.19).

Generally, type B1.1 is smaller than type B1.2. Type B1.1 is represented in all the three length groups, but the medium sized keys are more numerous, while the large ones are fewest. Type B1.2 is dominated by medium sized keys, 8.1–12 cm (13 of 23 keys). The medium sized push keys also represent the most numerous length group.

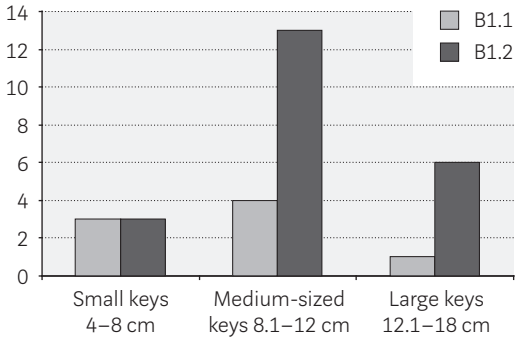


FIGURE 3.19 **The lengths of the push keys; types B1.1 and B1.2. N=30.**

Of the locks, B1.2 is the most common with 51 out of 56 barrel padlocks (Fig. 3.20). Only one B1.1-lock can be denoted as large, and two as small. The B1.2-lock is represented by 15 small specimens and seven large ones. Barrel padlocks measuring 4–6 cm are the most common in the assemblage.

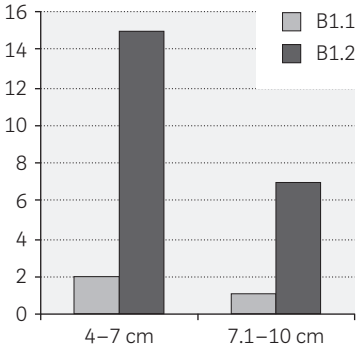


FIGURE 3.20 The lengths of the locks of types B1.1 and B1.2. N=25.

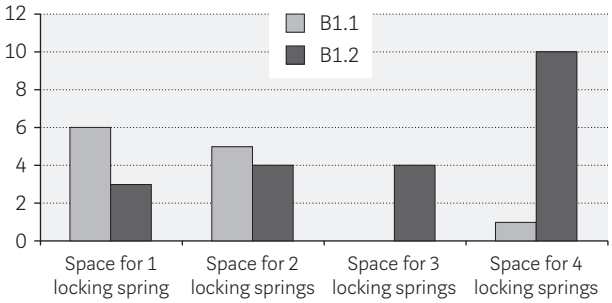


FIGURE 3.21 The bit shapes on the types of the B1-keys. N=32.

There are also differences in the key-bits within the two subgroups of B1-keys (Fig. 3.21). In subgroup B1.1, most keys fit bolts with only one locking spring, and only one key fits bolts with more than two springs. This is in opposition to most keys of subgroup B1.2 that fit bolts with four locking springs. Key-bits made for one, two and three locking springs are fewer; only half as many. Three of eight B1.1-keys also have a hole for a directing pin, while only five of 22 B1.2-keys do.

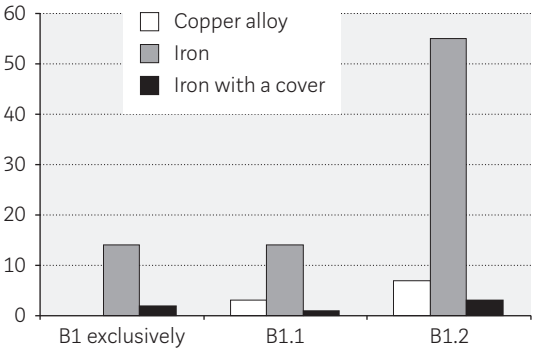


FIGURE 3.22 Distribution of the material used to make the B1 locks and keys. N=99.

As for metals, iron is most widely used for both locks and keys in subgroup B1, while copper alloys are more seldom. A separate group of iron objects has a cover of copper alloy (Fig. 3.22). As for metals, there is more variation in locks and keys of type B1.2 than in type B1.1.

Portable lock with permanent locking mechanism inside the lock case and turning key – subgroup B2

This lock is opened with a turning key, the locking mechanism is permanently fastened in the lock case, and the loop is hinged to the lock case (Fig. 3.23). The subgroup counts seven confirmed artefacts, three of which with a ball-shaped lock case (B2.1) and four with square-shaped lock case (B2.2). There is also one probable loop.

Keys in this subgroup of locks only differ from other turning keys in size, being smaller. Keys belonging to lock B2 are therefore included in key group A2. All the seven B2-locks are made of iron, measuring between 4 and 8.5 cm in diameter (ball-shaped lock cases) or length.

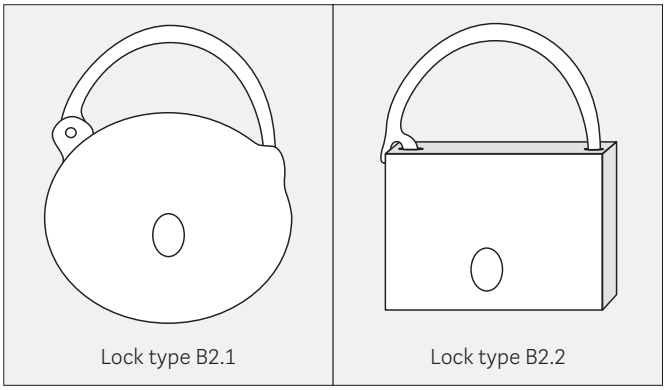


FIGURE 3.23 Lock types B2.1 and B2.2.

Brief summary

In summary, the assemblage counts 282 confirmed, 27 probable and 10 uncertain locks and keys. In the following, I only refer to the confirmed artefacts.

Remains of thirteen chests/caskets have been identified in the assemblage. For only three of these, remains of locks have been identified, and the other ten chests/caskets probably had no locks. The total assemblage thus comprises 272 confirmed objects. Of these, the majority, 144 specimens, belong to group A; permanent locks with keys, including the three chests/caskets with remains of locks. The remaining objects belong to group B; portable locks with keys (Table 3.3). The locks and keys are unevenly spread within the different subgroups. In group A, the pulling locks and the hooked keys, subgroup A1, comprise 29 confirmed artefacts, whereas the turning locks and -keys, subgroup A2, count 115 specimens. Subgroup A2, turning locks and turning keys, thus make out 80 per cent of group A. The representation of keys and locks is also uneven. Group A consists of 13 locks and 131 keys; meaning that locks count only 9 per cent of the artefacts in this group. In subgroups A1, A2 and B2, the number of locks is also relatively low; six, seven and seven locks respectively.

The barrel padlocks of subgroup B1 comprise 121 out of the 128 confirmed objects, or a total of 95 per cent. Of this total there are 85 locks and 43 keys. The locks thus constitute nearly two thirds of the total. The dominance of subgroup B1 is also affected by the fact that keys of subgroup B2 have been included in group A2. In total, portable locks make up close to 90 per cent of all the confirmed locks in the assemblage.

	Keys	Locks
Subgroup A1	23	6
Subgroup A2	108	7
Main group A	131	13
Subgroup B1	43	78
Subgroup B2	0	7
Main group B	43	85
Total	174	98

TABLE 3.3 Keys and locks according to main groups and subgroups.

Another striking feature is the number of keys compared to the number of locks in the two most dominant subgroups, B1 and A2. Eighty per cent of the confirmed locks are barrel padlocks, subgroup B1, but the 43 push keys of subgroup B1 constitute only one fourth of all the keys. The turning keys count 108 confirmed specimens, 62 per cent of all the keys, while the number of turning locks is very low.

Only one object in the assemblage is made of wood, a probable key for the pin tumbler lock (subgroup A3). The keys and locks of the other subgroups, A1, A2, B1 and B2, are mainly made of iron. In subgroup A1 and B2, only iron is used.

In subgroup A2, a total of 104 keys and locks are made of iron, representing 90 per cent of the objects. In subgroup B2, a total of 88 keys and locks are made of iron, 89 per cent of the objects. The other keys are made of different copper alloys, while one A2-key is made of bone.

With regard to length, the turning lock-material, A2, is the most diverse, with keys varying from 2.6 to 19.3 cm in length. The push keys also vary in length, from 5.4 to 17.4 cm, while the locks are from 4.3 to 9.9 cm long. The hooked keys, subgroup A1, are more homogenous in length, measuring from 8 to 15.6 cm.

Not all features on the locks and keys are purely functional. Elements of shape may cross the functional elements. To assess the question of style and symbol related to function, I study these elements separately. The issue is discussed in more detail in section 6.

Form and décor

To what degree, then, are arbitrary elements, like shape and décor, connected to the different types and/or groups of locks and keys? And to what degree are such elements connected to functional elements like shape of the key-bit, length and raw material? Here, I assess the different types and subgroups with regard to these issues, focusing on the confirmed artefacts. Probable and uncertain locks and keys are only mentioned in the text when differing from the confirmed.

Hooked keys – subgroup A1

Hooked keys are sometimes decorated with incised dots or lines, often covering the whole key (cf. Rygh 1885, Fig. 163). None of the hooked keys in this study are, however, decorated. Since several are rather poorly preserved, this may still be misleading. Likewise, no décor is found on the six pulling locks. As these locks to a large degree belong to chests/caskets, the lock itself would be more or less invisible. When decorated, the décor is placed on the front panel that frames the key hole on the outside of the chest/casket. In my assemblage, no front panel of this type is represented.

Turning keys – subgroup A2

Subgroup A2 makes up 42 per cent of all the confirmed locks and keys. Keys within this subgroup can be decorated both on the key-bit, the stem and the handle, and vary considerably in appearance and size. Like locks in subgroup A1, they are only decorated on the front panel; the visible part of the lock on the outside of the door or chest. Only one of the seven confirmed turning locks is decorated. It seems to have been fastened on the outside of the locking device. The front panel here is a part of the lock itself, and has an incised cross at the front.

On the turning key, with a handle that in most cases comprises about one third of the total length of the key, décor tends to be placed on the bow, but the stem is often also decorated. The key-bit can be shaped in a way that is not purely technical, but this is difficult to define. Now, I focus on the shapes of the bows, distinguishing roughly between four bow-shapes; circle-, pear-, kidney- and square-shaped (Fig. 3.24), and one unspecified category.

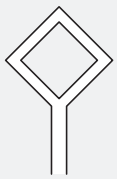
Pear-shape	Circle-shape	Kidney-shape	Square-shape	Other shapes	Undefined or uncertain
					
2	63	8	3	2	30

FIGURE 3.24 The different bow-shapes on the A2-keys.

In addition, or regardless of the bow-shapes, the turning keys can be decorated in different ways. I distinguish between six elements as for shape and a seventh for unspecified décor that does not fit into the six (Fig. 3.25). The six elements are: (1) line-décor and (2) dot-décor, both can be incised on the key-bit, stem and bow, (3) a bulge on the bow and/or a ring on the transition between stem and bow, (4) pointed tip inside the bow or on top of the bow, (5) bow with décor inside the ring, and (6) pearl décor. The different elements can be combined.

Eleven confirmed keys of subgroup A2 cannot be classified further. These either have a circle-shaped (5 keys) or kidney-shaped (1 key) bow. The remaining keys are indefinable with regard to shape of the bow. One is decorated with a pointed tip on top of the bow, and another is possibly decorated with a pointed tip inside the bow.

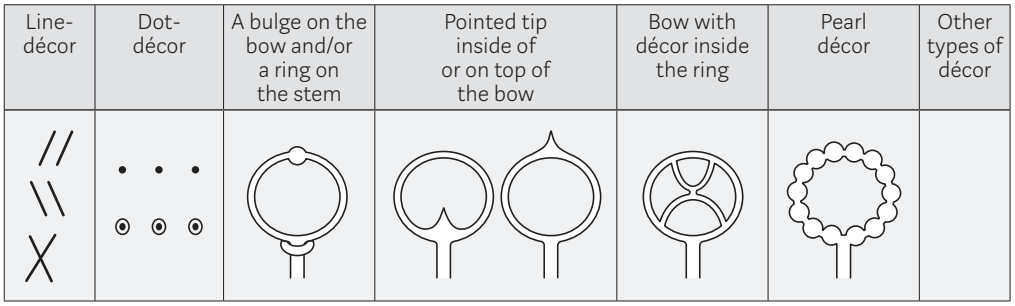


FIGURE 3.25 The six different elements of décor on the A2-keys.

Type A2.1

Types A2.1 and A2.2 demonstrate a diverse assortment of bow forms. Of five confirmed keys of type A2.1, two have pear-shaped bows, and three are circle-shaped. All of them are decorated. The keys with circle-shaped bows all have filled bows, and two of them have a zoo-morph décor in the shape of an animal in the centre of the bow, while the ring itself has pearl décor. The third key has a triangular bow form, possibly a stylised deer. One of the two keys with pear-shaped bow also has a filled bow, shaped like a grid. The other is incomplete, but has a human face in the transition zone between the stem and the bow, and incised dots on the bow, thus combining two elements of décor.

Type A2.2

Of the 63 confirmed A2.2-keys, 42 have circle-shaped bows, three kidney-shaped, one an almost kidney-shaped bow, and one has a square-shaped bow. Seven keys seem to have circle-shaped bows, one possibly a kidney-shaped bow, another either a circle-shaped or a kidney-shaped bow, and the last possibly a square-shaped bow.

Further, two of the A2.2-keys have filled bows. One of these has a four-leaf clover towards the middle of the bow, and a stylised bird on top of the bow. The other key is heavily corroded, but with a bow seemingly shaped like a three-leaf clover.

Five keys are decorated with incised lines, and one key has both dots and lines. Three A2.2-keys are decorated with a ring on the stem or in the joint between the stem and the bow, and two keys have a bulge on the bow. Seven keys have pointed tips on the bow or on top of the bow.

Type A2.3

Of the 26 confirmed keys of type A2.3, 14 have circle-shaped bows, three have kidney-shaped bows and two have square-shaped bows. Eighteen keys have no decoration. Five keys are decorated with pointed tips inside and/or on top of the bow, one of these has a blunt tip. Two keys are decorated with incised lines on the stem, and one

of these also has a bulge on the bow. The other has a keyhole-shaped hole inside the bow. One key has décor in the form of both a ring in the joint between the stem and the bow, and a blunt tip inside the bow.

Type A2.4

All three confirmed keys of this type in the assemblage have circle-shaped bows. One has incised line-décor on the stem, one has a pointed tip inside the bow and a ring in the joint between stem and bow, and the third key is possibly incised with line-décor.

Summary

In summary, the most frequent shape of the handle at all the A2-keys is the circle-shape (Fig. 3.26), altogether 66 of the 80 confirmed A2-keys, i.e. 83 per cent. It is most frequently represented on type A2.2; 41 out of 47 keys with confirmed bow-shapes, altogether 87 per cent of the bow-shapes. A pear-shaped bow is only recorded on key type A2.1, while the square-shaped bow is recorded on both key types A2.2 and A2.3. The shape of the handle, then, does not seem to be made only for appearance, but also for practical reasons, as the circle-shape appears on all the turning keys.

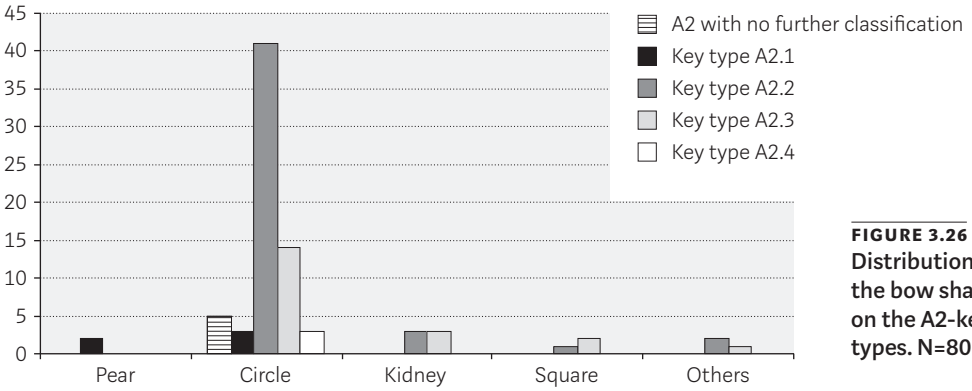


FIGURE 3.26
Distribution of the bow shapes on the A2-key types. N=80.

Of the turning keys that could be classified into types, different elements of décor have been recorded on 35 keys (Fig. 3.27), of which a pointed tip inside or on top of the bow is the most common type of décor, recorded on 13 keys, but only represented on A2.2- and A2.3-keys. Pearl décor is only represented on A2.1-keys. Keys with line-décor are most often of type A2.2.

Some of the A2-keys are more frequently decorated than others. All the A2.1-keys are decorated, and two of the A2.4-keys have décor. However, few specimens of these two key types are represented in the assemblage. Of type A2.2, 21 keys, 33 per cent, are decorated, and ten of the A2.3-keys, 40 per cent.

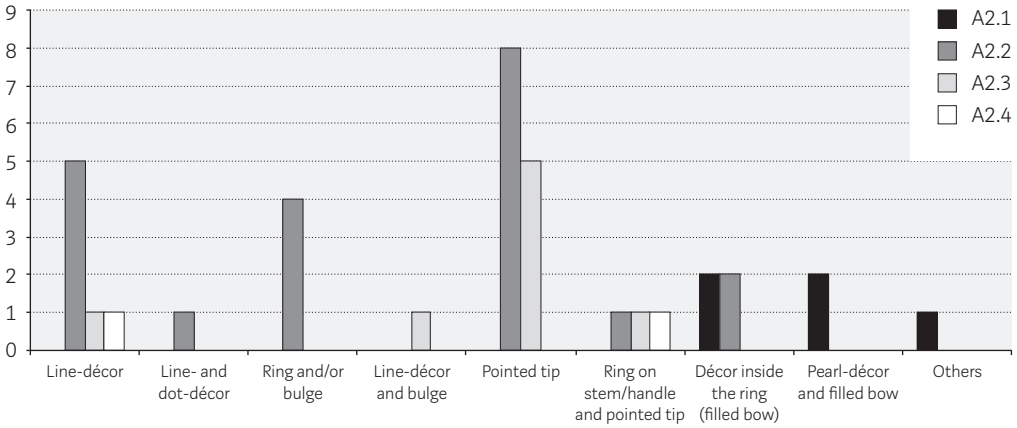


FIGURE 3.27 Distribution of the different elements of décor on the key types of subgroup A2. N=36.

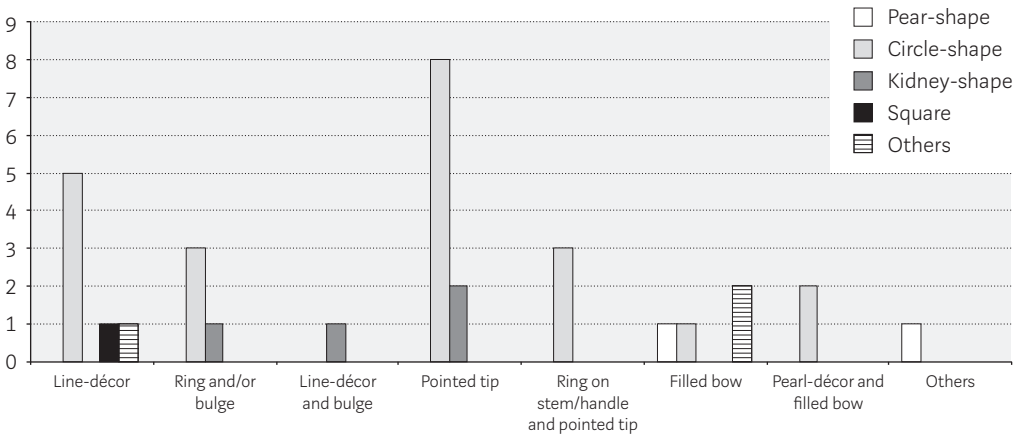


FIGURE 3.28 The elements of form/shape and décor on the A2-keys. N=32.

Generally, the decorated keys most often have circle-shaped bows (Fig. 3.28). The key with a circle-shaped bow is also the most numerous type of turning key. Still, only 21 of the 68 keys with circle-shaped bows, 31 per cent, are decorated. Keys with circle-shaped bows thus are least frequently decorated, which indicates that the bow-shape could be seen as a more functional feature to a larger degree than the other shapes.

The two keys with pear-shaped bows, as well as the three keys with 'other bow shapes', all have décor. Of the seven keys with kidney-shaped bows, four are decorated, and one of the three keys with square-shaped bows is decorated. Keys with kidney-shaped bows are relatively the most frequently decorated keys in the assemblage (57 per cent), although the numbers are low.

Subgroup A3

The one probable key within this subgroup is not decorated.

Subgroup B1

The elements of décor documented on the locks in subgroup B1 are rims on the lock case and/or incised lines (Fig. 3.29). The rims have probably also served to reinforce the lock case.

Thirteen barrel padlocks could not be divided further than to subgroup B1. Eight of these are decorated with rims on the lock case, one with wave-shaped rims. Three intact lock bolts, or lock bolts with intact springs or loops, belong either to type B1.1 or subtype B1.2.1.1. None of the total 25 lock bolts are decorated.

The bow on the push keys is shaped as a ring at the end of the stem, and does not qualify for being divided into different groups of bow shapes, as the A2-keys. The décor consists of two elements: a bulge in the joint between the stem and/or the bow, and incised lines (Fig. 3.30), elements that can also be combined. Two keys cannot be divided further than subgroup level; one with a bulge in the joint between the stem and the bow.

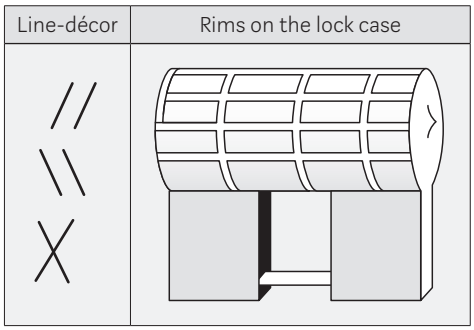


FIGURE 3.29 The elements of décor on the B1-locks.

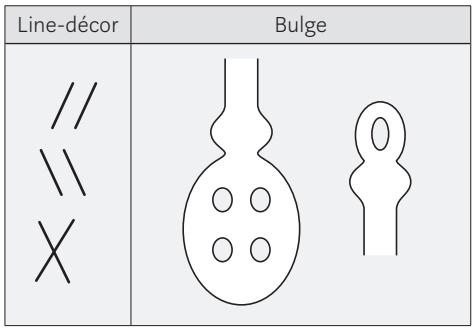


FIGURE 3.30 The elements of décor on the B1-keys.

Type B1.1

Of the 13 confirmed B1.1-keys, seven are decorated: four with a bulge in the joint between stem and bow and/or stem and key-bit, three with incised line-décor at the stem, and two with a string of copper alloy twisted around the stem. There are five locks of type B1.1 in the assemblage: four are decorated with rims on the lock case, and one with wave-shaped rims.

Type B1.2

Of the 28 confirmed B1.2-keys, seven are decorated. Five of them are incised with line-décor on the stem. Of the 38 confirmed locks of type B1.2, 24 are decorated, i.e. 63 per cent. Of these, 21 have rims on the lock case, one has line-décor on the loop, and two have geometrical and plaited décor.

Summary, subgroup B1

The décor, then, varies between the two different B1-keys (Fig. 3.31). B1.1-keys are more often decorated than B1.2, and mostly with bulges, while B1.2-keys are more often decorated with incised lines. Only one key of type B1.1 has line-décor, and no B1.2-keys have a bulge. Two keys of type B1.1 are decorated with a metal thread twisted around the stem. More than half of the 13 B1.1-keys are decorated, whereas only one fourth of the 28 B1.2-keys are decorated.

There are also differences between the two types of barrel padlocks. Four of five of type B1.1 are decorated. Of type B1.2, 25 of 37, or about two thirds, are decorated. In total, 14 of 43, or one third, of the keys in subgroup B1, are decorated, while 35 of the 56 locks have décor, about 63 per cent.

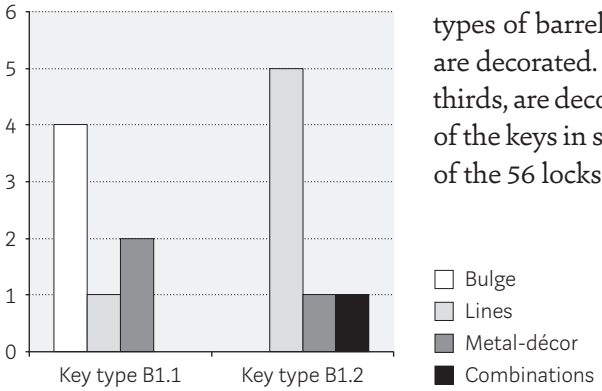


FIGURE 3.31 **Distribution of the elements of décor on the key types of subgroup B1. N=14.**

Subgroup B2

There are seven confirmed locks in this subgroup, none of which are decorated.

Summary

To summarise, subgroup A3 comprises only one probable key, and no locks. Subgroups A1 and B2 are rather uniform with regard to shape, none are decorated and all are made of iron, in opposition to subgroups A2 and B1, where these elements vary. In subgroup A2, one third of a total of 115 are decorated. In subgroup B1, one half of the 99 artefacts are decorated. In this subgroup, metal other than iron has been used most frequently.

Form and function

By comparing the different elements with regard to form and function within the most frequent and varied subgroups, B1 and A2, I want to assess the question of possible functions for these locks and keys. Coherence between the different elements of the keys may reveal different functions. Are form and functional elements emphasised differently in different subgroups of locks and keys?

Subgroup A2

With A2-keys, the shapes of the bows and the length of the keys seem to concur (Fig. 3.32). Only keys with circle-shaped bows are represented in all length groups, but mostly by medium-sized keys. Square-shaped bows are recorded on small and medium-sized keys, whereas pear-shaped and kidney-shaped bows only occur on small keys.

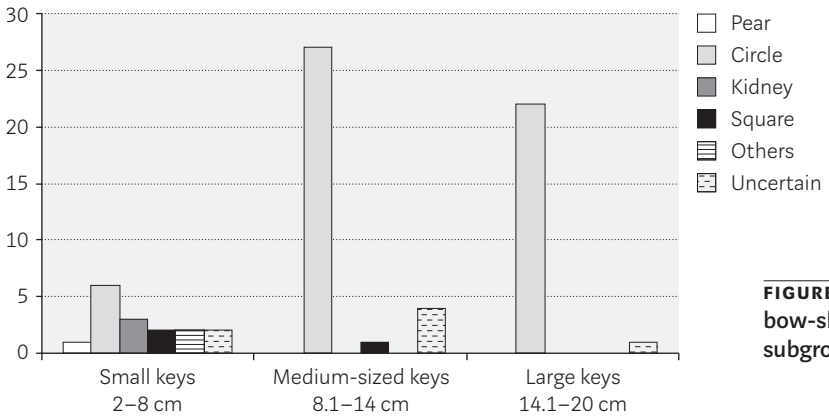


FIGURE 3.32 Length and bow-shapes on keys of subgroup A2. N=71.

The décor on the turning keys also to a certain degree concurs with the length, but as few are represented, the differences may be random. Décor appears more frequently on medium-sized and small turning keys, with ten and nine keys respectively. Décor is least common on the large turning keys, being represented on only six keys. The smallest keys, 2–4 cm in length, have no décor.

Incised lines and pointed tips inside or on top of the bow are the only types of décor that are represented in all length groups. Filled bows occur on small and large keys, but not on the medium-sized keys. The largest turning keys have the most diverse décor, although they are rarely decorated.

The material of which the locks and keys have been made seems to be important both for function and form. Generally, keys made of iron are undecorated, while keys made of copper alloy are more often decorated than not.

The relation between the size of the keys and the key-bits might also shed light on function. The shape of the key-bits reflects the device inside the lock case, and

thus also more/less complicated locking devices. Here, I use a simplified range of the shapes of the key-bits based on the complexity of the locking device.

The bit-shapes I regard as complicated are bits with teeth on three sides, and N-shaped bits. Secondly, I range bits with teeth on two sides. Bits with knobs and bits without teeth are regarded as the least complicated, and bits with teeth on one side as something in between. There is, however, no 1:1-relation between the bit-shape and the degree of complexity as for locking mechanisms. Still, this classification signifies a tendency.

On the smallest turning keys, five of six bit-shapes are recorded (Fig. 3.33). The only shape that is not observed is a bit with teeth on three sides. The different bit-shapes are evenly represented, counting one or two keys respectively.

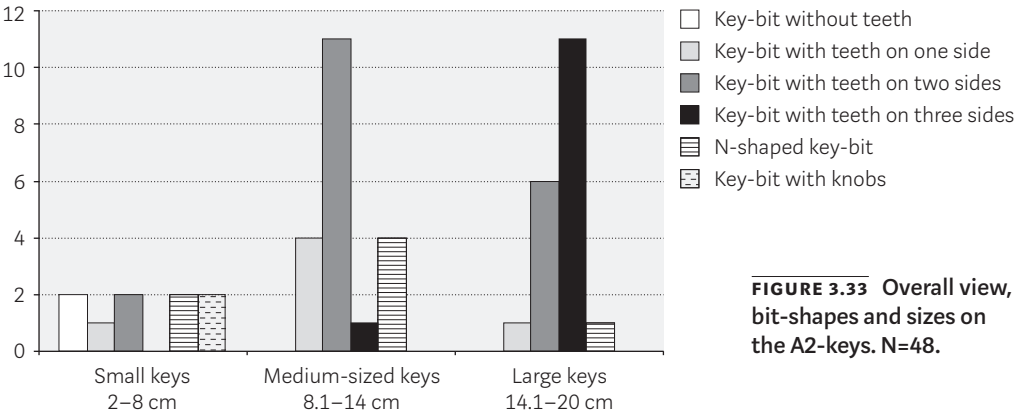


FIGURE 3.33 **Overall view, bit-shapes and sizes on the A2-keys. N=48.**

The medium- and large-sized turning keys are represented by four different bit-shapes: key-bits with teeth on one, two and three sides, and N-shaped bits. The different bit-shapes are still rather unevenly represented within the two length groups. The most notable difference appears in key-bits with teeth on three sides. This bit-shape could be assessed for 11 large keys, and for only one medium-sized. The three remaining bit-shapes are less represented on large keys, especially related to key-bits with teeth on two sides. This is recorded on 11 medium-sized keys and six large ones.

The simplest bit-shapes, the ones without teeth or with knobs, occur on small keys (Fig. 3.33). Such keys are too small for door locks, and must have belonged to caskets or cupboards. A more complicated locking mechanism was evidently less important for these types of locks than for door locks. The more complicated N-shaped bit is still found on one of the small keys, actually the smallest key in the assemblage, signifying that even smaller lockable objects were provided with secure locking mechanisms.

Altogether, eleven of twelve keys with the bit-shape with teeth on three sides occur among the large keys. This bit-shape was probably used for door locks, implying that doors tended to have complicated locking devices. Except for one, these keys are all made of iron. The size also indicates that the doors were most probably big and solid, thus preventing unwanted intruders.

Subgroup B1

Décor and size are, as shown, indicative for the areas of use of the keys. As for the push keys, the smallest are most commonly decorated (four out of nine keys), while the large ones are generally without décor (seven out of eight keys). The medium-sized keys come in a mid position, where half of them are decorated.

Décor is also, as shown for the turning keys, related to raw material. Twelve of 13 of the B1.1-keys are made of iron. As the use-wear in the transition between the stem and the bit is considerable on this key, due to the leading slit in the lock, key type B1.1 is usually made of iron (Jakobsen 1991: 141). The observation is also relevant as for décor, which most often is a bulge in the joint between stem/key-bit or stem/bow. This shape may originally have been made for strengthening this exposed area of the key.

The question of use-wear in the transition stem/key-bit is not as relevant for key type B1.2, and therefore needed not to be made of iron (Jakobsen 1991: 141). Even so, in the assemblage, 26 out of 28 B1.2-keys are made of iron. It is still worthwhile noting that the B1.2-keys are most often decorated with incised lines. Strengthening the key by using bulges obviously was not necessary, as the locking mechanism was gentler on the key. With regard to more/less complex and/or secure locking mechanisms, locks with directing pins, and keys with holes for directing pins, have been recorded in both types B1.1 and B1.2. Locks of type B1.1 are not found with more than two springs. Locks of type B1.2, on the other hand, have up to five springs and two directing pins on the same lock bolt.

The size of the push keys does not seem to be related to the complexity of the bits. With the small keys, space for one locking spring is still most common, while space for four locking springs is the most common with the large keys. The medium-sized push keys are still most numerous in all the bit-groups. Locks with or without décor appear in approximately the same number in both length groups.

Finally, what do these different elements tell about the use of the different locks and keys? Is it possible to decide how secure the different types of locks and keys were, and whether this was related to types of décor or special raw materials?

The analysis indicates that the different lock- and key-groups are more and less complex, also reflecting different technical levels, both for permanent and portable locks. The pulling lock with key, subgroup A1, represents the simplest mechanism of main group A, and was probably not difficult to picklock. The simplest lock of this subgroup

has no blocking devices that the key had to fit into, and the key hole was simply an opening in the door. The key only needed to be of the correct length and have a bend in the correct place. More complex pulling locks had blocking devices on the bolt and keys with several teeth on the key-bit, making it more difficult to picklock. The chest lock, a miniature of the pulling lock, was probably more secure because of its size.

The turning lock, A2, represents a further development of the pulling lock, being more secure and easier to use. It was made more secure by using different types of blocking devices, related to the shape of the key-bit on the turning key. The lock to a simple bit without teeth does not seem to have had any blocking devices. At locks made for key-bits with knobs, the key could only be turned half way around, and the bolt had to be pulled to the side. Still, the lock had a blocking device lifted by the key or otherwise neutralised. Key-bits with teeth on one, two or three sides probably represent locks with varying degrees of blocking devices. The N-shaped key-bit seems to represent a locking mechanism where blocking devices entered on two sides simultaneously.

The different bit-shapes that are represented demonstrate that both simpler and more complicated locking mechanisms have been used. The material they were made of is also closely connected with the shape of the bit. When using sturdier materials, tiny detailed bits could be made, while weaker materials tended to require simpler shapes. This is to a certain degree reflected in the production of turning keys. Bone does not provide a strong material for keys, and the key of bone in my assemblage also has a simple bit-shape with no teeth. As for the turning keys made of copper alloys, the bit without teeth is the only bit not represented.

More elaborate bit-shapes are found at 28 turning keys, all of them types A2.2 (21 specimens) and A2.3 (7 specimens). The fine shape of the teeth makes them extra vulnerable to wear. Of the 15 keys with three-leaf clovers cut in the bit, all but one are made of iron, the other of brass. All the keys with the most elaborate three-leaf clover-shapes are made of iron. Twelve of the 13 keys with other elaborate shapes, such as teeth shaped like a T or an L or others, are made of iron, one of copper alloy. These 28 keys with more elaborate bit-shapes, then, seem to have needed to be made of a sturdy material so that the specially designed teeth should not be broken when in use. However, both the keys made of iron and copper alloys are recorded with all the key-bit shapes.

Of the portable locks, type B1.1 has been the easiest to picklock. The leading slit which runs along the lock case makes the lock vulnerable, and the locks of type B1.2 are also furnished with more springs and directing pins on the bolt than locks of type B1.1. Additionally, only the B1.2-lock has been covered with copper alloy, probably to prevent corrosion, which again would give a more secure and long-lasting lock. The B1.2-locks vary more in size than B1.1, and could therefore be used to lock devices of more varied sizes than type B1.1.

Portable locks with a turning lock mechanism clearly represent the most secure lock in main group B. The locking mechanism is well protected and the key hole is small. The lock is more homogenous than B1, possibly signifying a more standardised area of use.

The locks and keys are, then, mainly made of iron or copper alloys, often bronze. While keys made of bronze tend to have been cast, iron keys were forged, which might result in a more standardised size of the bronze keys. The small turning keys with large bow handles are all made of bronze, and have somewhat similar size, but none of them are identical. The décor on the keys might reflect different social strata with different preferences.

As shown, the assemblage of locks and keys is varied and many-faceted. In a Scandinavian context, the turning locks and keys represent an unexplored field of research, only briefly mentioned in publications. This analysis thus presents new results. The studied barrel padlocks with keys come from urban contexts, but only the finds from the medieval town of Lund seem to be as comprehensive as the Bergen assemblage. Still, the Bergen assemblage does not seem to comprise other types or subtypes of barrel padlocks and push keys than what has been found in other urban contexts.

The turning keys also make up a large group that has only to a small extent been studied in medieval contexts. The Bergen assemblage shows interesting variations in size, décor and the shapes of the key-bits, which I discuss further in section 6.

4 | Dating

Most of the locks and keys from the Viking period stem from graves, where most of the datable finds can be dated within a frame of c. 100 years (Gellein 2007). About half of the assemblage from medieval Bergen derives from the large Bryggen site where the finds are dated according to the fire layer chronology for the area from c. 1120 to c. 1700 with a total of 8 periods (cf. Fig. 1.3 Øye this volume). The other sites from medieval Bergen can also be roughly dated within this chronological framework.

Subgroup A1

Of the 29 confirmed artefacts within subgroup A1 – 6 pulling locks and 23 hooked keys – 27 can be dated. Of these, 25 are from rural contexts: 17 keys and 3 locks are grave goods, and 1 lock, 1 lock panel and 3 keys are from rural settlements. Only 1 key and 1 lock within subgroup A1 are found in the urban context.

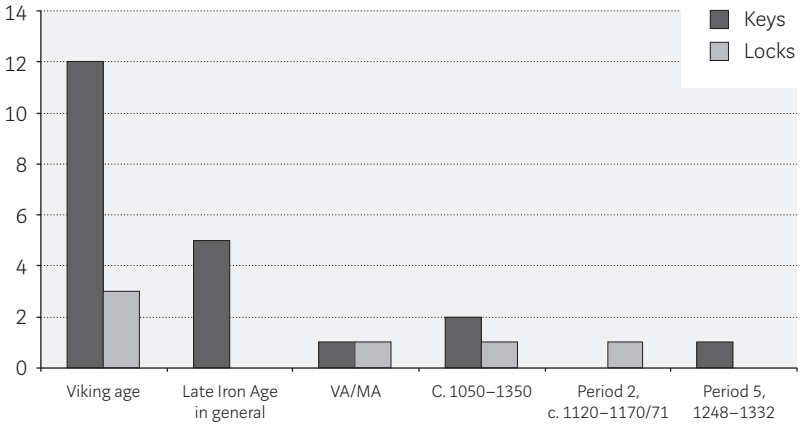


FIGURE 4.1
Dating of the confirmed locks and keys in subgroup A1. N=27.

Twenty objects stem from the Late Iron Age: 17 keys and 3 locks (Fig. 4.1). Of these, 15 are dated to the Viking period: the 800s (2), the 900s (9), and the Viking Age in general (4 keys), while five could not be dated more closely than Late Iron Age in general.

One hooked key and one lock are widely dated to the Late Iron Age/Middle Ages, two hooked keys and one lock are dated c. 1050–1350, and the one A1-key from an urban context is dated to period 5, 1248–1332, while the lock has an early dating to period 2, 1120–1170/71.

Additionally, the one uncertain and four probable hooked keys are widely dated to the Late Iron Age. One probable key from Bergen is post-medieval.

Even though locks and keys of subgroup A1 are relatively few, 11 per cent of the total assemblage, they show a clear chronological pattern: Keys of types A1.2 and A1.3 are only represented in Late Iron Age contexts, while key type A1.1 is only found in medieval contexts. As already demonstrated, A1.1 is associated with door locks, while A1.2 and A1.3 are connected with chests or caskets. Locks and keys in subgroup A1 are not recorded after period 5 (1248–1332) (Fig. 4.2). As type A1.1 is the least numerous in this subgroup it might suggest a more limited use of door locks compared to locking chests/caskets. This may, however, also reflect the find context, being found as personal equipment in burials.

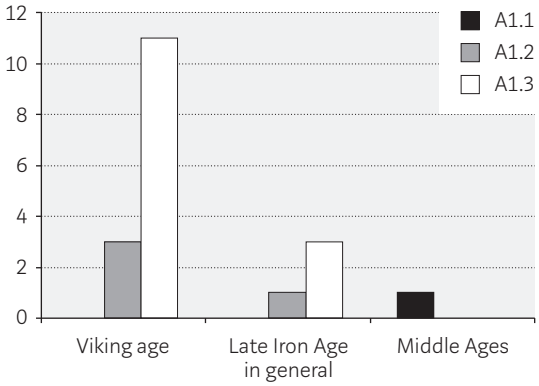


FIGURE 4.2 **Dating of the key types in subgroup A1. N=19.**

Subgroup A2

Subgroup A2, turning locks and keys, consists of 115 confirmed objects; 7 locks and 108 keys. The majority of these, 93 keys and all the locks were found in urban contexts. Eleven keys are from rural contexts, six from graves, and two from possible graves. Two keys were found at Halsnøy convent in the southern part of the county, and one was found at a medieval cemetery in Eidfjord in Hardanger. In total, 93 of the keys in subgroup A2 were found in urban contexts. Altogether, 30 keys and four locks could not be dated according to context.

Of the remaining locks and keys within this subgroup: 78 keys and 3 locks, 72 keys could be divided into types. Two of the locks from Bergen could be dated according to periods 8 and 9, 1476–1520/30 and after 1702 respectively, and one lock is also post-medieval, which could indicate that the turning lock came into use in the Late Middle Ages. The different types of keys within the subgroup do, however, contradict this assumption. The five confirmed keys of type A2.1 are all dated to the Viking period, four to the early Viking period and one broadly to the Viking period in general. As for A2.2, this type is represented in Bergen throughout the Middle Ages from all periods except period 3 (1170/71–1198), most frequently from period 6 (1332–1413) (16 of 46 keys). Type A2.3 is evenly distributed from period 4 (1198–1248) to period 8 (1476–1702). Type A2.4 is only represented by four specimens, of which two are dated to period 6 (1332–1413). It seems, then, that locking devices of subgroup A2 have been used both in the Viking period and the Middle Ages (Fig. 4.3), but are best represented in the fourteenth and fifteenth centuries.

Keys of type A2.1 are, however, only represented in the Viking period. None of the other A2-keys are represented until period 2 (c. 1120–1170/71). Key A2.3 is first recorded in period 4 (1198–1248), and A2.4 in period 6 (1332–1413).

To a certain degree the turning keys also seem to change in size over time (Fig. 4.4). Medium sized turning keys (8.1–14 cm) are the only ones that are represented through the entire analysed time span, c. 800–1700, and with the largest concentration in period 6, 1332–1413 (9 of 20 keys). The smallest keys are evenly represented from the Viking period to the 1470s. The large keys are represented from c. 1200 to1700 with the largest representation in period 6 (1332–1413). Large keys are best represented in period 6, followed closely by the medium sized keys, while small keys are relatively few.

The simple bit-shape with knobs is only recorded in the Viking period. The urban assemblage shows a general increase of turning keys in period 5, and particularly in period 6, also with an increase of the more complicated bit-shapes with teeth on two or three sides (Fig. 4.5). These keys are also among the largest. After period 6 (1332–1413), fewer turning keys are represented and there are fewer with these kinds of bit-shapes. N-shaped bits are first represented in period 6, but mostly from

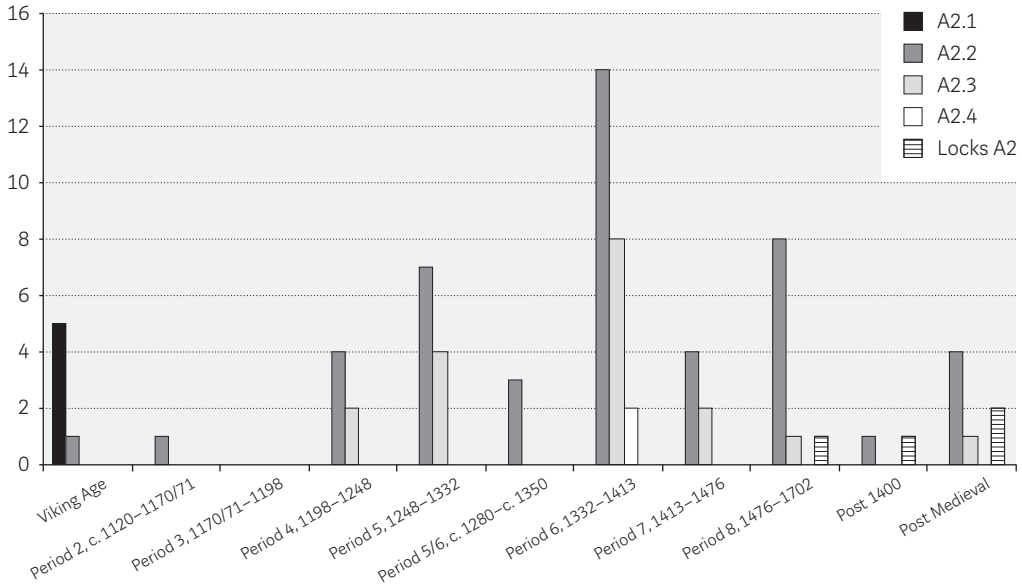


FIGURE 4.3 Chronological distribution of the key- and lock-types in subgroup A2. N=75.

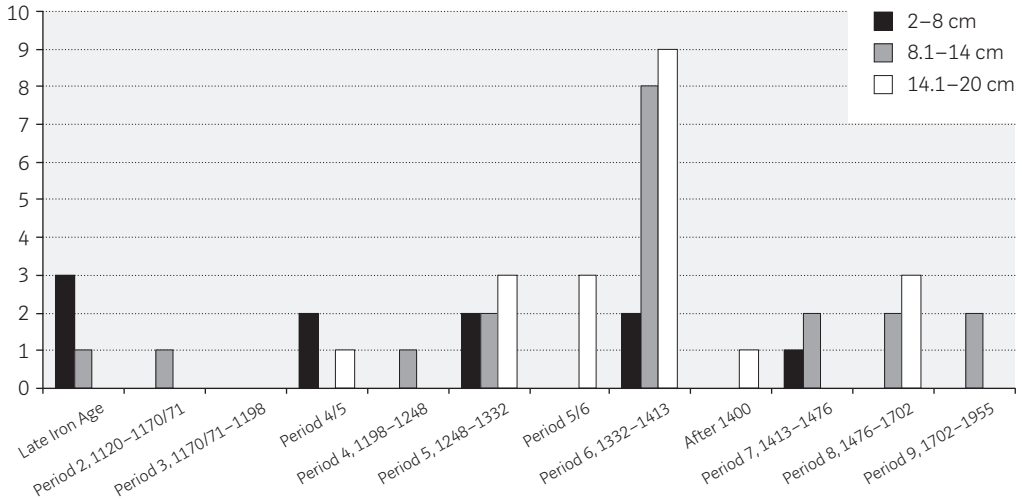


FIGURE 4.4 Dating of the different lengths of the A2-keys. N=49.

period 7 (1413–1476). The two simpler bit-shapes that are represented in urban contexts, without teeth and bits and with teeth only on one side, are concentrated to periods 5, 6 and 7 (1248–1476). Altogether, period 6, 1332–1413, represents the largest diversity in bit-shapes.

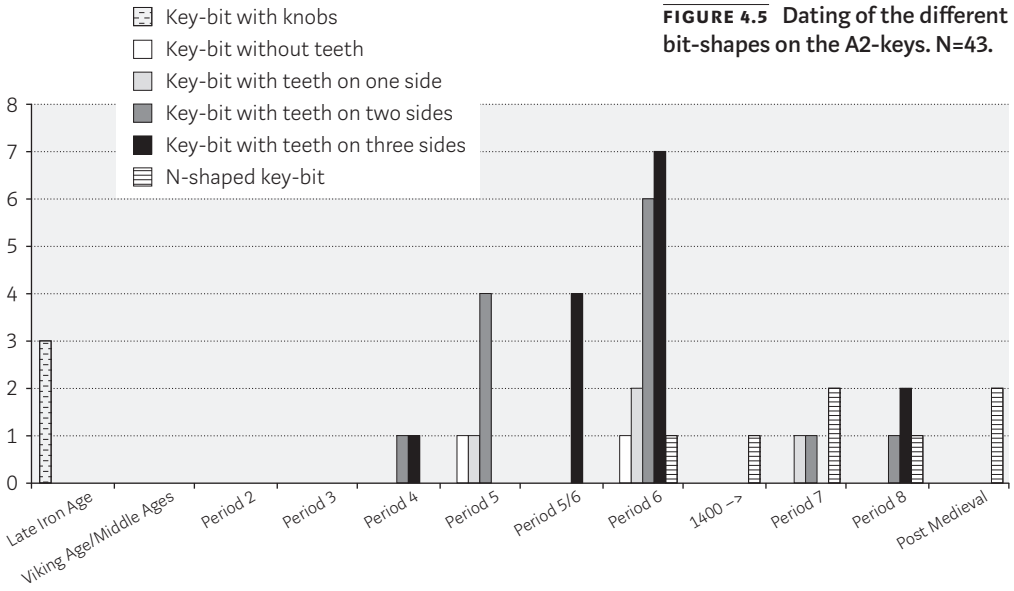


FIGURE 4.5 Dating of the different bit-shapes on the A2-keys. N=43.

This tendency also includes décor and bow-shape. Most of the decorated turning keys are related to period 6, including the circle-shaped bows. This is also the only recorded bow-shape of the turning keys in this period (Table 4.1). In the Viking period, pear- and circle-shaped bows are the only represented shapes. Bows with filled décor are mainly represented in Viking Age contexts (4 of 6 keys). They are also represented in urban contexts from the High and Late Middle Ages. Here, decorated turning keys increase in number from period 5 (1248–1332) onwards. Décor as a pointed tip inside the bow or on the top of the bow is represented from the 1200s onwards, while incised lines are recorded from c. 1200 to the early 1400s. Décor as a bulge and/or a ring around the stem is first recorded from the 1300s. The other types of décor occur more sporadically in Bergen.

	Pear	Circle	Kidney	Square
Viking Age	2	4		
Period 2, c. 1120–1170/71		1		
Period 3, 1170/71–1198				
Period 4, 1198–1248		2		2
Period 5, 1248–1332		7	1	1
C. 1280–ca. 1350		1		
Period 6, 1332–1413		20		
Period 7, 1413–1476		3	1	
Period 8, 1476–1702		6	2	
Post Reformation		3	2	

TABLE 4.1 The dating of the bow-shapes on the A2-keys. N=58.

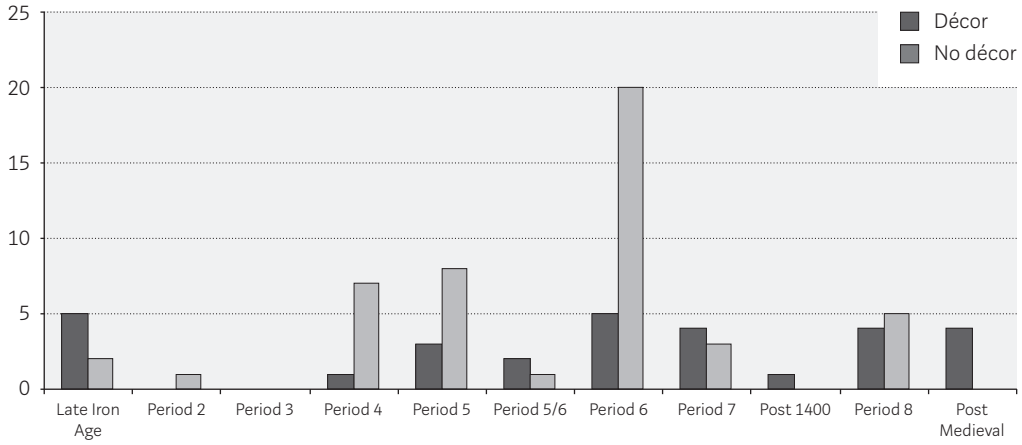


FIGURE 4.6 The dating of décor/no décor on the A2-keys.

The circle-shaped bow is represented over the longest time-span, from the Viking period and throughout the Middle Ages. The square-shaped bow is recorded in periods 4 and 5, 1198–1332, while the kidney-shaped bow is first documented in the Late Middle Ages.

Locks and keys of subgroup A2, then, change over time, both with regard to more or less complicated locking mechanisms, and as in shape and décor. Figure 4.6 indicates a strong increase in keys without décor compared to decorated keys during the fourteenth century. After this, the difference decreases. All the five decorated keys from the Viking period are made of bronze, in contrast to the medieval keys. The majority, on average 90 per cent of all the turning keys, are made of iron, a metal that has been used throughout the investigated period. Of the datable and decorated medieval turning keys, only two of 25 are made of bronze, the others of iron.

In total, 39 of the 49 datable and complete turning keys measure 8.1–20 cm in length. Only one of these, a medium sized key, is dated to the Viking period. Ten datable turning keys are of the smallest length group, probably belonging to chests/caskets, reflecting clear differences in the assemblage. The length groups regarded as keys for door locks are, with one exception, dated to the Middle Ages. Only one medium sized turning key is dated to the Viking period, versus three small keys. These small numbers and different finds contexts may, however, give a distorted impression of reality.

Subgroup A3

The probable key to the pin tumbler lock from Bergen is dated to period 6 (1332–1413).

Subgroup B1

The barrel padlocks and the push keys count 101 confirmed objects that can be dated based on contexts: 66 locks/parts from locks and 35 keys. Of these, nearly all, 98 objects were found in medieval urban contexts. Two push keys, 13 barrel padlocks and 11 lock bolts cannot be classified further, and are only represented in the subgroup overview.

Keys and locks of type B1.1 count 15 confirmed objects that can be dated based on the context: 5 locks and 10 keys (Fig. 4.7). Three barrel padlocks of type B1.1 are dated to period 4 (1198–1248), one to period 6 (1332–1413), and one widely dated to after 1200. Key type B1.1 is represented from period 2 (c. 1120–1170/71) and is most numerous from c. 1170 to the early 1400s. In total, the lock- and key type B1.1 is recorded from period 2 (c. 1120–1170/71) throughout period 6 (1332–1413), being most numerous before 1332 (Fig. 4.7).

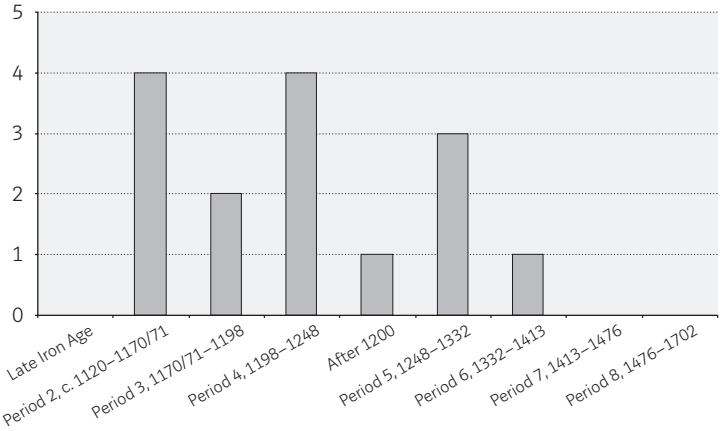


FIGURE 4.7
Chronological distribution of the locks and keys of type B1.1. N=16.

Of type B1.2, in all 62 confirmed keys and locks can be dated according to find context. Of the 20 dated keys of type B1.2 that can be further classified into subtypes, one is from the Late Iron Age (the 800s). In an urban context, the type is earliest represented from period 4 (1198–1248), with a peak in period 5 (1248–1332). The subtypes reveal differences over time (Fig. 4.8).

Keys of subtype B1.2.3 are less common than the two other subtypes, and are only represented in period 5 (1248–1332), the period with the largest variety of push keys and where key type B1.2.2 is most common. This key is represented throughout a long time span, from the Late Iron Age to the Late Middle Ages, c. 1470s. Keys of subtype B1.2.1 are first represented in period 4 (1198–1248), and are represented throughout period 6 (1332–1413).

The 42 datable locks of type B1.2 are represented from the Early Middle Ages to Post-Reformation (Fig. 4.9). Subtype B1.2.1 is represented in all these periods, with a peak from c. 1200 to 1400. The specimens of B1.2.2 are dated from c. 1200 to 1350,

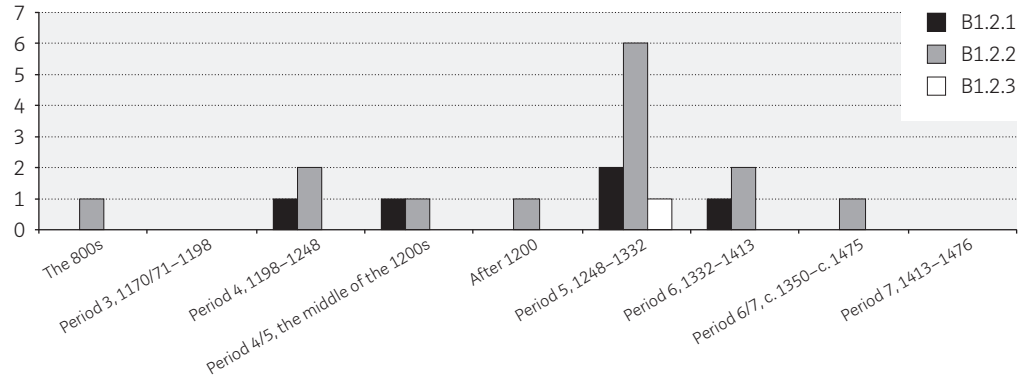


FIGURE 4.8 Chronological distribution of keys of subtype B1.2.1, B1.2.2 and B1.2.3. N=20.

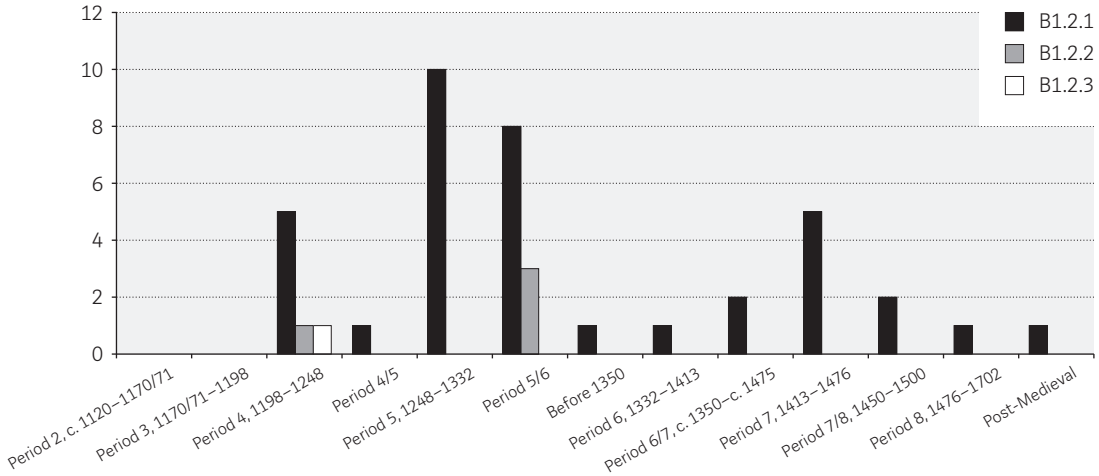


FIGURE 4.9 Chronological distribution of lock B1.2. N=42.

and the one B1.2.3-lock to period 4 (1198–1248). Keys of subtype B1.2.1 are thus represented from the whole investigated period, while the two other subtypes first appear c. 1200.

The majority of the barrel padlocks and push keys, subgroup B1, then, are represented from c. 1200 to c. 1350 (Fig. 4.10). The key- and lock type B1.1 seems to have been less common than type B1.2, and with a shorter period of use. Keys and locks of subgroup B1.2, on the other hand, are represented in the assemblage from the Late Iron Age and throughout the Middle Ages. Figure 4.11 gives a chronological overview of the sizes of the complete push keys in the assemblage.

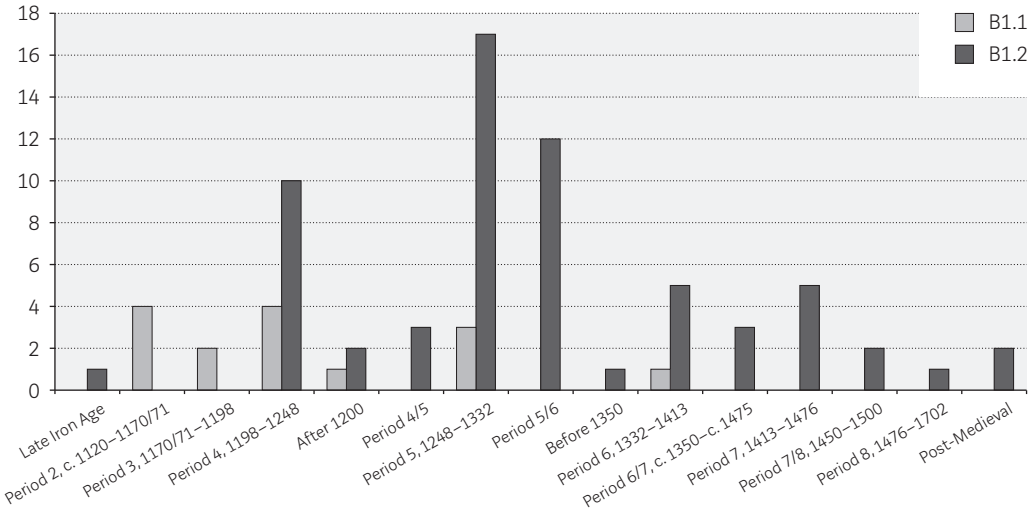


FIGURE 4.10 Chronological distribution of B1-locks and keys. N=79.

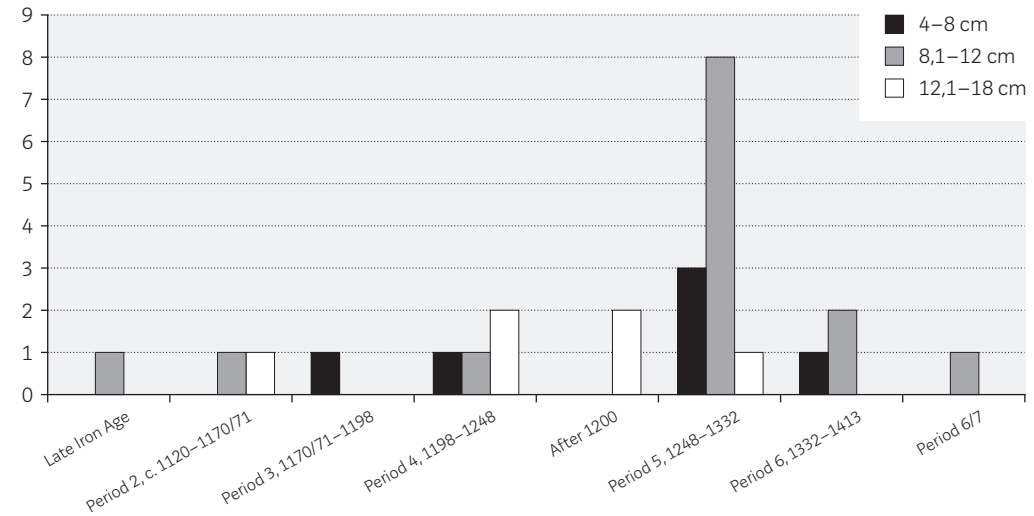


FIGURE 4.11 The chronology of the length of the keys in subgroup B1. N=26.

On the whole, it seems that the length of the push keys is most diverse in periods 4 and 5, with all three length groups represented. Only the medium sized keys are recorded in the whole studied period, with a peak in period 5, 1248–1332.

The barrel padlocks show little variation in a temporal perspective. Small locks are most common: both small and large locks are represented from c. 1200 into the 1400s, the small locks to about 1470 (Fig. 4.12). Altogether, period 5 shows the largest variation

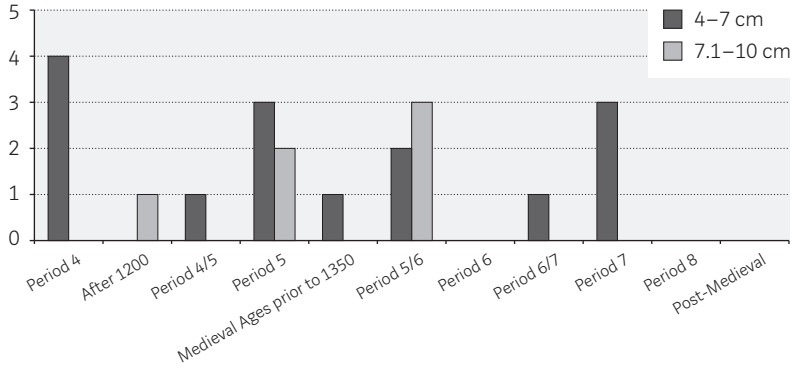


FIGURE 4.12 Chronological distribution of the length of the locks in subgroup B1. N=34.

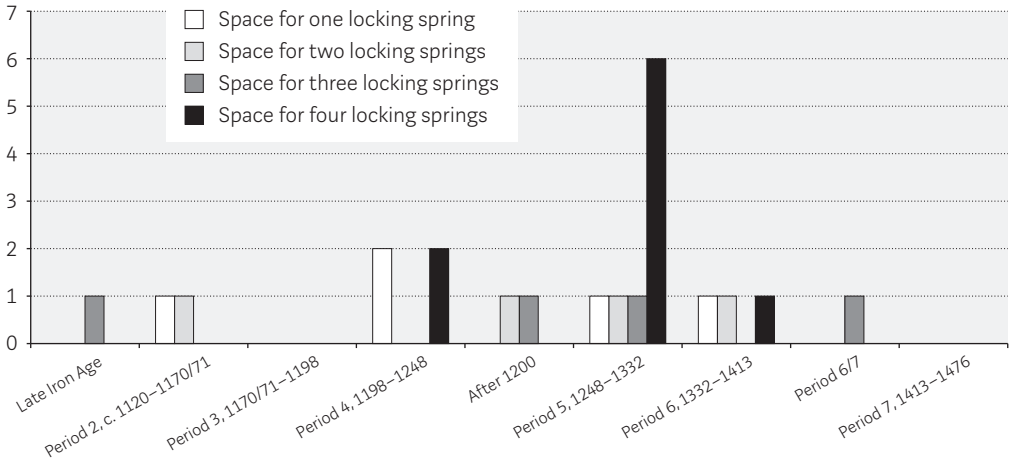


FIGURE 4.13 Dating of the different key bits on the B1-keys. N=22.

in barrel padlocks and is also represented by the most complicated keys, with four locking springs and all the four variations of the bit-shapes. However, the simplest bit-shape is also represented. Key bits with space for three locking springs are represented from the Viking period to periods 6 and 7, to the end of the fifteenth century.

The locks in subgroup B1 are also more and less complex. The most complicated and probably the most secure specimen, only recorded in period 5, is represented by bolts with five locking springs. The locks are most diverse in periods 4 and 5 to c. 1330, with four of five different shapes represented (Table 4.2). These variations support the tendency as for the barrel padlocks/push keys, where period 5 stands out with the most diverse representation.

Twelve decorated push keys can be dated based on context, to c. 1170/71–1332. The use of incised lines is weakly represented in the Early Middle Ages but increases towards the High Middle Ages. Décor shaped like a bulge between the handle and the stem and/or key bit is evenly represented in all periods.

	1 Locking spring	2 Locking springs	3 Locking springs	4 Locking springs	5 Locking springs	The different bolts summarised
Late Iron Age						
Period 2, c. 1120–1170/71						
Period 3, 1170/71–1198	1					1
Period 4, 1198–1248	3	2	2	3		4
Period 4/5	1	1				2
Period 5, 1248–1332	2	2		1	2	4
In period 5/6	4	2	2	2		4
Prior to 1350			1			1
Period 6, 1332–1413						
Period 6/7, c. 1350–ca. 1475				1		1
Period 7, 1413–1476				1		1
Period 7/8, 1450–1500						
Period 8, 1476–1702						
Post-Medieval						

TABLE 4.2 Distribution of the different degrees of complicated locking bolts on B1. N=33.

Of the decorated barrel padlocks, 29 specimens can be dated. Most of them are decorated with rims on the lock case. This décor is represented from period 2 (1120–1170/71), and throughout the analysed period. Décor in the form of incised lines is only represented in periods 4 and 5 (1198–1332).

Figure 4.14 shows the chronological distribution of locks and key of subgroup B1, with and without décor, represented from the Viking period to the end of the Middle Ages. Decorated locks and keys are relatively most numerous in the early High Middle Ages, in period 4, while most locks and keys without décor appear in the beginning of the 1200s. From the mid-thirteenth century, most barrel padlocks and push keys are undecorated; twice as many are without décor than with.

As already shown, iron is commonly used in barrel padlocks and push keys (Fig. 4.15), and again period 5 (1248–1332) stands out with many iron locks, a peak that corresponds with the number of objects represented, and probably does not signify a more frequent use of iron but yet an increase in more solid locks and with more complicated key bits.

The most varied use of metal besides iron is documented in period 5, and locks and keys of copper alloys are only found in periods 4 and 5. Iron objects with a cover of copper alloy are more unevenly represented, from both before and after 1200, mostly from periods 4 and 5, 1198–1332. Seen in relation to decorated objects, the later decrease may imply greater emphasis on the functional elements than the decorative. Changes are also recorded in the barrel padlocks/push keys.

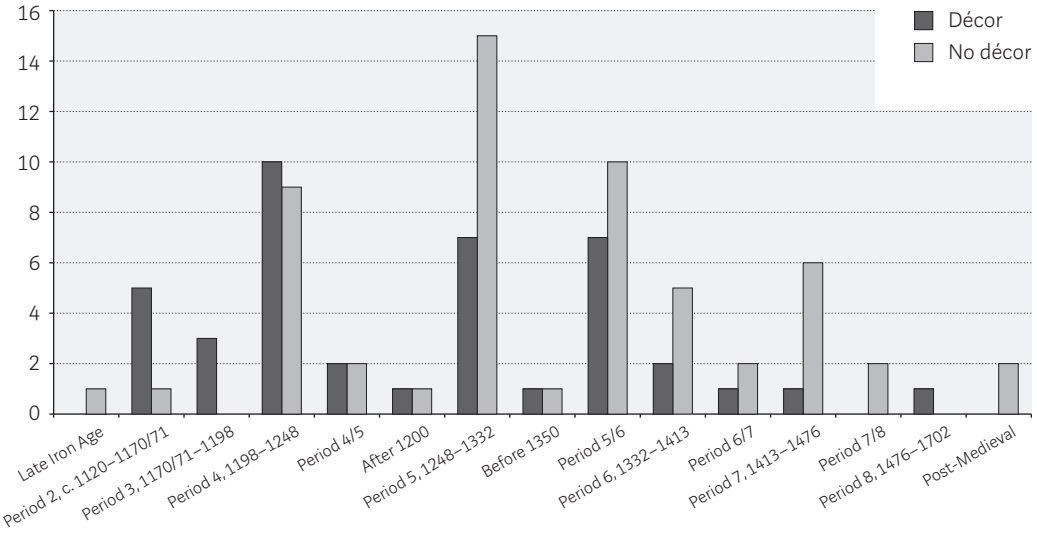


FIGURE 4.14 Chronological distribution of subgroup B1, locks and keys, with and without décor. N=101.

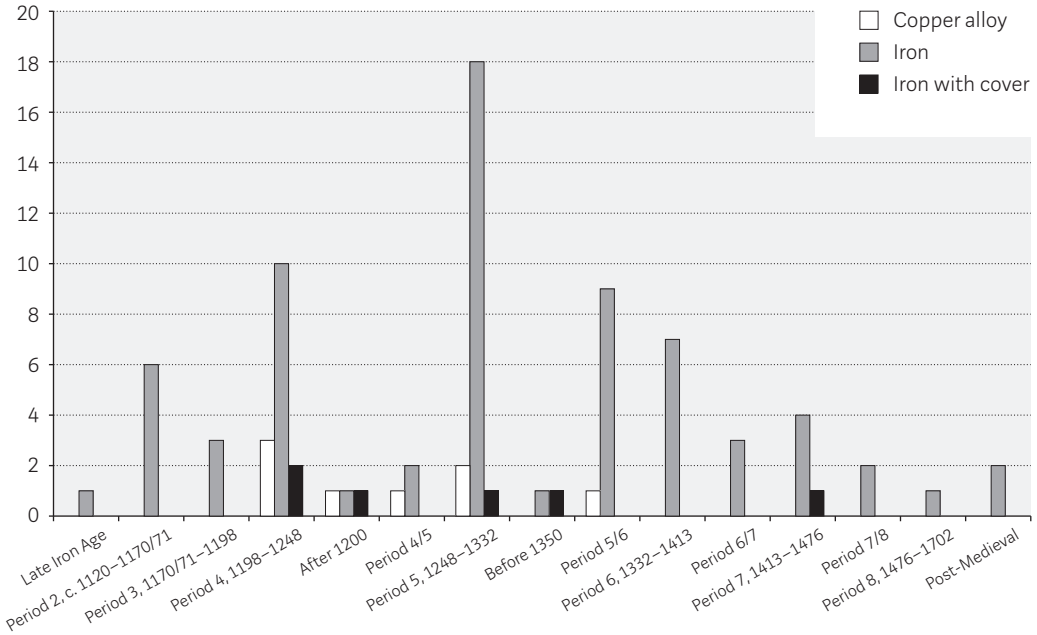


FIGURE 4.15 Chronological distribution of different metals in subgroup B1, locks and keys. N=84.

Subgroup B2

The padlocks with turning lock mechanism count seven objects, all come from urban contexts. The earliest dated locks are from period 6 (1332–1413) and are represented until after the 1700s. This locking device seems, then, first to have come into use by the end of the High Middle Ages. As this lock has its locking mechanism built into the lock case, it is not possible to assess the degree of more/less complicated locks.

General assessment

The use of locks and keys, then, seems to have changed considerably during the investigated period. Figure 4.16 of the representation of the four subgroups of locks and keys from the large Bryggen site, shows the temporal pattern in the material. Barrel padlocks and push keys, subgroup B1, are most numerous from period 2 (c. 1170–1198) throughout period 5 (1248–1332), while the turning keys, subgroup A2, are most numerous in the periods 4–6 (1198–1413). By period 6 (1332–1413), the turning locks and keys appear as more common than the barrel padlocks/push keys, a trend that seems to have lasted during the remaining period of study.

The analysis has shown a concentration of portable locks and chest or casket locks in the Viking period, whereas permanent locks to a larger degree are represented in the

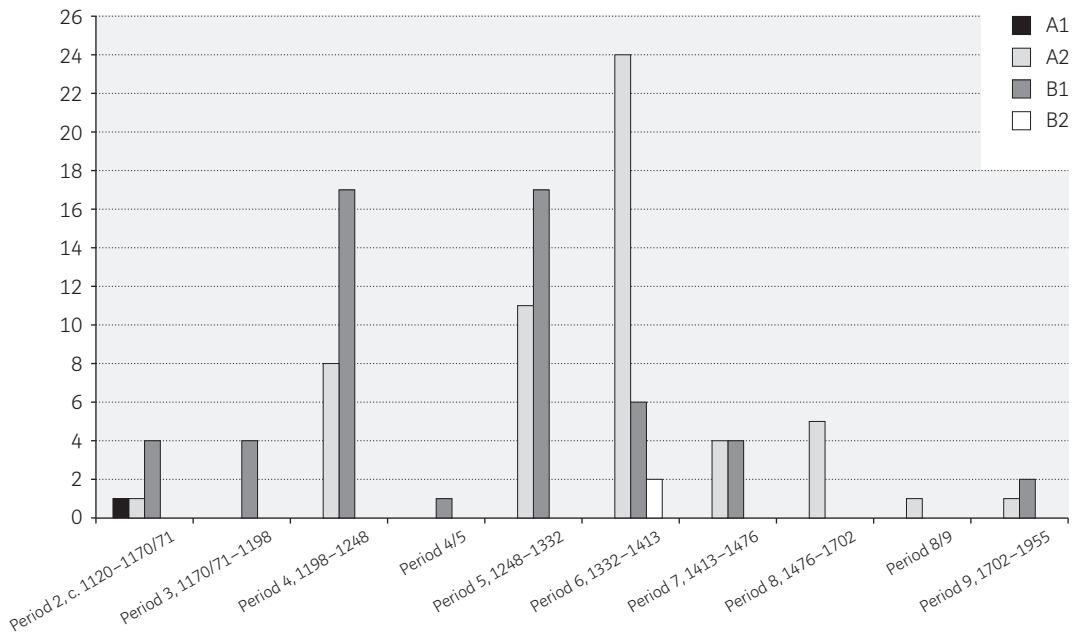


FIGURE 4.16 Chronological distribution of the locks and keys from the Bryggen site. N=112.

Middle Ages. In the High and Late Middle Ages permanent locks are more numerous than the portable ones. The permanent locks for doors may thus reflect changes with regard to security for locking houses or rooms and not only chests and caskets.

Changes relate to both form and more functional elements in locks and keys. The degree of change varies somewhat within the different subgroups. The portable lock with a turning lock mechanism, B2, is the smallest subgroup and is represented in the High Middle Ages, and no significant changes can be observed over time. The pulling lock with a hooked key, subgroup A1 is somewhat more numerous, but best represented in the Viking period.

Subgroup A2, with more complex keys with an increase of keys bits, reflects more secure locks over time. Their size also seems to increase from period 6, 1332–1413. The keys with key bits shaped like three-leaf clovers or other complex shapes, earliest dated to period 4, 1198–1248, also have a concentration in period 6. The simpler three-leaf clover-shapes appear at an earlier date than the more complicated, possibly due to improved competence within iron production.

A2 also changes as for décor, with significantly less decorated material by the fourteenth and fifteenth centuries. Except for the increased key size, similar changes also relate to barrel padlocks/push keys. Locks with complicated mechanisms multiply towards the mid-fourteenth century, reaching a peak in the period in the decades around 1300. While decorated B1 keys and locks dominate in the twelfth century, undecorated specimens appear more frequently by period 5 (1248–1332). As decorated B1 locks and keys decrease, then, more complicated locking mechanisms increase.

Of the turning locks and keys, subgroup A2, 67 complete keys could be dated of which 51 specimens (8.1–20 cm long) seem to have belonged to door locks. Keys of this length increase markedly in number from around the middle of the fourteenth century, representing 89 per cent of all the turning keys. The small keys, on the other hand, are evenly represented throughout the Middle Ages. Chests and caskets, associated with different kinds of storage, are also secured with locks. Caskets with locks are represented in the Viking period and the Middle Ages. The medieval chests/caskets probably had turning locks, as the hooked keys that are associated with the caskets in the Viking period are not represented in the later centuries. These kinds of locks appear as small keys in the assemblage. They might also have belonged to the portable lock of subgroup B2, but its late dating and the generally early dating of the small keys, rather indicates chests/caskets.

Compared to finds of locks and keys from other medieval towns, the dating of the barrel padlocks and push keys from the medieval town of Bergen to a large degree concur in time (Table 4.3). Yet, the barrel padlock with a hinged loop, B1.2.2, seems to differ from other urban representations, appearing around a hundred

Type	Bergen	Oslo	Lund	Århus	Novgorod
B1.1	ca. 1120–1413	1050–1400	1020–1300	1050–1300	1000–1150
B1.2.1	1198–1413	1225–1500	1250–1400	1225–1400	1100–1450
B1.2.2	1198–	1300–	1300–		

TABLE 4.3 The dating of barrel padlocks in Bergen compared to other medieval towns. Based on Færden 1991.

years earlier in Bergen than in e.g. Oslo and Lund. The simplest barrel padlock with a leading slit along the lock case, type B1.1, however, first occurs in Bergen around a hundred years later than the other towns. The barrel padlock of subtype B1.2.3 is not included in table 4.3, because if it is represented in these medieval towns, it has not been dated.

The dating of turning locks thus represents a new result in both Norwegian and partly also Scandinavian contexts so far. The many turning keys from Bergen are also interesting compared to e.g. medieval Oslo, where only some twenty specimens have been found. Similar finds from other Scandinavian medieval towns have, however, not been studied to any degree.

FIGURE 4.17 Push keys of subgroup B1.1 decorated with metal threads, c. 1120-1170/71 (BRM 0/72983 bottom and BRM 104/2271 top). Scale 1:1.

FIGURE 4.18 Push key of type B1.1.2 from the Bryggen site (BRM 0/44749). Scale 1:1.

FIGURE 4.19
Turning keys from the Bryggen site.
Left: Subtype A2.2.3 (BRM 0/2222).
Middle: Subtype A2.3.4 (BRM 0/38640).
Right: Subtype A2.2.4 (BRM 0/47891).
Scale 1:1.

5 | Spatial distribution

In this section, all the artefacts are related to their spatial contexts, both on a micro and macro level, and in as much detail as possible. The objects were found in rather different contexts: prehistoric burials and rural settlements from the Middle Ages, and not least from different urban contexts of medieval Bergen. This makes it possible to assess the question of difference between rural and urban conditions and changes in a time perspective. Of the finds from Bergen, the extensive Bryggen site provides the best opportunity to relate the locks and keys to buildings and other constructions and to different zones within the site.

Viking Age burials

All the locks and keys dated to the Viking period have been found in graves: a total of 28 keys in 17 graves. In addition, four graves contain one probable key respectively, and one grave contains an uncertain key. Two keys have been found in uncertain contexts and are not included in the further analysis. Most of the finds come from the inner region of the county, the municipalities of Eidfjord, Granvin, Ulvik and Voss (9 graves). Two graves are from coastal areas, Austevoll and Meland, and three from a mid-zone, Etne, Kvam and Bergen (Fig. 5.1).

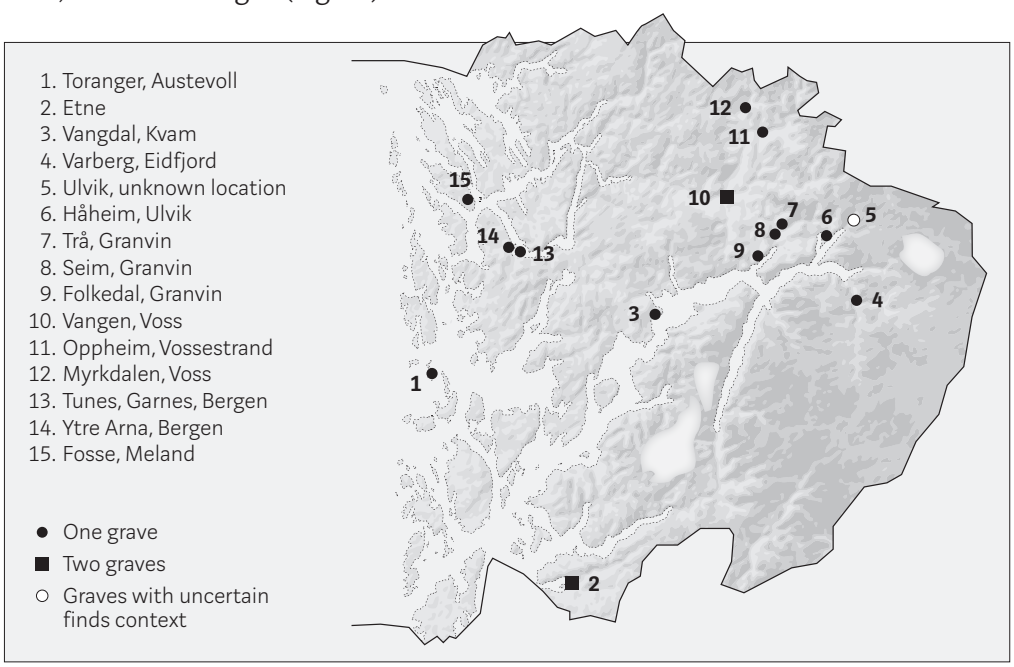


FIGURE 5.1 All the graves with confirmed locks/keys in Hordaland.

The finds count 17 hooked keys, 3 pulling locks, 6 turning keys and 1 push key. Subgroup A1 thus counts 20 of 27 artefacts, or about three fourths of the finds. More than half of these graves are female burials and four are male (Fig. 5.2). Two are double graves, male and female, and another two graves are uncertain with regard to gender. Thus, there is an overweight of female burials related to this finds group.

Three subgroups, A1, A2 and B1, are recorded in the burials. In female burials only hooked keys (A1) and turning keys (A2) are represented, with more than twice as many A1 as A2-keys (Fig. 5.2). In the male graves, all three subgroups of locks and keys are recorded. The push key, then, is only represented in one male grave.

The finds combinations of locks and keys in the graves are respectively: one key, several keys, key/keys and a casket, and a casket. The four male graves contain only single keys. In female graves, on the contrary, all the four combinations are recorded. The combination of several keys is found in three female burials, and also the combi-

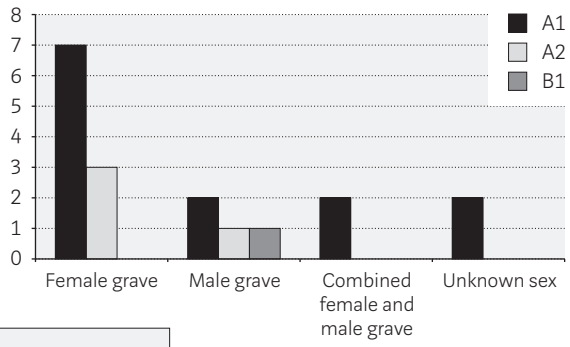


FIGURE 5.2 All the graves with confirmed locks/keys in Hordaland from the Viking period. N=18.

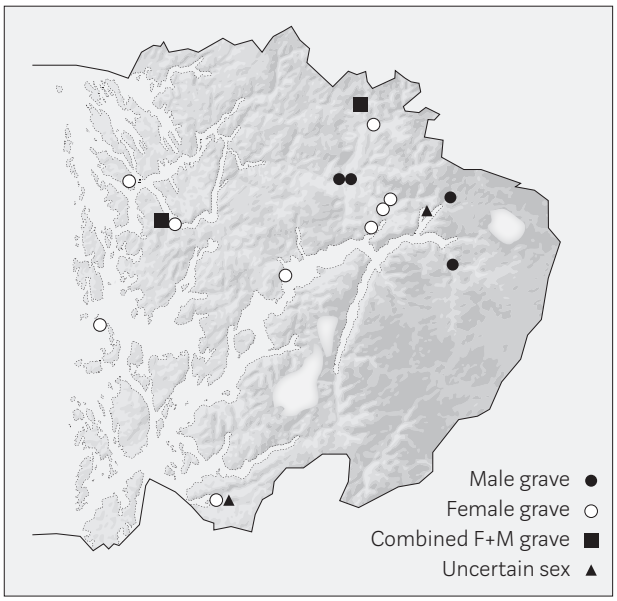


FIGURE 5.3 The Viking Age graves in Hordaland containing locks and/or keys distributed by gender. N=18.

nation of casket with lock and key/keys has only been recorded in a female grave. In one of the double graves a key and a casket without a lock has been found.

All graves with keys from the mid zone and coastal areas are female. Also in the inner areas, the graves containing keys are most frequently female, three of them from Ulvik. The greatest variation in locks and keys is observed in the inner areas, where the graves also are more numerous. Here, more pulling locks have been found than in the other areas. Five of the keys, all turning keys, are decorated, all found in the mid-zone. All of them are made of bronze, and come from women's graves. It seems that especially the hooked key, A1, but also small turning keys, A2, have been related to women in the Viking period/Middle Ages.

Rural settlements and rural medieval finds

Two sites with finds of locks/keys in Hordaland are widely dated to the Viking period/Middle Ages: at Sandøya in Sunde and at Hjartøy in Øygarden municipality. Both these sites have been investigated archaeologically. At Hjartøy, only one probable hooked key has been found, and this is not included in the further analysis. The site at Sandøya probably represents a seasonal settlement for fishermen, lasting from the Early Iron Age (c. 300 AD) to c. 1100–1200 AD (Johannessen 1998). Here, one hooked key and one pulling lock have been found.

Medieval locks/keys have been found in rural contexts in Eidfjord, at the Halsnøy Convent, at the deserted farm Høybøen in Fjell and in Os municipality (Fig. 5.4). Of these, only Halsnøy convent and the Høybøen site have been investigated archaeologically.

At Høybøen, the buildings are dated to the Middle Ages, three keys and two locks were found in one of the rooms where artefacts associated with household activities, food preparation and textile production and possibly fishing gear were also found (Randers 1981: 86). All the keys and one lock belong to subgroup A1, but these

FIGURE 5.4 The rural sites with finds of keys and locks from the county of Hordaland from the Middle Ages.

could not be retrieved in the museum. The other lock, a barrel padlock, has a cover of copper alloy, probably bronze, and is decorated with rims lengthwise on the lock case and with a possible v-pattern parallel to the rims.

At the convent at Halsnøy two undecorated turning keys of iron have been found, roughly dated to the High Middle Ages. One of the keys is small, 7 cm long, while the other is medium-sized, 12.1 cm long, probably belonging to a door lock.

A push key from Os and a turning key from a medieval graveyard at Eidfjord are lacking more detailed information about the finds context. Both keys are made of bronze. The turning key is richly decorated, while the other is undecorated. Based on analogies, the push key can be dated to the Early Middle Ages and the other to the High Middle Ages.

The locks and keys from these rural contexts thus constitute a fragmentary material, but show that both barrel padlocks and turning locks were in use. Some of them are also decorated. Apart from Halsnøy, locks or keys of bronze are found at all the sites. The keys from the coastal environments of Sandøya and Høybøen belong to subgroups A1 and B1. While the hooked keys may belong to either doors or chests or caskets, the barrel padlock of the smallest size has probably been used on a chest or a casket.

Locks and keys from Bergen

To what extent, then, do the finds of locks and keys in an urban setting differ from the earlier and contemporary rural finds? Is it possible to trace differences between the artefacts that are found in the medieval town of Bergen compared to those found in a medieval context in the rural areas? Do other subgroups or types of locks and keys appear in the urban society in the Middle Ages, and are different keys and locks connected to certain contexts? And in which contexts do the different kinds of locks and keys appear in the town in time and space? These are the questions to be looked into in the following.

Altogether 226 locks and keys have been found in Bergen, from all the archaeological sub-periods, distributed over a total of 25 sites (Fig. 5.5).

Holmen (BRM 39)

Today, Bergenhus Castle covers the area denoted as Holmen in the Middle Ages (cf. Øye this volume, Fig. 1.4). Two turning keys and one barrel padlock have been found in the south-western part of the area. Both are made of iron, and the barrel padlock is decorated with rims alongside the lock case. One of the keys is decorated with a pointed tip on top of the bow. Only one of the keys could be dated based on the finds context, to the 1200s.

1. Bergenhus, BRM 39
2. Sandbrugt. 5, BRM 3
3. Dreggsallmenning 20, BRM 4
4. Dreggsallmenning 14–16, BRM 237
5. Dreggsallmenning 10–12 and, BRM 61
6. Kroken, BRM 344
7. Dreggsallm. by the SAS-hotel, BRM 83
8. The Brygge-excavation, BRM 0
9. Øvregt. 39, BRM 94
10. Rosenkrantzgt. 4, BRM 76
11. Kjøpmannsstuens tomt, B7380, B7097
12. Bratten og Dramshusens tomter, B6601
13. Finnegården 6a, BRM 104
14. Finnegården 32, BRM 110
15. Lille Øvregt. frimområde, BRM 465
16. Kong Oscars gt. 8, B7378
17. Domkirkegt. 6, BRM 245
18. Halfdan Kjerulfs gt., BRM 462
19. Rådstuplass 1–2, BRM 20
20. Kong Oscars gt., Fangegården, B6792 (approximate location)
21. St. Jørgens hospital, BRM 25
22. Nonneseter convent, Ma348
23. Kredittbankens tomt, B8156
24. Strandgt. 55–57, BRM 236
25. Erkebispegården, BRM 105

FIGURE 5.5 The sites in Bergen where locks and/or keys are found. Ground map: NIKU.

The Bryggen area

The Bryggen site (BRM 0)

The extensive Bryggen site covered four to six medieval tenements. The historical known tenement Gullskoen in the northern part of the site covered an area of c. 1600 m^2, comprising up to eight rows of houses prior to c. 1250 (Herteig 1991: 11; *plates*). Gullskoen earlier formed three separate tenements, known in written sources as Atlegard (rows 1 and 2), Miklagard (rows 3 and 4), and Sveinsgard (rows 5 and 6) (ibid: 109). The tenements south of Gullskoen, Søstergården, Engelgården and Bugården, generally comprised two rows of buildings through the whole period (cf. Øye this volume, Fig. 1.1).

Period 2, c. 1120–1170/71

No locks and keys have been recorded in period 1, prior to 1120. The six locks and keys from period 2 were located in the rear part of the site (Fig. 5.6), and include subgroups A1, A2 and B1: four push keys, one turning key and one lock which is either a pulling lock or a simple turning lock. The only medieval bundle of keys that has been found is dated to this period, and comprised two push keys. Except the turning key, all the locks and keys were found in the Gullskoen area, and one of the push keys was found in situ in a passage in the rear part of row 2. The finds of mainly barrel padlocks/push keys thus show continuity in time to the Viking period.

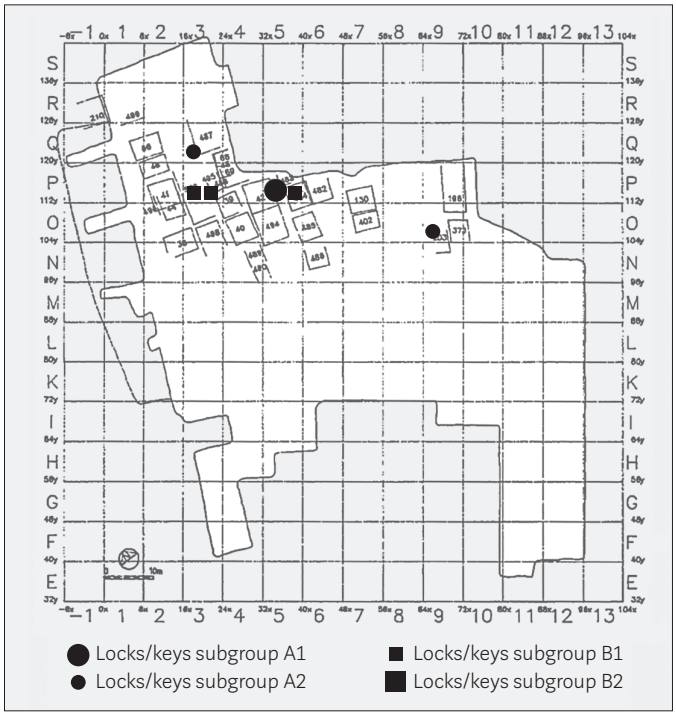


FIGURE 5.6 The Bryggen site, period 2. Spatial distribution of the different subgroups of confirmed locks and keys.

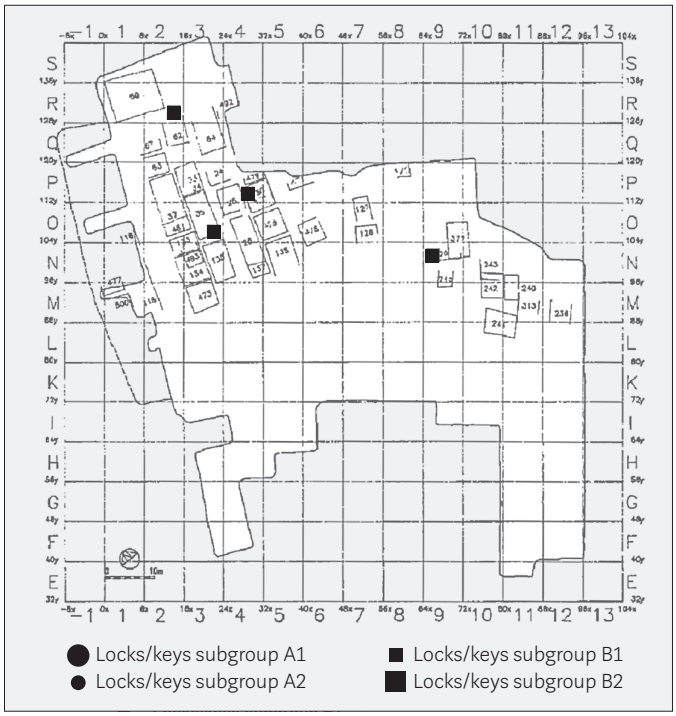


FIGURE 5.7 The Bryggen site, period 3. Spatial distribution of the different subgroups of confirmed locks and keys.

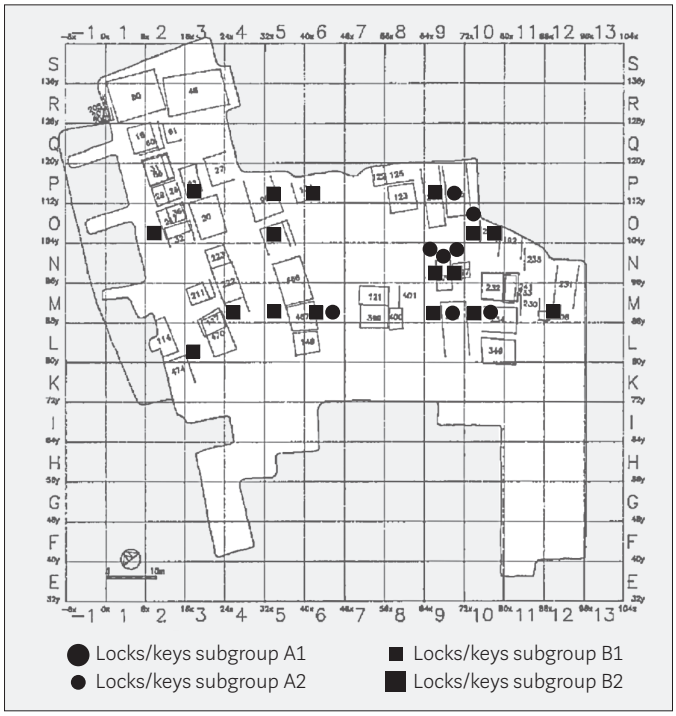


FIGURE 5.8 The Bryggen site, period 4. Spatial distribution of the. different subgroups of confirmed locks and keys.

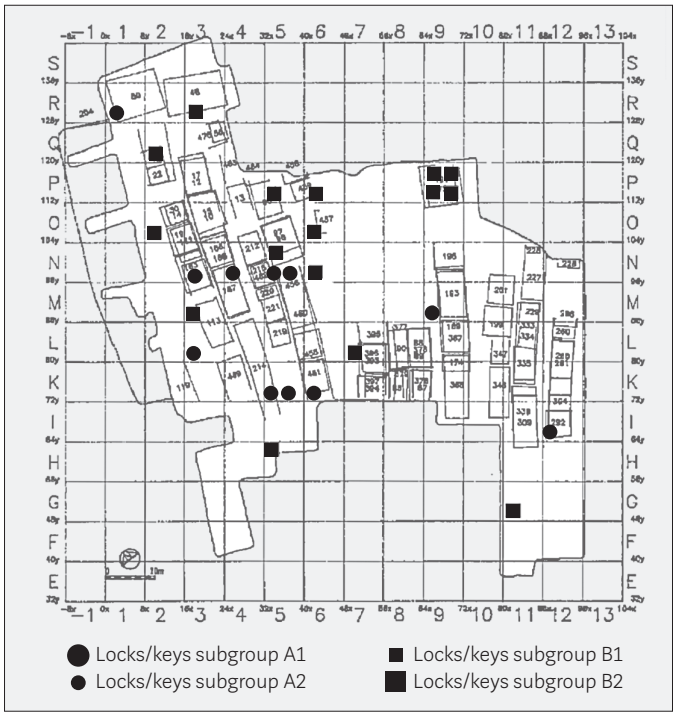


FIGURE 5.9 The Bryggen site, period 5. Spatial distribution of the different subgroups of confirmed locks and keys.

Period 3, 1170/71–1198

From period 3, four objects were found. These were distributed over a larger area than in the preceding period (Fig. 5.7), but they were still concentrated to the Gullskoen area. All belong to subgroup B1: two barrel padlocks and two push keys. Traces of door locks were not found.

Period 4, 1198–1248

The locks and keys from period 4 include 21 items of subgroups A2 and B1: 12 barrel padlocks, 3 push keys and 6 turning keys, distributed within all the tenements except Søstergården (Fig. 5.8). The objects were concentrated in the middle and rear areas of the site, and evenly represented in Engelgården and Bugården. One barrel padlock may be related to a building in Bugården. Only one specimen of A2 has been found in the Gullskoen area in this period, and apart from this, all the locks and keys in this area belong to subgroup B1. Door locks thus seem to be more common in the other tenements than in the Gullskoen area, while portable locks are more common in the latter. Turning locks which represent permanent door locks are not represented in the Gullskoen area until the 1200s.

Period 5, 1248–1332

27 objects of subgroups A2 and B1 are related to period 5: 11 turning keys, 6 barrel padlocks and 10 push keys. They were found in all the tenements, but in this period, they were also found in the front area (Fig. 5.9). One turning key is probably related to building 183, in row 5 in the front zone of Gullskoen. The majority of the items in subgroup B1 and A2 were concentrated in the Gullskoen area, signifying continuity to the preceding periods. One barrel padlock and three push keys were all located within one of the buildings in Engelgården, building 191, in the rear zone.

Period 6, 1332–1413

Altogether 32 objects of subgroups A2, B1 and B2 have been found from period 6: Two locks of subgroup B2, four push keys, 24 turning keys and two barrel padlocks. The items were found in all the tenements, concentrated to the middle and front parts of the area, especially in Bugården (Fig. 5.10). The portable locks were concentrated to the rear areas, connected to buildings identified as St Mary's Guildhall and St Lawrence's chapel. One specimen was also found in the front area. Apart from this, subgroup B1 is represented in the middle areas of Engelgården and Bugården. Additionally, one B2 specimen is recorded in Bugården.

Two turning keys were found *in situ* in fire layers in the Gullskoen area but with an uncertain relation to constructions, one in building 131, row 4, in the front zone and the other close to building 443, row 5, in the rear zone. Only three specimens

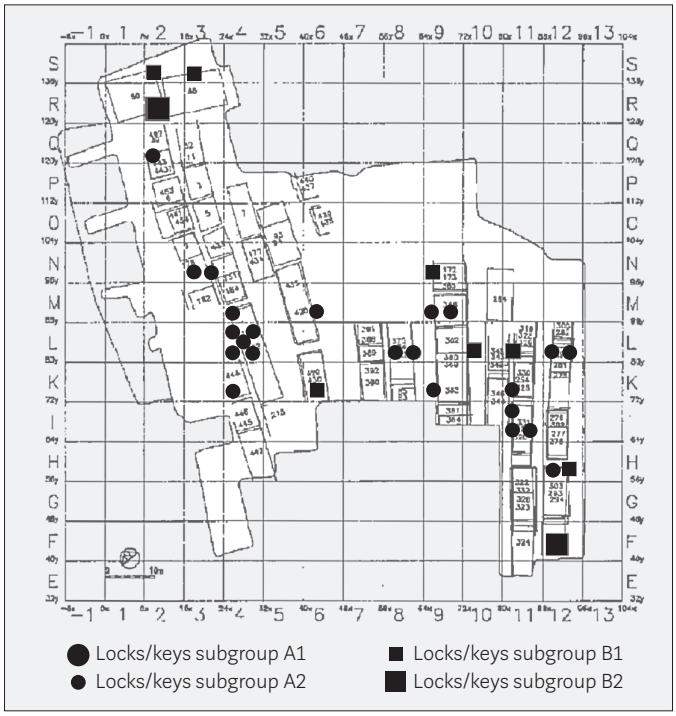


FIGURE 5.10 The Bryggen site, period 6. Spatial distribution of the different subgroups of confirmed locks and keys.

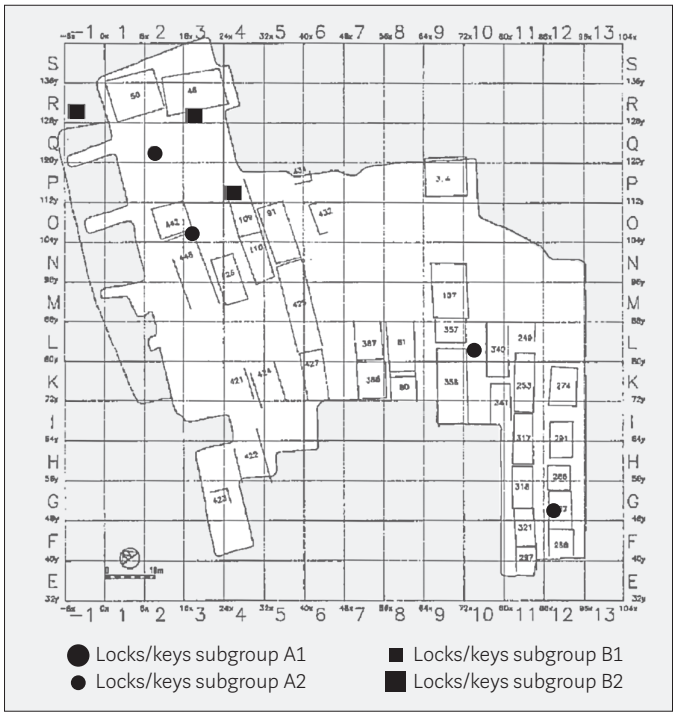


FIGURE 5.11 The Bryggen site, period 7. Spatial distribution of the different subgroups of confirmed locks and keys.

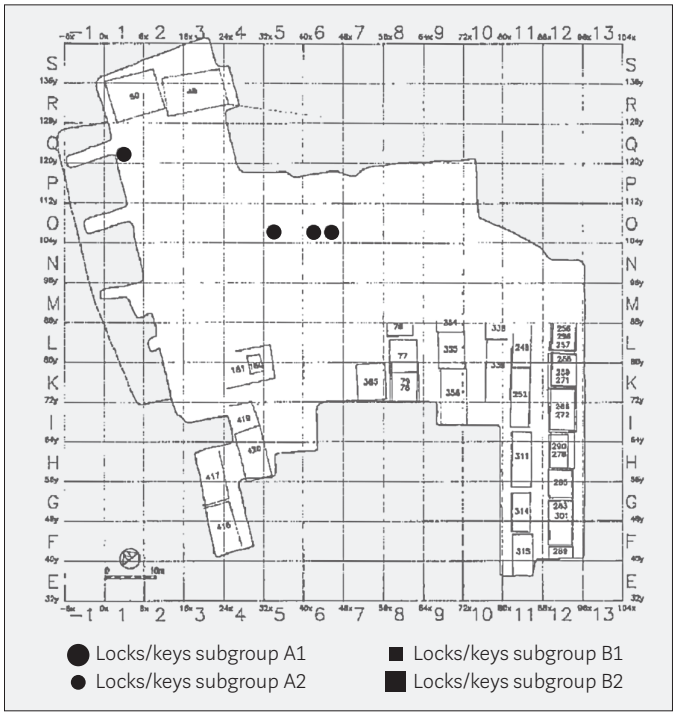


FIGURE 5.12 The Bryggen site, period 8. Spatial distribution of the different subgroups of confirmed locks and keys.

of B1 are related to the Gullskoen area, and one specimen of B2. Turning keys, signifying locked doors, were concentrated to the front areas. A2-keys were also widespread in Bugården.

Period 7, 1413–1476

Only eight objects, all belonging to subgroups A2 and B1, are related to period 7. Seven of these could be located more closely: four turning keys and three barrel padlocks. They were found in all the tenements except Søstergården, both in the rear and front areas (Fig. 5.11). Subgroup B1 is only represented in the Gullskoen area.

Period 8, 1476–1702

Five turning keys, subgroup A2, are related to period 8, all from Gullskoen, in all its zones (Fig. 5.12).

Summing up, then, locks and keys are thus represented in all the zones of the tenements at the Bryggen site but with markedly few keys in Søstergården with only three such items from periods 5 and 6. Of the datable objects, 14 locks/keys are related to the Bugården area, 28 to Engelgården and 66 to the larger Gullskoen area (Table 5.1).

Only 14 of the objects were found in situ. Two of these are lacking more detailed finds information, and of the remaining 12, only one object is probably related to a building. Six objects have uncertain relations to buildings: three to passages, and one to an eaves-drip gap. In addition, one barrel padlock may be related to a building, just below floor level in building 231.

	A1	A2	B1	B2	Objects *in situ*
Bugården		11	4	1	1
Engelgården		13	14		1
Søstergården		2	1		
Gullskogården	1	28	31		12

TABLE 5.1 Dated subgroups related to medieval tenements (N=132).

Although only 14 of the 132 objects were found *in situ,* the spatial distribution may still be significant as to a large extent, waste seems to have been kept within the boundaries of the plots belonging to the tenements. In period 7, however, new waste practices seem to have been carried out, removing waste from the plots (Økland 1998). This indicates that artefacts, especially from the areas belonging to Gullskoen and Bugården, actually were used in these areas, at least in periods 2–6 (c. 1120–1413).

The majority of the locks and keys from the Bryggen site were found in the area of Gullskoen. Although this area is larger than the other tenements, the number of barrel padlocks and push keys is still very high.

The northern part of the Bryggen area

Locks/keys have been found at six sites north of the extensive Bryggen site. It was possible to date locks/keys from four of them based on finds context: Kroken 11 (BRM 344), Dreggsallmenningen (BRM 83), Dreggsallmenningen 14–16 (BRM 237) and Dreggsallmenningen 20 (BRM 4). Two sites with finds of keys in the northern part of Bryggen: Sandbrugaten (BRM 3) and Dreggsallmenningen 10–12 and 24 (BRM 61), each with one push key. These could not, however, be dated based on finds contexts. Except Kroken, the sites belong to the harbour zone.

Kroken 11, BRM 344

One lock of subgroup B2 has been found, probably post-medieval, based on other datable finds at the site (pers. inf. Rory Dunlop).

Dreggsallmenningen, BRM 83

Two turning keys, two push keys and five barrel padlocks have been found at this site, which covered an area of c. 288 m^2 (Hansen 1994: 52). The material is widely dated to the period 1248–1476.

Dreggsallmenningen 14–16, BRM 237

Four barrel padlocks and one push key have been found at this site covering an area of c. 550+80 m^2 (Hansen 1994: 59). They are all widely dated to between c. 1200 and 1500.

Dreggsallmenningen 20, BRM 4

One turning key, three push keys and three barrel padlocks were found at this site that covered an area of c. 740 m^2 (Hansen 1994: 48). Of these, one barrel padlock and two push keys could be widely dated to after 1200.

Most of these sites in the northern part of the Bryggen area were situated close to the harbour, and thus close to storage buildings and commercial activities. Here, the portable locks, and especially the barrel padlocks, are by far the most numerous and the turning locks are rather few, which reflects a tendency towards barrel padlocks being associated with storage buildings and the like in the front zones, and that the use of permanent door locks was not very common in these harbour areas.

The southern part of the Bryggen area

In the southern part of Bryggen, datable locks/keys have been found at three sites: Finnegården 3a (BRM 110), Finnegården 6a (BRM 104) and Rosenkrantzgate 4 (BRM 76). Keys that could not be dated based on finds information have been found at two sites: Bratten and Dramshusens tomter (B6601) and Kjøpmannsstuen site (B7380, B7097). Here, three turning keys have been found, used in doors with permanent locks. All the sites are located to the front areas of Bryggen.

Finnegården 3a, BRM 110

One barrel padlock was found on this site, dated to 1248–c. 1400.

Finnegården 6a, BRM 104

One barrel padlock, two push keys, one turning lock and one turning key have been found on this site. The objects are dated to 1130/40–1170/71, 1225/30–1248, and 1520/30–1550/60, covering more or less the entire medieval period.

Rosenkrantzgate 4, BRM 76

Six locks/keys were found at the site covering an area of c. 450 m^2 (Hansen 1994: 51): four barrel padlocks and two turning keys. Three barrel padlocks are dated to after 1248 and one barrel padlock and the two turning keys to after 1413.

Øvrestretet – The Upper Street area

Øvregaten 39 (BRM 94)

Only one site has a relevant find: one barrel padlock found *in situ* in a passage and dated to 1248–1332. This area was dominated by trading activity in the Middle Ages, and the barrel padlock may thus be associated with trade and storage.

Vågsbunnen and the southern town area

Here, datable locks/keys have been found at three sites: Domkirkegaten (BRM 245), Lille Øvregate friområde (BRM 465), and Halfdan Kjerulfs gate (BRM 462). Furthermore, five sites with finds of locks/keys could not be dated based on the finds context: Rådstuplass (BRM 20), St Jørgen hospital in Kong Oscars gate 54 (BRM 25), Kong Oscars gate 8 (B7378), Kong Oscars gate "Fangegaarden" (B6792) and Kredittbankens tomt (B8156).

Domkirkegaten 6 (BRM 245)

Altogether 19 barrel padlocks, three turning keys and one push key were found at the site covering an area of c. 300 m^2 (Hansen 1994: 58). Of these, 19 items could be dated: 16 barrel padlocks, two turning keys and one push key. The dating frame for the site stretches from c. 1230/40 to 1623, but best represented from c. 1280 to 1350 (15 of 19 objects). The site shows a large overweight of barrel padlocks/push keys. Judging by the turning locks, buildings in this area were secured by door locks.

Lille Øvregate friområde (BRM 465)

Three objects have been found at the site, and dated to 1250–1393/1413: one turning key, one hooked key and one barrel padlock, with a certain variation in subgroups.

Halfdan Kjerulfs gate (BRM 462)

Four turning keys and one lock of subgroup B2 have been found at the site, all of them post-medieval.

Nonneseter convent

Three turning keys have been found at the site, but they are labelled 'single finds' without closer context or dating. Only one of them could be classified in more detail; this is of type A2.2, with a wide period of use, from the Viking Age to the Post Reformation. This key is also decorated. One key was complete enough to be measured and seems to have belonged to a permanent door lock.

Stranden

At Stranden datable locks and keys have been found at two sites: Erkebispegården (BRM 105) and Strandgaten (BRM 236).

Erkebispegården, BRM 105

Two turning keys have been found at the site, both dated to the post-medieval period based on finds context. In addition, one turning lock, also post-medieval, might stem from the site.

Strandgaten 55–57, BRM 236

Three objects, one turning key and two locks of subgroup B2, were found on this site, all of them post-medieval.

Only the subgroups A2 and B2 are represented, then, indicating that permanent door locks were used in the area.

Chronological and spatial patterns

In total, there is an overweight of barrel padlocks/push keys at the large Bryggen site compared to the rest of the assemblage. The large overweight of barrel padlocks and push keys, especially in the northern area of Bryggen, indicates a strong association between this subgroup of locks and keys on one hand and commercial activities and storage buildings on the other. At the Bryggen site, the two subgroups A2 and B1 are equal in number. The barrel padlocks seem, however, to a certain degree to be concentrated in the Gullskoen area, with 20 barrel padlocks/push keys and only three turning locks/keys. Also one lock of subgroup B2 has been found there. In Bugården, on the other hand, twice as many turning locks/keys as barrel padlocks/push keys have been found. The southern area of Bryggen shows a more even distribution, with seven turning keys and eight barrel padlocks/push keys, while at the large Bryggen site, 63 specimens each of both subgroup A2 and B1 are revealed.

With the exception of the large Bryggen site, 12 of 43 locks/keys from Bryggen are decorated; three decorated items are from the northernmost part and nine from the southern area. This may support a hypothesis that decorated locks/keys were used in dwellings, while for locks/keys used for storage buildings, the focus would be more on the functional elements and on secure locking mechanisms.

The chronological distribution of the objects shows that the total material from the southern part of Bryggen has a dating frame from the 1100s and throughout the entire Middle Ages. The northern part shows a somewhat wider dating frame from 1200 onwards, extending into the Early Modern period, but with the main centre of

gravity in the 1200s–1400s. In total, the oldest dated locks and keys stem from the large Bryggen site. Further north, at Dreggsalmenningen, and at Holmen, and in the southern part of the town, in Vågsbunnen, the earliest recorded keys are from the 1200s. At Stranden, locks/keys are first recorded after the Reformation.

In Vågsbunnen, all subgroups A1, A2, B1 and B2 are represented, and thus comparable to the Bryggen site and the southern part of the Bryggen area. The distribution of the different subgroups shows that A2 and B1 are by far the most common, with 18 and 21 specimens respectively, while A1 and B2 are only represented by one each. Altogether 18 of the objects are decorated. Nine barrel padlocks from Domkirkegaten are decorated with rims, while one turning key is decorated.

The different subgroups of locks and keys are unevenly distributed at the sites in Bergen. Table 5.2 shows all the dated objects based on subgroups and urban zones.

TABLE 5.2 The distribution of the subgroups of all confirmed locks and keys in the socio-topographic zones.

	A1	A2	B1	B2
Holmen, dwelling area		2	1	
Bryggen, harbour area	1	63	63	2
Øvregaten, dwelling/trade area			1	
Vågsbunnen, harbour/dwelling area	1	18	21	1
Strandsiden, dwelling area		3		2

1. Bergenhus, BRM 39
2. Sandbrugt. 5, BRM 3
3. Dreggsallmenning 20, BRM 4
4. Dreggsallmenning 14–16, BRM 237
5. Dreggsallmenning 10–12 and, BRM 61
6. Kroken, BRM 344
7. Dreggsallm. by the SAS-hotel, BRM 83
8. The Brygge-excavation, BRM 0
9. Øvregt. 39, BRM 94
10. Rosenkrantzgt. 4, BRM 76
11. Kjøpmannsstuens tomt, B7380, B7097
12. Bratten og Dramshusens tomter, B6601
13. Finnegården 6a, BRM 104
14. Finnegården 32, BRM 110
15. Lille Øvregt. frimområde, BRM 465
16. Kong Oscars gt. 8, B7378
17. Domkirkegt. 6, BRM 245
18. Halfdan Kjerulfs gt., BRM 462
19. Rådstuplass 1–2, BRM 20
20. Kong Oscars gt., Fangegården, B6792 (approximate location)
21. St. Jørgens hospital, BRM 25
22. Nonneseter convent, Ma348
23. Kredittbankens tomt, B8156
24. Strandgt. 55–57, BRM 236
25. Erkebispegården, BRM 105

FIGURE 5.13 Overview of the number of locks/keys found on the different excavation sites in Bergen, including material that could not be dated from the finds context. Ground map: NIKU.

Apart from the large Bryggen site, which clearly stands out with regard to quantity, the spatial distribution shows a certain concentration of locks and keys in Vågsbunnen (Fig. 5.13). The sites at Rosenkrantzgaten and Dreggsallmenningen both have six to ten locks/keys.
The locks and keys from Bryggen diverge somewhat from the other urban zones as this area includes the large Bryggen site. Here, it has been possible to trace differences between rear and front areas, where the buildings to a larger extent are related to storage and commercial activities in the harbour.

In the Gullskoen area, the barrel padlocks/push keys are the most numerous and mainly found in the rear or mid- zones, while these types of locks and keys are more evenly distributed at the Bryggen site as a whole. The barrel padlocks and push keys may thus reflect differences in activities in the different zones.

The common subgroup in the rural areas in the Middle Ages and the Viking period, subgroup A1, is scarcely represented in the medieval town of Bergen, with only two specimens, one lock and one key, at the Bryggen site and in Vågsbunnen respectively. At the Bryggen site, the lock was found in the rear area and dated to period 2.

Subgroup A2 is represented in Viking Age burials, but not in the other rural contexts either from the Viking period or the Middle Ages. Altogether 96 locks and keys of this subgroup were, however, found in urban contexts, mostly from Bryggen. The spatial distribution of the locks and keys thus indicates a change from rural to urban contexts. There are also differences within the town area, with a concentration of barrel padlocks/push keys at the commercial area of Bryggen. the Vågsbunnen area shows a certain concentration. In total, the assemblage of locks and keys shows a tendency towards an increase of more complicated locking devices and a decrease in decorated locks and keys. The first starts at the end of the Viking period, but they are both especially apparent towards the High and Late Middle Ages.

During the Middle Ages, it seems that these locks and keys become more concentrated around the front areas of the Bryggen site, evidently reflecting an increased use of door locks, and thus an increasing need for closing off.

6 | Conclusions

In this study, locks and keys from the county of Hordaland in Western Norway have been investigated in a long term perspective from c. 600 to c. 1700 AD. It mainly comprised three different archaeological contexts: (1) burials from the Late Iron Age, (2) Viking Age and medieval rural settlements, and (3) sites from the medieval town of Bergen. The main aim has been to analyse the different types of locking mechanisms

according to how they were constructed and used in different contexts over time. What was locked in or off, how, why, and by whom? The assemblage of locks and keys is large both in a Norwegian and Scandinavian context, comprising altogether 272 confirmed, 27 probable and 10 uncertain artefacts, and represents an artefact group that has not been studied as a corpus or contextually earlier. The urban finds dominate with 226 locks and keys, while the graves revealed 28 such finds, the finds from medieval rural settlements are only seven.

The finds include hooked keys and parts of pulling locks, turning locks and turning keys, barrel padlocks and push keys, portable locks with turning mechanism, and a possible key to a pin tumbler lock. Iron was the most common raw material but also different copper alloys have been used, but mostly in the Viking Age and in the early Middle Ages. Bone and wood were more rarely used. The keys vary considerably in size, from the smallest key, shorter than 3 cm, to the longest, around 19 cm. They also vary with regard to how complicated the locking mechanisms were, depending on their area of use, either for securing smaller containers, like chests and caskets, or for doors for locking off rooms. Keys found in Viking Age burial contexts as personal grave goods were mainly hooked keys, but also and less frequently small turning keys for locking caskets and chests. A push key from a male burial may have been for locking of doors, but this is uncertain. The medieval locks and keys from urban environments are more varied and the numerous finds of barrel padlocks and push keys from the Early and High Middle Ages reveal many variations with regard to size and function. Towards the end of the High Middle Ages and the transition to the Late Middle Ages, the finds indicate that locking of doors became more common. The locks, and also the barrel padlocks, became more secure, the keys became stronger and made of iron instead of copper alloys, and the locking mechanism became more complicated. Use of decoration, on the other hand, became less common. Although the medieval finds from rural settlements are few, they also reflect the same trend, showing that both doors and smaller containers could be locked, though with less complicated locking mechanisms than those found in the urban areas.

Most of the Late Iron Age material in the assemblage stems from the Viking Age. The keys found in Viking Age burials were intentionally deposited artefacts and mostly from female graves, reflecting norms and gender roles. Still, the grave finds may be less representative than finds that unintentionally ended up in the ground, reflecting daily routines and practices. The increase of locks and keys for locking of doors and the different varieties of barrel padlocks in the harbour areas of medieval Bergen, probably reflect increased commercial activities and storage where store rooms had to be locked off in the densely populated urban environment and in an area with valuable commodities in storage. Barrel padlocks and push keys were particularly numerous in the commercial area where the goods were stored. After c. 1300,

the turning locks and keys seem to have become the most common locking devices in Bergen, being found in all the socio-topographic zones in the town. As most of them appear as door locks, it indicates a change towards a locking off of larger rooms. The markedly increase in turning keys in the period from c 1250 to the early fifteenth century also coincides with the establishment of the Hansa Kontor at Bryggen and indicate a stronger emphasis on security and at the same time privatisation of rooms in the tenements.

The keys in the Viking Age female burials, on the other hand, were used for securing personal belongings in chests and caskets, symbolising women's role as housewives and housekeepers. The absence of hooked keys in urban contexts indicates that the relation between keys and female roles cannot be directly transferred to medieval urban environments. Traces of key bundles, as found in female burials, have only been found once in medieval Bergen, in the rear area of the Bryggen site. This is also an area where most of the decorated locks and keys were found, and also an area with many traces of female related activities. A functional and gender division between the rear and the front areas may thus also be supported by the finds of locks and keys. The concentration of barrel padlocks and push keys in the harbour and storage areas may be associated with male activities and the domain of men. This is particularly evident after the Hansa took over the Bryggen tenements.

The locks and keys that have been found in the study area, including Bergen, do to a large degree follow the general developments that have been observed in other Norwegian and Scandinavian medieval towns, but the finds, being far more numerous than in the other towns, are able to throw new light on changes and new roles in a medieval urban society.

Acknowledgements

Several people have provided me with invaluable advice and assistance during my M.A. studies. In particular, I wish to thank Arne J. Larsen and Gitte Hansen at the Medieval Collection, Bergen University Museum, who willingly guided me through the collection and the archives. I also wish to thank Alf Tore Hommedal and Rory Dunlop at the Norwegian Institute for Cultural Heritage Research (NIKU), who always gave me thorough answers to questions on excavations and artefacts. Friends and colleagues at the different institutions at Bryggens Museum provided a generous and inspiring work environment. A special thanks to my supervisor during my M.A. and Chief editor of this paper, Ingvild Øye, who both during my M.A. studies and during this revision of the thesis has given me effective and constructive feedback on my work.

Various gaming pieces on a hnefatafl board from medieval Bergen.

Board games from the medieval town of Bergen

GURO KOKSVIK LUND

1 | Introduction

"From high stakes with dice, much ado comes." At some point in the thirteenth century a, perhaps somewhat resigned, person inscribed these words in Norse runes on a wooden stick. It may simply have been a reflection of how things were, or perhaps a warning. Whatever the reason, this short message tells us of an activity that was well integrated into urban life, an activity that could sometimes lead to more trouble than one had bargained for. More importantly it tells of a familiarity with game-playing in medieval Bergen.

The subject of this study is board games in the medieval town of Bergen in Western Norway. Here, an extensive assemblage of archaeological artefacts related to different board games; dice, gaming pieces and gaming boards, have been found, altogether more than 1,100 objects from the early Middle Ages c. 1120 to the Early Modern period c. 1700, most of them from the commercial area of Bryggen (the Wharf) but also other archaeological sites in the medieval town. The assemblage has a potential to shed light on different games as such, but also reflects social activities and daily life in an early urban setting, which has so far gained little attention. In this study I approach this special group of artefacts in terms of variation in a social context and over time, with the overall aim to shed light on different aspects of urban life in the Middle Ages.

The new towns of the Middle Ages represented societal changes, international contacts and new cultural impulses with impact on everyday life. People lived close together, and in the High Middle Ages the population in Bergen, as the largest town in Norway, may have reached 10,000–12,000 people, not least attributed to its role as an

international trading centre and other central functions (Helle 1982: 492–493; Helle 2006: 110). The German Kontor at Bryggen, established by the Hanseatic League around 1360, constituted a significant international element in the latter part of the period. The expanding external contacts also form an interesting backdrop when studying board games in these urban environments in a long term perspective. Games are part of the material culture, but they also include symbolic aspects as elements in a communication beyond the physical activity (Hodder and Hutson 2003: 166–167). Playing the games was an expression of leisure but perhaps also a way of expressing social and mental affiliation, and a way of distinguishing oneself in relation to others, and thus an indicator of social identity. Thorstein Veblen's (1912) theory of *conspicuous consumption*, and particularly *conspicuous leisure,* the privilege to 'waste' time to assert one's status, is therefore also an interesting perspective when studying the gaming artefacts found in Bergen.

The urban medieval area of Bergen seems to have been structured into five socio-topographical zones (cf. Øye this volume, Fig. 1.4); (1) Holmen, later Bergenhus, the town's political and religious centre, (2) Bryggen, the commercial area, (3) Øvrestretet, the area for small scale trade and handicrafts, (4) Vågsbunnen, also dominated by handicrafts and (5) Stranden, first more densely settled in the fourteenth century (Helle 1982: 228–259).

Bryggen	Øvregaten	Vågsbunnen	Strandsiden
BRM 0 Bryggen	**BRM 86** Øvregaten/Finnegårdsgaten	**BRM 106** Heggebakken	**BRM 236** Strandgaten 55–57
BRM 3 Sandbrugaten 5	**BRM 94** Øvregaten 39	**BRM 346** Bakgaten 4/Skostredet 10	
BRM 4 Dreggsallmenningen 20	**BRM 297** Wesenbergsmauet	**BRM 465** Lille Øvregate 1 Friområde	
BRM 6 Holmedalsgården	**BRM 614** Nikolaikirkeallmeningen 1F		
BRM 76 Rosenkranzgate 4			
BRM 83 Dreggsallmenningen			
BRM 104 Finnegårdsgaten 6A			
BRM 110 Finnegårdsgaten 3A			
BRM 223 Kroken 3			
BRM 237 Dreggsallmen. 14–26			
BRM 242 Dreggsallmenningen 10			

TABLE 1.1 **Archaeological sites in the different socio-topographic zones with finds of gaming artefacts.**

Gaming artefacts have been found at nineteen sites within all of these zones, in particular at the extensive site at Bryggen, excavated 1955–68, and sporadically into the 70s (Table 1.1). The artefacts from this site can be studied in relation to structures and house-constructions, and can shed light on social environments and indirectly the daily life of the people who participated in the games.

The main source material for this study is the physical gaming material especially from the medieval period, but also written sources that contribute in contextualising the artefacts. The artefacts uncovered include a small number of gaming boards as well as dice, jetons and over a thousand gaming pieces. The diverse assemblage of artefacts, including the social and cultural contexts in time and space, form the basis of the study. An identification of which board games were played in medieval Bergen, is a prerequisite for further analysis of the assemblage and to be able to shed light on more composite research questions – what kinds of games were played, when, where, and indirectly by whom. The international aspects of Bergen also make it relevant to study as to what degree the gaming material had an international influence, as some games were introduced into Scandinavia during the Middle Ages.

2 | Earlier research

So far, there has been rather scanty research on medieval board games. Although gaming artefacts have been found in archaeological contexts throughout Scandinavia, they have gained relatively little scholarly interest. Most archaeological publications on this theme appear often only as lists of artefacts among other finds, possibly also identified and related to already known games (Kristiansen 1997: 5–6). Studies focusing on gaming artefacts may have different perspectives; archaeological, historical and also a games-theory angle. Some studies cover medieval board games in general, whereas others focus on a particular type of game – usually board games like *hnefatafl* or chess.

Games related to the Iron Age dominate in the archaeological research, and an early presentation of prehistoric archaeological board games appeared as early as in 1914 in an article by Jan Petersen, "Bretspillet i Norge i forhistorisk tid", which still gives a relevant overview of prehistoric board games in Norway. Only a few Scandinavian studies concern board games used in the Middle Ages. Most of them deal with change in gaming traditions during the transition from the Iron Age to the Middle Ages. A recent study of Scandinavian board game research (Kristiansen 1997) assesses the quality of these studies to be variable and expresses a need for more thorough and analytical studies which could counter-balance a focus on elites (ibid: 5, 45, 50).

The emphasis on mentality and structuralism in archaeological research since the 1990s seems, however, to have led to a renewed interest in board games (Guttormsen 2001: 4). In the last two decades several master's theses and articles have appeared where board games of the Iron Age and Middle Ages have been seen in larger social and symbolic contexts, from archaeological and historical perspectives (see e.g. Dahl 2003; Kristensen 2007; Lund 2010; Skomsvoll 2012).

Christopher McLees' study of gaming material from medieval Trondheim, *Games People played: gaming pieces, boards and dice from excavations in the medieval town of Trondheim* (1990) represents the most relevant study for my analysis and forms a basis for a comparison of gaming artefacts uncovered in urban contexts. It focuses on the transition from the Iron Age to the Middle Ages, but is generally lacking when it comes to contextualising the finds.

Some studies have particular relevance when studying medieval board games. In the books *A History of Chess* [1913] (1962) and *A History of Board-Games Other than Chess* (1951) and the article "The Medieval Games of Tables" (1941), H.J.R. Murray provides a general overview of the history of board games. In *Board and Table Games from many Civilizations* (1960), R.C. Bell presents board games from all over the world. Both authors also refer to Nordic gaming habits and histories. Even though gaming theory constitutes the most central part of the works, they provide important information about the different games and their development.

Board games – an overview of games used in the Norse areas

Written sources refer to several board games that were played in the Middle Ages. The Icelandic sagas tell of *tafl*. This was the Norse version of the Roman game *tabula*, a game that spread north via the Germanic areas. It seems that during most of the Iron Age the word *tafl* was used for only one particular game, but as other games entered the gaming arena, this changed. In the sagas the word can also be used to denote boards and gaming pieces, but other types of games were eventually also mentioned. At this point the notion *tafl* became a suffix in games such as ON *hnefatafl, hnettafl, halatafl* and *kvátrutafl* (Lundström and Sølvberg 1977: 11f; Dahl 2003: 21). In addition games such as *skáktafl* (chess), draughts, merels and dice were common games.

Hnefatafl

The game *hnefatafl* derives from the Roman game *Ludus Latrunculorum*. Archaeological finds show that the game was brought to Scandinavia some time before AD 400 (Murray 1951: 56). *Hnefatafl* was a strategic war game and both written and archaeological sources demonstrate a game where the strategy was built around a battle of two armies of unequal size. The armies had different colours and the smallest army

had an additional king piece – the *hnefi*. The purpose of the game was to conquer this piece from the opposing team, while they tried to move it to safety. The hnefatafl-board could vary in size and usually had a grid with odd numbers (15x15, 13x13, 11x11, 9x9 or 7x7), though boards with even numbers have also been uncovered (18x18). The army with the least gaming pieces would be placed in the middle of the board and it would then be surrounded by the larger army. The gaming pieces would be placed symmetrically, and this setup is similar to a siege more than a straight forward battle (Fig. 2.1). The number of gaming pieces seems to have been determined by the number of squares on the grid (Murray 1951: 55–56; Lundström and Sølvberg 1977: 11; Dahl 2003: 23).

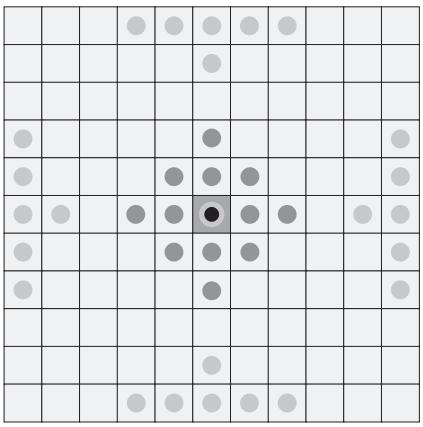


FIGURE 2.1 Hnefatafl, based on Michaelsen (1992).

The game of hnefatafl was long shrouded in mystery as the sagas give little information about what this game was and how it was played. It was H.J.R. Murray who discovered the link between hnefatafl and the game mentioned in the sagas when he saw the records from Carl Linneus' travels in Lappland from 1732. Here Linneus discovered a board game played among the Sami denoted as *tablut* (also known as *dablo*). This game seems to have been almost identical to the Viking Age game hnefatafl (Murray 1951: 56).

Halatafl and hnettafl

Halatafl was a simple hunting game, most likely the game that is known as *fox and geese* today. In this game, one player would have only one gaming piece – a fox, while the other player had thirteen gaming pieces which made up a gaggle of geese (Fig. 2.2). By moving the fox-piece over a goose, the goose would be removed from the board. To remove the fox-piece, the gaggle of geese had to surround and trap it. With strategic and careful playing the odds would usually favour the player with the geese (Murray 1951: 101ff; Bell 1960: 76–77).

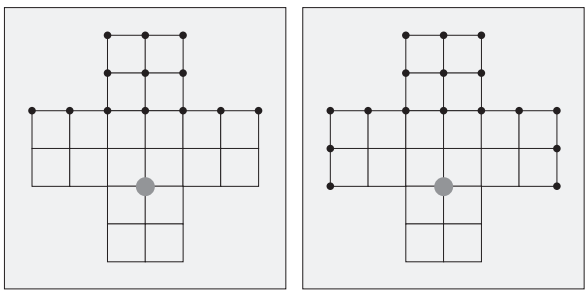


FIGURE 2.2 Fox and Geese, based on Bell (1960).

In addition *to halatafl*, the game of *hnettafl* has also been interpreted as fox and geese. Whether this is the case has not yet been determined. A game that has been interpreted as both games is described in *Grettis saga*, where a pointed gaming piece is thrown and hits a man in the eye. The historian Sigurður Guðmundsson thought that the nineteenth century Icelandic game *refskák* was the equivalent of *hnettafl*, whereas Murray thought the game in Gretti's saga is *halatafl*. In *Heiðrek's saga*, on the other hand, the game *hnettafl* seems to be played with two equally sized armies. Thus, the name of the game is as yet an open question (*KLNM XIV*: 618–619; McLees 1990: 27–28).

Kvátrutafl

Kvátrutafl (Fig. 2.3) was a game very similar to the game *backgammon*. It would be played with flat circular discs and usually two dice. It originated in Persia or southwest Asia around AD 800. Supposedly it was brought to Europe by Arabs in the eleventh century. In the Middle Ages the English name for the game was *tables*, but eventually this became the term for any game played on a board (Murray 1951: 117; Bell 1960: 42–43; McLees 1990: 34).

Murray identified over twenty-five different types of this game from medieval Europe. The game kvátrutafl is an Icelandic version that originated in the twelfth century (McLees 1990: 34–35). The board consisted of 2x12 triangles, and the purpose of the game was for each player to move their own gaming pieces off the board (Bell 1960: 43–44). The kvátrutafl-boards were bigger than the chessboards, and the circular discs used for kvátrutafl were too big for the squares on a chessboard (Murray 1941: 58). From the middle of the thirteenth century, chess seems to have increased in popularity. This led to the downfall of hnefatafl and the game was forgotten for

FIGURE 2.3
A king plays kvátrutafl (detail from Olaus Magnus [1555]).

centuries. The popularity of chess did not, however, seem to inflict upon the use of kvátrutafl. A reason for this might be found in the use of dice in the game. Where hnefatafl was a strategic game, much like chess, kvátrutafl might have survived because the players to some extent had to rely on luck. This feature of chance provided an opportunity for gambling (McLees 1990: 35).

Chess (skáktafl)

Chess is a strategic war game. Each player has sixteen gaming pieces – eight identical pawns and eight officers. The purpose of the game is to capture the opponent's king through a battle where the pawns might be sacrificed for the more powerful officers. In the Middle Ages the rules were somewhat different from today. The pieces were less powerful than in today's games, and the boards had only one colour. The gaming pieces themselves could, however, be quite elaborately crafted. The boards with the black and white grid that we know today became common during the High Middle Ages, and from the second half of the fifteenth century onwards, pieces with a circular base and the shape we know today came into use (Lundström and Sølvberg 1977: 14).

The game originated in India during the sixth century. At this point it was known as *chaturanga*. Originally it was a game for four players and a die was in use. Gambling did, however, become prohibited in the Hindi culture and the die vanished. Eventually the four armies became two, providing the duplication of pieces one can see even today (Bell 1960: 51ff). The game then spread from India towards China and Japan, but also westwards towards Persia. At this point the name became *shaturanj*. The Arabs brought the game to many countries. It was brought to Spain by the Moors in the eleventh century and spread north after this. It was known in Great Britain before AD 1100 (Murray 1951: 83–84).

Chess is believed to have reached Scandinavia during the twelfth century, perhaps even as early as the latter part of the eleventh century (Carelli 1998: 135; McLees 2001: 50). But Scandinavians might have been familiar with the game as early as the Viking Age. Chess is mentioned in *Heimskringla* and Snorri Sturluson's tale of Knut the Great and Jarl Ulf's argument over a chess game in 1028. This story cannot be relied upon and probably Snorri is replacing the saga reference to hnefatafl with that of the contemporary game of chess in the thirteenth century (Murray 1962: 443; *KLNM II*: 224). However, it is not unlikely that the Vikings encountered the game during travels in Europe, and to Byzantium (Michaelsen 1992: 55). Still, archaeological evidence confirms the playing of chess by the mid-twelfth century. This suggests knowledge of the game for some time, but as of yet, there is no certain physical trace of the game being played in Scandinavia during the Viking Age.

The most famous archaeological chess artefacts are the Lewis Chessmen that were found on the Isle of Lewis in Scotland. The find consists of nearly four sets of chess

gaming pieces that were crafted from walrus tusk. The pieces are all shaped in a figurative style and they are dated to the twelfth century (Stratford 1997). The current theory is that the Lewis Chessmen were crafted in Norway, more specifically Trondheim. If so they represent one of the earliest traces of Scandinavian chess artefacts (McLees 1990; Caldwell et al. 2009).

When it comes to medieval chess in Scandinavia there were three different styles of gaming pieces. One type was carved in a recognisable, Islamic-derived abstract style. This style developed since human depictions are not allowed in Islamic tradition. However, figurative pieces were common in Norse areas and were developed during the twelfth century. This style was in use in Europe, and in the twelfth and thirteenth centuries the style was fairly widespread in Scandinavia. New abstract chess pieces that were lathed, appeared in the late Middle Ages (Carelli 1998: 141–142).

Alquerque and draughts

Draughts-games have a long history as this type of game was known in Egypt before BC 1000. The forerunner of draughts was a game called alquerque. The board consisted of four merels-boards that were merged together (Fig. 2.4). The two players had twelve gaming pieces each, and the pieces could be moved along the lines on the board to a free point. The purpose of the game was to remove the opponent's pieces, and this could be done by moving a piece over the opponent's. Should several pieces be *en prise*, the player could remove all of them in one move (Murray 1951: 65; Bell 1960: 47–48).

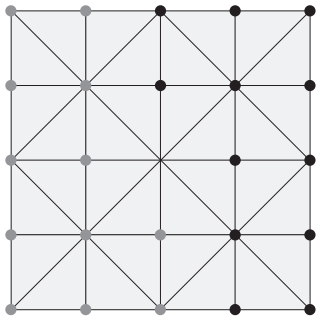


FIGURE 2.4 Alquerque, based on Murray (1951).

The draughts-game appeared in areas in southern France around AD 1100. The rules and moves from the alquerque game were still in use, but the board became an 8x8 squared chessboard. The flat circular discs used for gaming pieces were quite smaller than the ones used for the game kvátrutafl (Murray 1951: 117; Bell 1960: 71). Draughts did apparently spread slowly. The game is mentioned in five written sources before AD 1500, and Murray interprets this as the game not reaching any widespread popularity before this time (Murray 1951: 75–76). A find of an alquerque board in Trondheim dated to the sixteenth century seems to support this theory, at least in the case of Norway (McLees 1990: 36).

Merels

The game *merels* has a long history as different variants of the game were in use by the Greeks and Romans, and eventually also by the Chinese. Several variations of the game existed where one could play with three, six or nine gaming pieces, which is

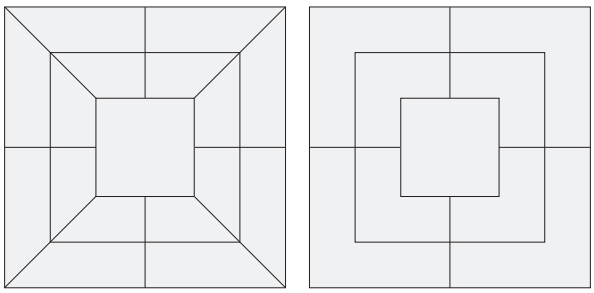


FIGURE 2.5 Merels with and without diagonal lines, based on Murray (1962).

also indicated by other names of the game; *three men's morris, six men's morris* and *nine men's morris* respectively. The purpose of the game merels, which is played with nine gaming pieces, is to add pieces on to the board and attempt to place three of them in line while thwarting the opponent's attempts. When this is achieved one of the opponent's pieces will be removed from the board, and the loser is the player who in the end is left with two pieces on the board (Bell 1960: 91ff).

The game was in use in Norway during the Viking Age indicated by the find of a merels-board in the Gokstad ship-burial (Nicolaysen 1882: 46–47). Double-sided boards with a combination of hnefatafl on one side, and merels at the other seem to have been common in the Viking Age and the Middle Ages. After some time diagonal lines were added to bind the squares together (Fig. 2.5). When it comes to the type of gaming pieces used, there is some uncertainty. Any shape could have been used, and the same goes for colour and decoration. It would have been more important to be able to separate each player's pieces than to play with a distinct type (McLees 1990: 36, 168). One might also have used dice to even the odds, since they favoured the player who began the game by placing a piece on the board. This is most apparent in three men's morris (Bell 1960: 92).

Merels can be played by both adults and children. As more challenging games were added to the Scandinavian gaming repertoire, merels became known as a children's game (McLees 1990: 36).

Dice

Dice-games represent one of the oldest forms of games. They embody the aspect of chance more than any other gaming artefacts, and they are perfect for gambling which they assuredly have been used for. The fact that the Urban Code of Bergen 1276 forbids gambling, tells of an activity in the town that the authorities saw as a problem that needed to be dealt with. Dice could also be used as part of board games, for example in kvátrutafl and merels, but it was not unheard of to use them for games such as *hnefatafl* and chess as well even though they were not needed (Bell 1960: 123–124; McLees 1990: 36–37). It is therefore quite clear that dice represent the most diverse gaming artefacts from the medieval gaming repertoire.

3 | Methodological approaches

To approach the research questions posed in the introduction, different methodologies combining theory and data are required. A necessary prerequisite is to identify and classify the gaming material – a limited artefact category – requiring the analysis to be based mostly on qualitative research, but the assessment also includes quantitative representations.

Identification

The basis for this study is the identification of the archaeological finds as gaming artefacts. The prerequisite for such identification is to compare the archaeological finds with ethnologically and historically known materials where usage is already an established fact (Øye 1988: 20–21). The identification is based on this principle. In addition, the selection is based on knowledge which has already been determined by other researchers regarding this artefact category. One of the main purposes is to identify the artefacts and relate them to specific games, many of which are known, as are many of the gaming pieces and the boards. Chess pieces are an example of gaming pieces that can be identified by shape because we know how the shapes developed throughout the Middle Ages with abstract, figurative and new-abstract shapes. The game hnettafl on the other hand is a game that is difficult to identify because there is little certain information as to the shape of the pieces. The selection of gaming artefacts for this study derives from all the excavations in Bergen where such artefacts have been found. To be able to find and present the assemblage required a search among all the artefacts that are stored at Bryggens Museum in Bergen. A comparative study, such as this, of all the gaming artefacts found in Bergen, has not been carried out earlier.

Gaming pieces are a type of gaming artefacts that varies enormously when it comes to shape – even small pebbles could be used for this purpose. Gaming pieces – made with the intent of using them on a board – would usually be small so as to fit the different patterns of the boards. Size is therefore an important criterion for identifying an artefact as a gaming piece.

In addition there are some challenging aspects to the identification of gaming artefacts. This especially applies to fragmented artefacts. I therefore distinguish between *certain* and *possible* gaming pieces. Some artefacts could be identified as certain gaming pieces in spite of their fragmented state, particularly where parts of the edges or mid-sections of the gaming pieces are intact.

Identification of the raw material that was used to make the artefacts is also a part of the identification. However, a precise analysis of the material lies outside the

framework and possibilities for this study, and the aspect is therefore open to further analysis. For this study the gaming artefacts are divided into groups of raw materials, such as wood, bone, stone and clay. In a few cases gaming pieces of bone could be distinguished as made of horns, antlers and whalebone. Wherever possible, the type of stone has also been identified, but this is not consistent for the study. Another challenge to the identification is artefacts made of wood. Of all the materials this one can be difficult to identify as a long time in cultural layers and later preservations might have altered the shape considerably. These are important factors to consider when measuring both the size and the base of the gaming pieces.

The use of décor can also be decisive when identifying gaming artefacts. Whether the different patterns have had another function is uncertain, but it is likely that décor was used for distinguishing the different pieces on the board. Another challenge is to decide what markings on the gaming pieces actually constitute a consciously inserted decor. Patterns and markings without any discernible function other than being decorative or as markings have been identified as such. Small holes that have been carved into the gaming pieces represent another challenge. Many of the gaming pieces, both flat discs and tall pieces, have small holes underneath the base, no more than 1–3 mm wide. For the most part these holes are centred – very likely a result of lathing. In other cases they are not centred, and often there is more than one hole as well, usually two or three on the same piece. Because of this difference, the holes are identified as a type of décor, but it should be noted that in many cases they may simply be marks left due to methods of production.

As a part of the identification process some artefacts have also been excluded as gaming artefacts. The reason for this is that they cannot be identified either as certain or possible gaming artefacts, and uncertain gaming artefacts cannot give answers to the research questions in this study. This exclusion applies to artefacts such as possible spindle-whorls. They represent a group of artefacts that can be quite similar to gaming pieces, but they had a very different function, which can be deduced from the hole in the middle for the whorl – a hole that has to be centred and of a certain width. For both these artefact categories the shape, size and decoration is very similar – something that makes it easy to confuse them with one another – but the centred hole clearly shows the function (Øye 1988: 37–38).

It is also possible that some spindle-whorls represent reused gaming pieces, but the uncertainty of this makes it difficult to draw conclusions with any certainty. There are only two cases of reused spindle-whorls, and they have been identified as such because of the holes and their placement in relation to the decorations on the artefacts. In one case the hole damages the décor and on the other it is placed wrongly in relation to the décor, which makes it likely that they are gaming pieces with décor and reused for spinning.

Another criterion for excluding artefacts from this study is size. Some possible gaming pieces of stone are too big to be used on a board. The diameter of the base of a gaming piece is therefore essential for identifying them as such. Stone discs that are oversized for a board (often more than 80 mm in diameter) are therefore excluded from the study.

Classification

The classification of the gaming artefacts has been done based on both form and function the artefacts had in different games (Dark 1995: 79). The objects have been divided into four main functional groups; gaming boards, gaming pieces, dice and jetons, and furthermore into subgroups based on their shape, such as flat circular discs, cylindrically shaped pieces, square shaped pieces, and so forth. The aim is to reveal differences and similarities, and to use the diversity of the gaming material as a basis for connecting them to the different board games that were used in medieval Bergen.

Representativity

The archaeological records are only able to tell parts of a story, since they only consist of the remnants of what was once there. Because of this one must always be conscious of the different aspects that affect the archaeological records.

When looking at the issue of representativity, numbers are not the only aspect – the condition of the artefacts is also vital. This leaves several factors to assess, i.e. raw material, size, preservation, storage and conservation. The gaming material from Bergen consists, for the most part, of organic materials, and most of the artefacts are also quite small and therefore can decompose more easily. At the site of Bryggen the conditions for preservation in the cultural layers also vary, being best in the deeper parts of the cultural layers, and especially in the waterlogged areas along the waterfront.

Another aspect concerns the altered size for some wooden gaming pieces, as they are affected by both preservation conditions in the deposited layers, and the following conservation. A relatively large number of the wooden artefacts no longer have the originally intended shape. The gaming pieces made of stone represent a different matter as they have been affected by neither fires nor preservation.

Complete sets of board games have not been uncovered in Bergen. There are many reasons for this, as parts of, or whole sets might have been destroyed in fires, thrown away or simply been misplaced or lost. The latter alternative probably represents the most common problem with the gaming material as it consists of small items that were fairly easy to lose.

Gaming boards constitute the second smallest group of gaming artefacts. These are artefacts that might break easily and they were likely thrown away afterwards. It is highly likely that gaming pieces would be carried around and used on boards drawn on the ground or marked on wooden floors, something that would reduce the need for regular boards.

Archaeological research on waste disposal in medieval Bergen (Økland 1998) indicates that it did not play a significant role until the fifteenth century. Until then garbage seems to have been disposed of within the different plots or as mass in the man-made fills along the waterfront. This indicates that lost or thrown away gaming artefacts were probably used in the nearby area where they were found, but not necessarily exactly there, as many seem to have ended up as waste in fillings outside the wharf or were dropped between buildings. Very few gaming artefacts have been found *in situ* in fire layers, especially those made of organic material such as wood and bone. Still, some are listed as in situ finds in the documentation from the archaeological excavations and will be considered as such, but with the reservation that their in situ status is somewhat uncertain.

Dating of the artefacts

For the artefacts uncovered at Bryggen, the established fire layer chronology is used. This chronology is based on the fire layers that were uncovered during the excavations, and they have been correlated to historically known fires in Bergen (Helle 1998: 9). The cultural layers between the fire layers have been divided into eight periods numbered 1 through 8 (Herteig 1990: 16–17). The fire layer chronology represents the most important source for dating the gaming artefacts found at Bryggen (cf. Øye this volume, Fig. 1.3).

Parts of the gaming material derive from smaller excavations that have been carried out in parts of Bergen other than Bryggen. Although fire layers have been used for dating there as well, dateable artefacts and other methods such as C-14 dating have also been utilised.

Spatial analysis

To illuminate the research questions for this study, the spatial context of the artefacts is also taken into consideration. The extensive Bryggen site of 5,700 m^2 is best suited for such a study in trying to trace patterns of distribution associated with different structures. There are, however, a few uncertainties related to differences in excavation methods over the years (Herteig 1990–91; cf. Øye, this volume, Fig. 1.2). An aspect of the spatial analysis is to study the gaming material in association with its context

of usage which includes buildings, passages, wharfs etc. For this purpose I especially distinguish between front and rear areas – and areas connected to commerce and living quarters (e.g. Moldung 2000; cf. also Reinsnos, this volume), when trying to trace areas for such activities and possibly who the players were. Gaming pieces represent an artefact category that should be able to shed some light on patterns of distribution as they have likely not been disposed of far from the area where they were used (McLees 1990: 21).

4 | Identification and classification

In this section I identify and classify the artefacts belonging to different board games. Altogether 1108 artefacts have been identified as certain or possible gaming artefacts. Even though both categories are included in the study, I do not differentiate between them unless there is a high degree of uncertainty associated with a whole group of artefacts.

Function

The artefacts are divided into four functional groups; (1) gaming boards, whose function is to provide a pattern on which to move gaming pieces, (2) gaming pieces, whose function is to be moved according to certain rules within a specific pattern, (3) dice, which can be used for board games but also represent games in their own right, and (4) jetons, which were used for games, preferably in a financial context. These four groups are subdivided into smaller groups based on differences in shape. This division applies to the gaming pieces in particular, but also to the gaming boards. An assessment of which types of games the artefacts relate to is based on these groups of classification, as several can be identified by already known shapes. Still, there are artefacts that very likely represent special types of games, even though the exact type of board game cannot be identified.

Gaming boards

Gaming boards are a group of artefacts that can be identified as belonging to a specific type of game and therefore also provide information for the interpretation of gaming pieces.

Altogether, seven gaming boards, all made of wood, have been found. Because of one double-sided board, eight gaming patterns are represented. The criterion for

identifying a gaming board is the presence of a pattern that has been carved into a flat space where one can move gaming pieces. The seven identified gaming boards represent three different games: merels, hnefatafl and chess. Merels requires flat and circular discs, and each player has nine pieces. As for hnefatafl there is more uncertainty when it comes to a set number of gaming pieces as boards of different sizes have been found. However, the pieces used for this game were tall, as were the pieces used for chess where each player has 16 pieces.

Gaming boards with pattern for merels

Five of the boards have patterns for merels. There is little variation between these boards and none of them have diagonal lines.

Wooden plate with pattern for merels (BRM 0/20509) (Fig. 4.0, 4.1): Rectangular shape. There are seven square holes preserved that surround the carved pattern in addition to a square hole in the centre. On the back of the plate a curved pattern has been carved on one side. A small piece of the plate has been broken clean off, but the piece and plate are stored together. The board is 12 mm thick and measures 125x170 mm. The space between the lines in the pattern is c. 20–30 mm.

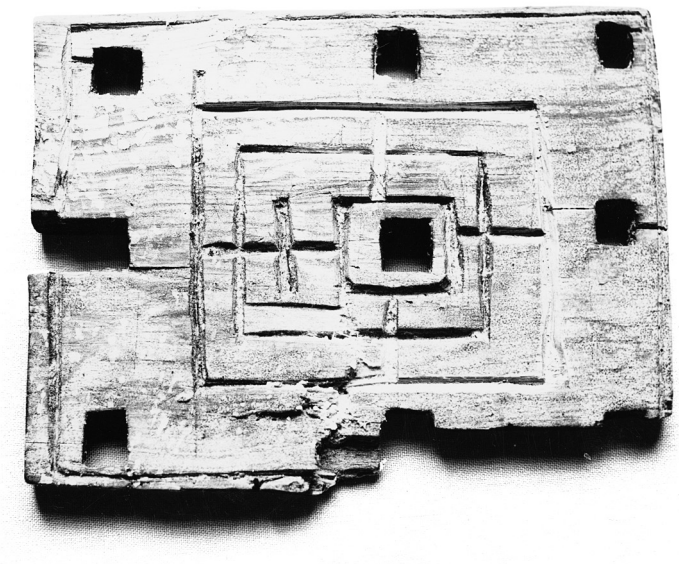


FIGURE 4.0 Wooden plate with pattern for merels (BRM 0/20509).

Wooden plank with pattern for merels (BRM 0/06592) (Fig. 4.1): Rectangular shape. Fairly straight lines have been carved deeper on the left side and are therefore more visible. The wood is dry and cracked, which might explain the uneven pattern. The size of the game is c. 120x140 mm, with c. 20–30 mm between the lines.

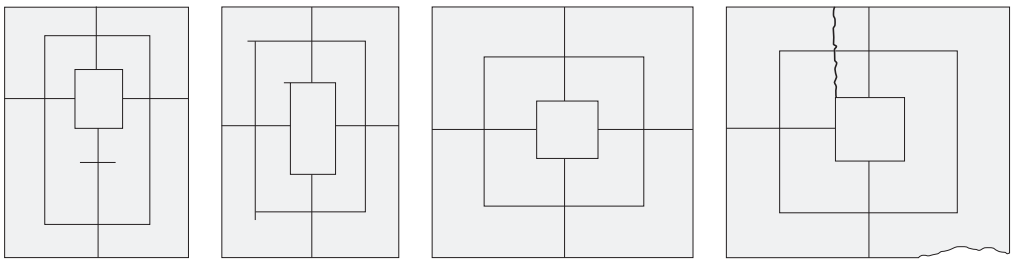


FIGURE 4.1 Reconstructed patterns for the merels-boards (BRM 0/20509, 6592, 90894, 26329).

Wooden plank with pattern for merels (BRM 0/90894/62792) (Fig. 4.1): This plank has been a floor board, quadratic shaped, with shallowly carved lines that are not quite straight. They are not equally long on all sides either. The size of the game is c. 165x180 mm, and even though the sides are not equally long the impression is still that of a quadratic shape. The space between the lines measures c. 20–40 mm.

Wooden plank with pattern for merels (BRM 0/26329) (Fig. 4.1): Quadratic shape with deeply incised straight lines. The dried and cracked wood makes a few of the lines less defined. One corner is broken and an extra line in the pattern seems to be a crack, more than an intentional line. The size of the game is 105x110 mm but the impression is still that of a quadratic shape. The space between the lines measures c. 20–40 mm.

Wooden plate with pattern for merels on one side and hnefatafl on the other (BRM 0/21474) (Fig. 4.2): The board is broken in two, and one half is missing. The pattern for merels is clearly defined with straight and visible lines. The space between these measures c. 30–45 mm. Based on what is left of the board it seems to have had a quadratic shape, and it is a bigger board than the aforementioned merels boards, making it likely that larger gaming pieces were required for this one. The wooden plate is 22 mm thick and it measures 410x160 mm in width.

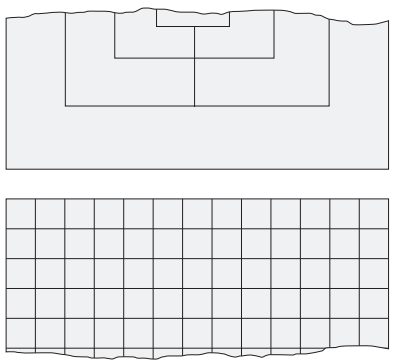
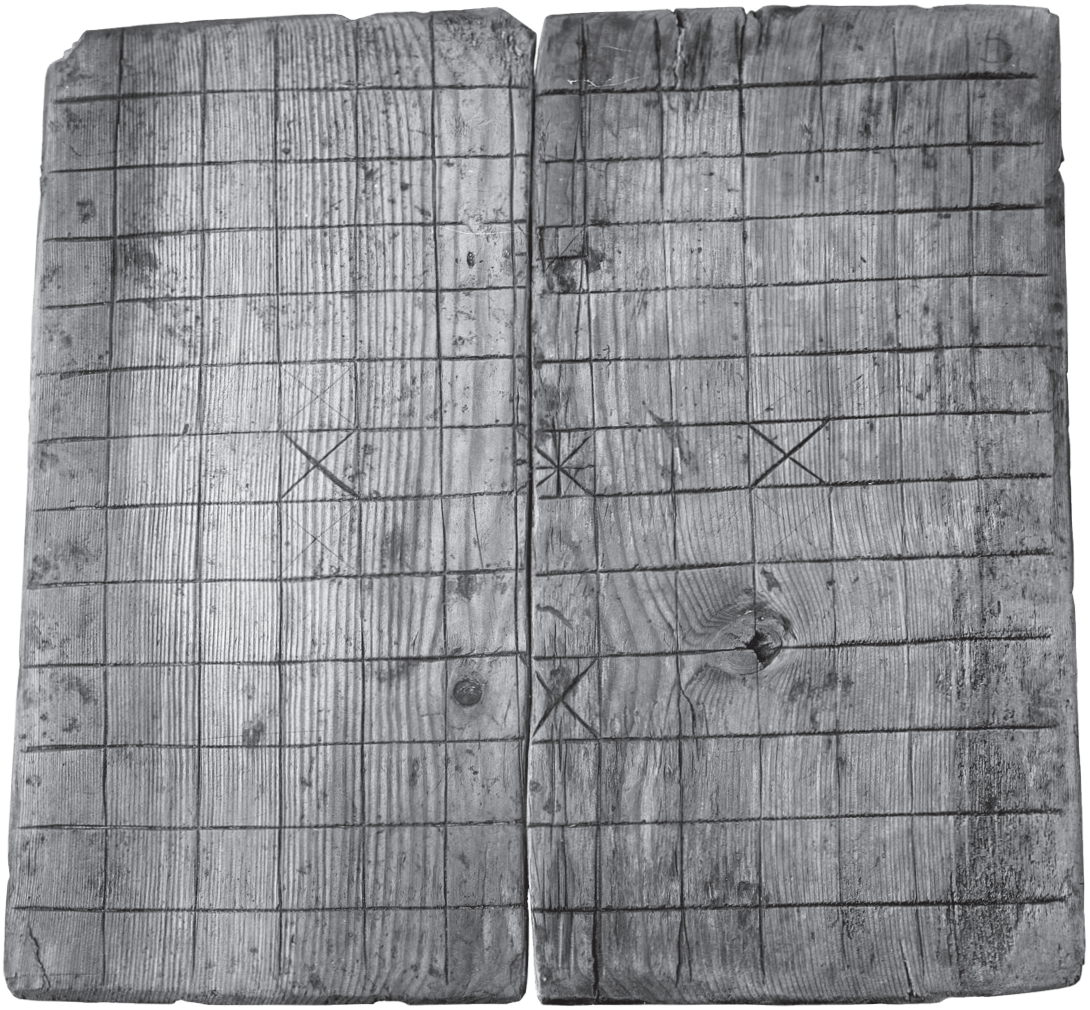


FIGURE 4.2 Reconstructed pattern for the double-sided merels- and hnefatafl board (BRM 0/21474).



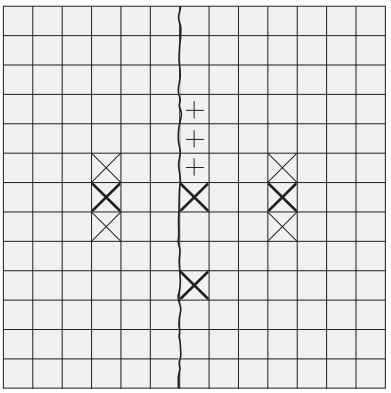


FIGURE 4.3 Hnefatafl-board from Bryggen, dated to the fourteenth century (BRM 0/06521/01), and its reconstructed pattern.

Gaming boards with a pattern for hnefatafl

Wooden plate with a pattern for hnefatafl on one side and merels on the other (BRM 0/21474) (Fig. 4.2): The board is broken in two and one half is missing. The longer side counts thirteen squares, whereas the shorter side counts five and in some cases six squares towards the broken side. A few lines that expand from the thirteen squares indicate that the board may have been bigger. The sides also seem to have been sawn off. This does not, however, weaken the identification of this board as a hnefatafl-board as such boards have been found with as many as nineteen squares. There are no traces of any markings on the squares. As mentioned the wooden plate is 22 mm thick and it measures 410x160 mm in width. The squares measure c. 30x30 mm.

Wooden plate with a pattern for hnefatafl (BRM 0/06521/01) (Fig. 4.3): The board is broken in half but both pieces have been preserved. The board has a quadratic shape with a grid of 13x13 squares marked with straight lines for the most part. The wood is dry and cracked, particularly along the edges. The board has been broken in two along one of the lines almost in the middle, resulting in the preservation of the squared grid. Eleven squares have been marked with crosses – some more deeply incised than others – and they form a fairly symmetric pattern. This is most likely relevant to the positioning of the gaming pieces at the start of the game as they form a symmetrical pattern as well. The wooden plate is 20 mm thick and it measures 470x480 mm. The squares measure c. 35x35 mm.

Gaming board with a pattern for chess

Piece of wood with a carved pattern for chess (BRM 0/29056/91984) (Fig. 4.4): The wood is broken along two of the four sides and it shows 8x5 squares, and 8x6 in some places. Along one side it is clear where the lines start, but on the broken sides it is difficult to determine whether the lines have been longer or not. It is, however, very likely that this is a chess board that originally had an 8x8 square grid. The fact that there are eight squares in one direction on the board signifies this, but it is possible that there were originally more (or less) squares in the other direction – though that would have been highly unusual. The carved lines are clearly defined despite the cracked wood, and the board measures c. 230x405 mm. The squares measure c. 40–50x40–50 mm.

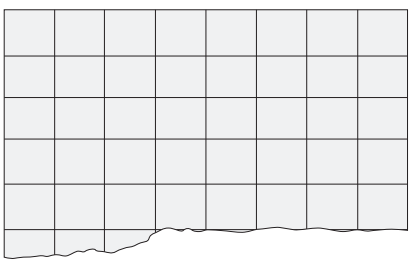


FIGURE 4.4 Reconstructed pattern for the chess board (BRM 0/29056).

Evaluation of the gaming boards

The gaming boards demonstrate that games such as merels, hnefatafl and chess were known in Bergen in the Middle Ages. The size of the squares on the hnefatafl and chess boards gives an indication of the size of the gaming pieces as well. The squares indicate that the base of the chess pieces cannot have been bigger than 40 mm in diameter, whereas the base of the hnefatafl- pieces cannot have been bigger than 30 mm for one board, and 35 mm for the other. The base of the gaming pieces for the merels boards might have been 20–30 mm in diameter, and somewhat bigger for the double-sided board. Since only seven gaming boards have been uncovered in Bergen – compared to more than a thousand gaming pieces – they cannot fully function as a guideline for size as they hardly give a representative picture of either size or types of games.

Gaming pieces

Gaming pieces constitute the largest group of artefacts associated with board games, and occur in many different shapes. The main criterion for identifying an artefact as a gaming piece is that it is of a size for being used on a board, and can stand on it. Gaming pieces occur as rather flat discs with different geometrical shapes: circular, oval, squared and octagonal, and as tall gaming pieces, usually with a cylindrical or conic shape. Flat circular and oval discs are the most common shapes, and with little variation with regard to material, size and décor.

The gaming pieces are made of bone, wood, stone, clay and metal. Of the 1108 artefacts identified as gaming artefacts, 1068 have been identified as gaming pieces, altogether 96 per cent of the total assemblage. A large number of these artefacts are fragmented in various degrees due to wear and other damage. It has still been possible to identify these fragments, because certain recognisable traits are still visible. The shapes of the gaming pieces are also significant for the formal classification, which in turn will give indications as to what types of games they belonged to.

Flat circular discs – group A

Group A consists of flat circular discs that are of approximately similar shape. They are relatively uniform, but a few characteristics separate them. As a result, they have been subdivided into four groups A1–A4. These gaming pieces likely constitute a group used for kvátrutafl and merels. Alquerque is also a possibility, though no such boards have been uncovered in Bergen so far. However, one has been found in Trondheim, so familiarity with the game in Bergen is not impossible. The gaming pieces with a hemispherical cross-section (A4) share similarities in shape with gaming pieces from the Iron Age, but that does not exclude them from being used in the same types of games as all types of discs in group A.

A1: Flat circular discs

Flat circular discs, A1, constitute the largest group of gaming pieces with 872 pieces. This makes 82 per cent of the total number of gaming pieces. The raw materials represented are bone, wood, stone and clay, including one piece of unidentified raw material. Some of the flat discs are possible spindle-whorls, but only those with holes too small to be able to function as spindle-whorls have been included here. In addition there are two discs where the holes clearly destruct the intended decoration, which indicates reuse. As for the rest of the flat circular discs, there are some cases that pose a difficulty when separating them from potential unfinished spindle whorls. 34 gaming pieces have been excluded from the survey of size (see Fig. 4.9) because of damage that makes it impossible to measure their original diameter.

A1: Wood

This group consists of 362 gaming pieces. Of these, 151 (42 per cent) are decorated whereas 211 (58 per cent) are not. This constitutes the largest group of flat circular discs, but also the largest group of gaming pieces overall. They have a very basic design, and they occur with and without processed edges and surfaces. There are few examples of knotholes, and the gaming pieces have been cut with and across growth rings. This indicates that the wooden pieces, as well as the bone pieces, have been cut from flat pieces. Some of the discs seem to have been lathed, but most have been carved, as indicated by the uneven edges. Many of the discs are broken, either in two or only part of an edge. Many are cracked, bent or squashed, but it is still possible to identify them as circular discs. The wooden discs are often complete. The diameters of the flat circular wooden discs vary from 22 to 81 mm, with a mean of 41–50 mm (see Fig. 4.8). The height varies from 2 to 49 mm, but is mostly not more than 15 mm.

Decoration

Many of the wooden discs with carvings have one, two or three little holes on one or both sides. Not all of these holes are centred, which indicates a purely decorative function. For the most part the wooden discs are decorated with circles, small ring-and-dots and concentric circles in different variations. Three of the wooden discs have symmetric patterns. Furthermore, discs sometimes have spiral patterns and more simple lines (Fig. 4.5). Ten discs are decorated with crosses, mostly Greek crosses, but also saltires.

A1: Bone

There are 205 bone discs in all, and of these 179 (87 per cent) are decorated while 26 (13 per cent) are not. Four unfinished discs are also included in this group. Even though the size varies these discs have a fairly uniform and simple design. The discs

FIGURE 4.5 Decorated wooden discs (BRM 0/ 6019, 8796, 39485, 42133, 45080, 5668).

are circular and flat and for the most part they have processed edges and surfaces, which is a great help when identifying fragmented pieces. Some of the bone discs have porous middle sections, an indication that they were cut across the bone, but most of them lack this particular mid-section, which shows that they were cut along the length of the bone. This is also the case with the four unfinished discs. For three of these the purpose has been to carve two discs, but the fourth only has a pattern for one. The unfinished discs are oblong pieces of bone, and clearly show how the discs were made and that they were produced locally. One of them has also been sawn in half before the discs were cut out, leaving them cut in half as well. After this, the unfinished discs seem to have been discarded. In general the flat circular bone discs have been lathed or drawn and then carved. The diameter of the bone discs varies from 22 to 70 mm with a mean of 41–50 mm (see Fig. 4.8). The heights of the discs vary from 2 to 41 mm, though most are less than 20 mm.

FIGURE 4.6 Examples of decorated bone discs (BRM 0/ 46420, 45937, 45499, 38930/02, 20037, 11994, 14006, 21018, 8832, 4732, 15096).

Decoration

Circular patterns dominate the bone discs, and in particular concentric circles. Small dot-and-rings also occur in addition to small holes, usually on one side. All these types of patterns occur in various combinations (Fig. 4.6). The depth of the grooves differs as there are examples of both deep ones and weakly incised ones. In some cases the pattern has been lathed into the disc, in others it has been carved by hand. The smallest circles have been applied with pressure.

A1: Stone

This group consist of 271 flat stone discs. Of these, 66 (24 per cent) are decorated whereas 205 (76 per cent) are not. Out of the 271 discs, 160 (59 per cent) are – based on my identification – made from soapstone. The rest are made from slate and other types of stone. The design is quite simple with processed surfaces and edges that in most of the discs are smooth. As with all the flat circular discs there is some uncer-

FIGURE 4.7 Examples of decorated stone discs (BRM 0/ 68332, 2127, 70899).

tainty regarding the possibility of some discs being unfinished spindle-whorls. As a result, only flat circular discs without perforated holes are included. One disc without a perforated hole has been excluded because it was found in the same context as some spindle whorls, and bears a resemblance to these in size and design. The stone discs are on average smaller than their counterparts made of wood and bone. They vary in width from 12to 71 mm, with a mean of 31–40 mm (Fig. 4.8). The height varies from 2 to 28 mm, but most of them are less than 20 mm.

Decoration

Of the stone discs with a carved pattern, several are decorated with concentric circles or simple circles. Several have one, two or four small holes on one side, and one disc has parallel lines on one side. Four discs have been decorated with a cross on one side (Fig. 4.7).

A1: Size – wood, bone and stone

The gaming pieces of type A1 are of an even size, most of them between 21 and 75 mm, but the stone pieces are somewhat smaller (Fig. 4.8). Most of the stone discs are 21–40 mm in diameter, but some of them are smaller than 20 mm. The wooden discs have a mean of 41–50 mm, whereas a large number of bone discs measures from 31 to 50 mm in diameter. Considering the gaming boards that have been found, the discs seem to be larger than what one would expect from them. This might indicate that a substantial number of group A1 might be related to alquerque, draughts or *kvátrutafl,* games that have not been identified from boards in Bergen.

Assessment of group A1

There are great similarities between the gaming pieces in group A1. Despite differences in their condition because of the different types of raw material, the design is

the same. The discs are flat, circular and have a height of a few millimetres. The edges and surfaces can be uneven on all the different types of raw material. The decoration is also very similar. Circular patterns occur in different combinations, and crosses are also common. Gaming pieces of bone are more frequently decorated than those of wood and stone and also have the most elaborate ornamentations. Crosses only occur on discs of wood and stone. The wooden and bone discs are on average of an equal size, while the stone discs are on average 10 mm smaller (see Fig. 4.8). As for raw material, the wooden, bone and stone discs have decorations on 42 per cent, 87 per cent and 24 per cent, respectively, of the total number in each group.

A2: Flat oval discs

Group A2 consists of 90 gaming pieces, which equals 8 per cent of the total number of gaming pieces. The raw material used is bone, wood and stone. As for size, both the longest and shortest diameter has been measured. However, considering the gaming boards they were used for, the longest diameter is given most significance. Five discs could not be measured due to damage and are excluded from the survey of size (see Fig. 4.9).

A2: Wood

This subgroup consists of 62 discs of wood, of which 26 are decorated (40 per cent). It cannot, however, be ruled out that the discs may have originally been circular and many of them have clearly been squashed and have an uneven shape. Considering this uncertainty, the oval discs are still classified as a group based on their current shape.

The decorations are consistently simple. Several of the decorated discs only have a small hole on one or both sides. Concentric circles also occur and one disc also has carved stars. One specimen has a circle carved around its edge, while another has shallow traces of a simple line on one side. Yet another disc has a perforated hole, but this is probably a result of a removed knothole. As a whole the decoration is rather simple. The diameter of the flat oval wooden discs varies from 30 to 71 mm, with a mean of 41–50 mm (see Fig. 4.9). The height varies from 2 to 18 mm.

A2: Bone

Subgroup A2 comprises seven discs of bone, of which six are decorated. Even though some of the discs are cracked and broken it is highly likely that the oval shape is original.

As for the discs with a carved pattern, four have concentric circles and two have dot-and-rings. Simple circles also occur in addition to a disc that has a small hole on one side. The diameter of these discs varies from 34 to 57 mm, with a mean of 41–50 mm (see Fig. 4.9). The height varies from 5 to 9 mm.

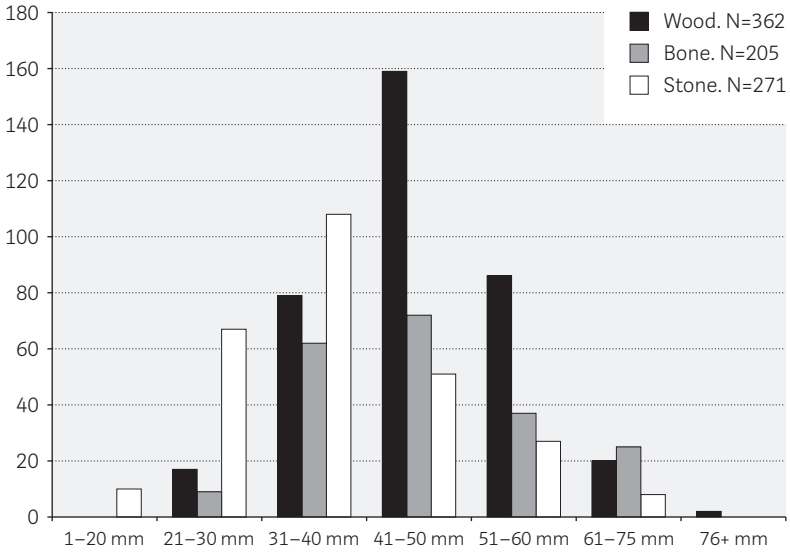


FIGURE 4.8
Flat circular discs. Diameter measured at the base of the gaming pieces.

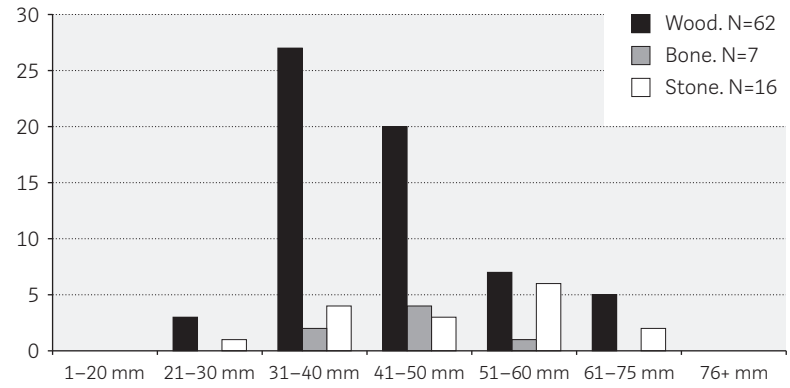


FIGURE 4.9
Flat oval discs. Diameter measured at the base of the gaming pieces.

A2: Stone

This subgroup of A2 consists of 16 discs. None of them are decorated and their shape (and material) indicates that they were originally oval. Four are made from soapstone and two from schist. The diameter varies from 21 to 73 mm, with a mean of 41–50 mm (Fig. 4.9). The height varies from 5 to 15 mm.

Size – group A2

Figure 4.9 shows that the discs of group A2 are fairly even in size – ranging from 21 to75 mm. The mean for the wooden discs is 31–50 mm, while the mean for the stone discs is 41–60 mm. The diameter of the bone discs varies from 31 to 60 mm, with a mean of 41–50 mm.

Assessment of group A2

Only the wooden and bone discs are decorated, but in a simpler way than can be found on the circular discs (A1). The diameter, measured at the base of the discs, is generally bigger than the diameter of the circular discs (A1) (Figs. 4.8–4.9). What games these discs derive from is uncertain. They might represent an unknown game, but the oval shape might also have been a way to distinguish them from circular discs on a board. As for raw material and décor, 40 per cent of the wooden discs and 85 percent of the bone discs have décor.

A3: Slightly hemispheric discs

Group A3 consists of five discs, two of them decorated. The raw material is bone (3) and stone (2). The hemispheric shape is not distinct, which might be a result of the surface not being completely processed, but particularly the stone discs indicate that the shape is intentional. The two decorated discs both have concentric circles, and one also has two circles around its edge. The diameter varies from 33 to 47 mm for the bone discs and from 53 to 55 mm for the stone discs. The height measured from the base to the highest point of the discs, varies from 6 to 16 mm for the bone discs, and from 7 to 15 mm for those of stone.

A4: Hemispheric shape

Group A4 comprises two gaming pieces, both made of limestone. On one piece the base is circular with a diameter of 37 mm and it is 14 mm in height measured from the base to the highest point. The other piece is broken, and measures 13 mm in height and 39 mm in width. As opposed to the gaming pieces of group A3, the hemispheric shape is more pronounced, stretching from the base to the top. The complete piece shows faint traces of two small holes on the flat side, while the broken piece has no decoration.

Flat discs with other geometric shapes – group B

Group B consists of discs with squared (B1) and octagonal (B2) shape.

B1: Flat squared shape

Group B1 consists of six gaming pieces of stone (3), bone (2) and wood (1). As for the stone pieces, two have a quadratic shape and one a rectangular shape. Their size ranges from 17 to 28 mm in width and 8 to 9 mm in height. Two of the stone discs are made from soapstone, and despite the polished surfaces the design itself is relatively simple.

The squared pieces of wood and bone are larger than those of stone, and all are quadratic in shape. The bone discs measure 28x28 mm and 29x29 mm, while the

wooden piece is larger, 48x49 mm. These pieces are the only ones with decorations: those of bone have concentric circles on one side and the wooden piece a carved square, running along the edge, and additionally a cross carved diagonally on its surface. There are also faint traces of other lines on the same side, but these seem less intentional. The two bone pieces might represent unfinished gaming pieces of type A1.

B2: Flat octagonal

Group B2 consists of two decorated gaming pieces of bone. Four of the eight sides are shorter than the others. This makes it look as if the corners of a squared piece have been cut off, perhaps to distinguish them from other square pieces on a board. They are relatively equal in size, measuring respectively 30 and 7 mm, and 35 and 5 mm in width and height. They are both decorated with concentric circles on one side, formed as deep grooves.

Assessment of group B

What type of board games these gaming pieces belongs to is uncertain, considering that the known medieval games did not require squared and octagonal gaming pieces. It could be a matter of unknown games, or the use of these unusually shaped gaming pieces in already known games.

High squared shape – group C

Group C comprises only two gaming pieces, one made of wood and the other of bone. As opposed to the flat squared pieces (B1), they can stand upright on a board. They have a squared shape, but a part of the top has been cut out, making the corners sharper. The wooden piece has no décor, measuring 40 mm from the base to its highest point, and 32 mm in width at the base. The bone piece is smaller, 27 mm from the base to its highest point, and 17 mm in width at the base. It has a polished surface, decorated with small notches on the pointy corners at the top, in addition to a 'belt' that is carved around its middle, with two perforated holes above this 'belt'. Such gaming pieces were used for chess, as rooks of an abstract shape.

High hemispheric shape – group D

Group D is only represented by one undecorated object made of unburnt clay and shaped like an orb, but with a flat base, and 25 mm high and 23 mm at its widest point. There is some uncertainty as to what board game it belongs to, but most likely hnefatafl, bearing resemblance to Petersen's type B, a type of gaming piece that was well known in the Viking period (Petersen 1914: 86–87).

High, hourglass shaped with base and top – group E

Group E comprises 27 gaming pieces, all made of wood. Many of them have been squashed, particularly around their midsection, which makes it somewhat difficult to deduce their original shape. Still, most of them do have a slight curved shape around the midsection, while others are straighter and some tend towards a conical shape. All of them have a carved base or foot big enough for the piece to stand, and a carved knob or head. The knobs of these pieces have both round shapes and more pointy shapes (Fig. 4.10). The diameter of the base varies from 16 to 30 mm, and 28 to 65 mm in height. Only two are decorated with circles carved around their middle. Gaming pieces with this shape have been used around the world for thousands of years, but for different games. It is therefore not unlikely that they eventually also were used for chess.

Cone shaped gaming pieces – group F

Group F (Fig. 4.11) consists of 15 gaming pieces of bone, wood and metal. All have a distinct cone shape but variations give cause for dividing the group into four sub-groups (F1–F4).

F1: Hemispheric shape with protruding knob

Seven of the conically shaped gaming pieces have a broad base and hemispheric shape with a protruding knob on top. They are made of wood, bone and metal. The height of all the wooden pieces varies considerably in size from 6 to 38 mm, and the bases from 15 to 55 mm. Décor occurs in different forms: as a small stud or hole underneath and as circles carved around the widest point.

The two bone pieces are more homogenous, measuring 29 and 31 mm in height and 25 and 16 mm in width. Both have decorations: one with carved circles around the widest part and around the knob; the other has a circle carved just under the knob, and both have a hole under the base. The gaming piece of metal measures 17 mm in height and 19 mm in width and has no décor.

F2: Piriform

Three gaming pieces have a piriform shape, which is bulbous like F1, but squatter; two are made of bone and one of wood. Just like F1 there is a protruding knob on top, in addition to a flat base. The size varies greatly. The smallest bone piece is 24 mm high and 9 mm at the base, while the biggest is almost double that size, 41 mm in height and 17 mm at the base. Both are decorated with a carved circle under the knob. The wooden gaming piece is the biggest, 43 mm high and 31 mm at its base. It has no decoration.

FIGURE 4.10 Examples of high, hourglass shaped gaming pieces with base and top (BRM 0/ 24580, 18807, 20713, 24071, 18141, 17906, 17590, 32950).

FIGURE 4.11 Gaming pieces of groups F1–F3 of bone, wood and metal (BRM 0/ 2046, 34494, 46465, 31258, 54237, 36610).

F3: Conic shape

Three wooden gaming pieces have a conic shape with straight lines, a knob on top and their widest point at the base or slightly above. They measure from 29 to 62 mm in height and from 17 to 28 mm at the base. One specimen has a small hole under the base.

F4: Bulbous conic shape

Two gaming pieces of bone have a basic conic shape with bulbous features near the base and the middle. The smallest is 22 mm high and 10 mm wide at its base; the other is somewhat bigger, 29 mm high and 16 mm at the base, and both have a small hole under the base. The biggest also has carved circles around its bulbous parts.

Assessment of group F

As there are many similarities between the gaming pieces within the four subgroups of group F, they most likely belong to the game of chess. The pieces within subgroups F1 and F2 are very likely chess pieces, probably pawns, but the possibility of them being used for hnefatafl cannot be ruled out. This is also how their counterparts from Trondheim have been interpreted. F3 and F4 are likely chess pieces, more specifically pawns.

Cylindrical shape – group G

Group G comprises 22 gaming pieces made of wood, bone and stone. They all have a basic cylindrical shape, but with different designs that serve as additional attributes. They are therefore divided into eleven subgroups (G1–G11) to elucidate these differences.

G1: Cylindrical shape with protruding point

Six specimens have a cylindrical shape with a protruding point or snout on the side of the top. Four are made of wood and two of bone. Their shape varies from high and slim to low and wide. The wooden pieces vary in height from 41 to 64 mm and in width from 21 to 40 mm at the base. The bone pieces are smaller, 27 and 30 mm in height and 22 and 28 mm in width respectively. Two of the wooden pieces are decorated; one with a small hole at the base, the other with circles around its 'body', in addition to ring-and-dots carved at the top. Both of the bone pieces have circles around the bottom, middle and top. The specimens belonging to G1 are identified as chess pieces of the Islamic abstract type in the form of knights. The protruding knob on the side of the top signifies a horse's head and is an abstract expression for the knight-piece.

FIGURE 4.12 Group G1 made of bone (BRM 465/931).

G2: Cylindrical shape with notch

One decorated gaming piece of wood has a cylindrical shape with a deep notch carved into its top, and additionally a small stud centred on top. It measures 37 mm in height and 27 mm at its base. The decoration consists of carved vertical lines all around the edge. The G2 specimen is interpreted as a chess piece of the Islamic abstract type. The shape symbolises a throne, the abstract expression for a king or queen. Since the

biggest chair in a set is that of the king-piece, it is difficult to deduce which piece it represents. To be certain of that, both pieces would be needed.

G3: Cylindrical shape with pointy top

Two decorated wooden gaming pieces have a cylindrical shape with a pointed top, one bigger than the other. The smallest is 32 and 22 mm in height and width and the other 45 and 32 mm. Both are decorated with circles; one carved around its middle in addition to a hole at the base, the other with two circles right above its base and under the top. G3 pieces cannot be identified as belonging to any specific type of gaming pieces. That does not, however, exclude this group from being used in games such as chess and/or hnefatafl.

G4: Cylindrical shape with rounded top

One gaming piece of bone has a cylindrical shape with a rounded top, and is hollow inside. It is 18 mm high and 12 mm wide at its base. In all, sixteen pieces belong to the same museum number. One is the aforementioned gaming piece that has been glued back together. Of the other fifteen pieces, at least four gaming pieces can be put together and have the same shape. The gaming piece that has been glued back together is decorated with carved circles just above its base and just under its top, where there is also a perforated hole. It is very likely that the G4 specimens belong to the game of chess as the shape of these pieces resembles that of abstract pawns.

G5: Wide cylindrical shape with flat top

Three wooden gaming pieces have a low and wide cylindrical shape with a flat top. They measure from 20 to 25 mm in height and 21 to 36 mm in width at the base. Only one has some kind of decoration or marking – a deep hole at the base. G5 pieces cannot be identified based on already known gaming pieces, but may have been used in games like chess and/or hnefatafl.

G6: Cylindrical shape with a carved 'head'

Four gaming pieces have a cylindrical shape with a carved 'head' on top, which also is cylindrical but narrower than the rest of the 'body'. Two are made of soapstone and two of wood, measuring respectively 19 to 23 and 25 to 28 mm in width and 47 to 60 and 50 to 55 mm in height. One of the gaming pieces stands out from the others as it has a more rounded shape, particularly the top, in addition to a small hole at its base. G6 pieces most likely represent pawns in the game of chess.

G7: Cylindrical shape with pointy stud

One decorated gaming piece has a cylindrical shape with a pointy stud on top. It is made of wood and measures 49 mm in height and 22 mm in width at its base. The decoration consists of carved vertical lines that continue up towards the stud. This gaming piece is identified as a chess pawn of the Islamic abstract type and shares stylistic traits with that of the Lewis Chessmen pawns.

G8: Cylindrical shape with two protruding knobs

Two gaming pieces have a cylindrical shape with two protruding knobs on the side of the top (Fig. 4.13). Both are made of wood and have the same museum number. They are also of rather similar size: 49 and 50 mm in height respectively and 26 and 21 mm in width at the base. Both also have what appears to be a crack next to one of the protruding knobs, which indicates that they have been made intentionally. G8 pieces are identified as chess bishops of the Islamic abstract type.

FIGURE 4.13 Group G8 made of wood (BRM 0/17422/02).

G9: Cylindrical shape, slightly conical

One wooden gaming piece has a slight conical shape and an 8 to 10 mm wide hole through the whole length. On the side of the hole there are four small triangular holes, in addition to carved circles around the 'shoulder' and the top. The gaming piece measures 36 mm in height and 24 mm in width at the base. The G9 specimen cannot be identified from already known gaming pieces. That does not exclude the possibility of it belonging to the game of chess.

G10: Cylindrical shape with flower

One gaming piece made of bone has a cylindrical shape with a top that has been carved as a flower, described as 'gothic lily-shaped'. It is decorated with horizontal circles in addition to a 5 mm wide and 20 mm deep hole at the base. The gaming piece itself measures 36 mm in height and 27 mm in width at its base. The G10 piece does not belong to an identified group of gaming pieces, but it is a reasonable assumption that it has been used for chess.

G11: Cylindrical shape, miscellaneous

Group G11 consists of four gaming pieces whose basic shape is cylindrical but otherwise damaged. Two of the gaming pieces are made of bone and two of wood. Because of the damage, the measurements have little relevance as to their original size. All the gaming pieces are decorated. Three have carved circles around their edges, and two of these have small holes underneath their bases.

Hourglass shape – group H

Group H consists of two gaming pieces, both made of wood. They are tall with an hourglass shape, and originally they likely had an oval shaped base. One of them measures 40 mm in height and 26 mm in width at its base, while the other measures 66 mm in height and 20 mm in width at its base. Both are decorated with 'belts' around the mid-section and the largest gaming piece has two of these. Group H pieces do not belong to an identified group of gaming pieces, but that does not exclude the possibility that they were used for chess.

Tower shape – group I

Group I comprises four gaming pieces of wood and bone that have a tower shape. There are substantial differences among these gaming pieces which warrant a need to divide them into three subgroups, I1–I3. Most likely all the tower shaped gaming pieces represents rooks for chess.

I1: Conical tower

One gaming piece has a conical tower shape. It is made of wood, measuring 65 mm in height and 18 mm in width at its base. The lower half of the piece has a conical shape, the mid-section has an uneven bulbous shape, and the top is a broad pointy knob. The piece has a hole at its base.

I2: Pointy tower

One gaming piece with a tower shape has an oblong pointy top and a broad base. It is 68 mm high and 12 mm wide at its base. The decoration consists of small circles carved around the whole piece.

I3: Low tower

Two wooden pieces with a tower shape have carved what seem to be crenellations at the tops. Both are circular and short. Their height differs significantly from groups I1 and I2, but the crenellation is reminiscent of a tower shape (Fig. 4.14). One piece

measures 39 mm and 35 mm in height and width, the other is 29 mm in both height and width, and has a 'belt' around its middle. The larger specimen is covered in horizontal circles in addition to a small hole at the base. I3 is identified as a rook for chess of the new-abstract type, which can be deduced from the lathed form.

FIGURE 4.14 Low tower shape (B6240c) H=29 mm.

Zoomorphic shape – group J

Group J consists of two cylindrically shaped wooden gaming pieces with canine shaped heads. One gaming piece measures 33 mm in height and 14 mm in width at its base, the other is 37 and 26 mm in height and width. They are of similar design, though on the largest one a large piece of the cylindrically shaped part is missing. On this specimen, the animal head is more pronounced and even the fur on the animal's snout can be seen. These are likely chess pieces with a figurative design, but exactly what chess piece they represent is uncertain.

Anthropomorphically shaped – group K

Group K consists of four gaming pieces that are anthropomorphically shaped. Because of individual differences, they have been placed in three subgroups K1–K3. Group K represents the most elaborate gaming pieces found in Bergen.

K1: Hooded figure

One wooden gaming piece has a conically shaped body with a carved human head and a hood hanging down at the back (Fig. 4.15). Part of the face is now gone due to damage. It is 50 mm high and 28 mm wide at its base. This gaming piece has a figurative shape, and is identified as a chess piece though exactly what type of chess piece is not certain.

FIGURE 4.15 Hooded figure (BRM 0/39867) H= 50 mm.

FIGURE 4.16
King, queen and knight made of wood (BRM 0/86523, 1296 and 51139). H=62 mm, 66 mm and 68 mm.

K2: King and Queen seated on thrones

Two gaming pieces of wood are figures seated on chairs, giving the allusion of thrones. The figure with a crown on its head is undoubtedly a king. The other one wears a type of headgear that alludes to a queen (Fig. 4.16). This gaming piece measures 66 mm in height and 22 mm in width at its base. The king measures 62 mm in height and 35 mm in width at its base. The details of the decorations are more visible on the king such as the pattern of his clothes, the small crosses on his crown and his curly hair. The queen was a plump lady when excavated but has later shrunk considerably in size. Both the king and queen are chess pieces of the figurative style, and the king in particular bears resemblance to the Lewis Chessmen.

K3: Knight

One gaming piece is shaped like a man on horseback and he carries a large shield on one arm (Fig. 4.16). The details in his face are clearly defined and he seems to be wearing chainmail. The horse is of a more abstract shape. The gaming piece measures 68 mm in height and 53 mm at its widest point at the base. This is a chess piece of the figurative style, a knight. Despite the simple design one can see similarities with gaming pieces among the Lewis Chessmen.

Uncertain/uneven shape – group L

One group of gaming pieces are identified by the features they share with already known gaming pieces. As for what type of board game they belong to, there is no certain answer, particularly since the original shape is not completely certain in all cases. This question therefore remains open.

Eight gaming pieces constitute this group. They are all fragmented and of such uneven shape that the original shape is difficult to define. Despite this it is likely that they are damaged gaming pieces as parts of them show similarities to other gaming pieces. One fragment is so damaged that it cannot be identified at all, but it has the same museum number as three other certain gaming pieces and is therefore included in the group. Only one wooden gaming piece has any kind of decoration – a small hole on one side.

Assessment of the gaming pieces – group A–L

Altogether, the gaming pieces from Bergen show great diversity. The flat circular discs of group A constitute the largest group, with distinct similarities in décor and shape. The gaming pieces that do not belong to this group are considerably fewer, but they are more varied when it comes to décor and shape. As for the gaming pieces in

general, most pieces are simply designed, probably made with knives, but a few have been lathed. When it comes to raw material, wood is the most common, represented by more than 400 gaming pieces. More than 300 are of stone. More than 200 gaming pieces are made of bone, of which nearly twenty of walrus-tusk, which represents the most expensive material. Only two gaming pieces are made of other materials – one of metal and one of clay.

Not all of the gaming pieces have been possible to identify as belonging to a certain type of board game. As some gaming pieces can be identified in relation to already known gaming pieces, the others have been identified based on the earlier presented criteria for identification (cf. pp. 100–102). Group A (A1–A4) can for the most part be connected with such games as merels and kvátrutafl. Alquerque and draughts are also possibilities, but no boards with patterns for these games have been found, which makes it more difficult to distinguish between the flat discs as for use. However, it is likely that smaller flat discs were used for merels and that bigger ones were used for kvátrutafl. Murray also mentions that that the gaming pieces used for kvátrutafl were bigger than the ones used for draughts (cf. p. 96). On the other hand it is not mentioned how big they were and accordingly the actual size for these gaming pieces is unknown. This is a question that will be taken under consideration in the following chapter.

There is also some uncertainty with regards to the flat oval discs (A2), particularly those made of wood. When comparing the size with the flat circular discs (A1) the differences are evident. Similar to group A1, the A2 pieces are of an equal size, but on average A2 is c. 10 mm bigger than A1 in all raw materials (cf. Figs. 4.8– 4.9). This signifies a considerable and intentional difference. One possible interpretation, then, is that the different shape and size were made on purpose to be able to distinguish them on the board. If that is the case, it is likely that they were made for the same games.

Chess is a medieval game where the designs of many gaming pieces are well known. Because of this, several gaming pieces have been identified as chess pieces. This is the case for groups C, G1–2, G7–8, I3 and K2–3. In addition, there are some groups that most likely belong to the game of chess, although with some uncertainty. This is the case for groups E, F1–4, G3–6, G9–10, H, I1–2, J and K1. The width at the base of the chess pieces varies from 12 to 53 mm though in most cases between 12 and 30 mm. This strongly indicates boards of different sizes. The chess board found in Bergen does not provide an answer as to the size of chessboards and their square grids. One should also bear in mind that a chess board would have a square grid that would fit the biggest piece of a set on it – the king. Some of the chess pieces found in Bergen indicate the use of boards with squares that would have measured more than 50 mm.

As for group F1–2, hnefatafl might also be the intended game. There is, however, some uncertainty regarding this as we know less about this game. This leaves me with

a group of artefacts that have been identified as gaming pieces, but not as a specific type of gaming pieces. This applies to the gaming pieces of group B. The gaming boards that have been found show that games like merels, chess and hnefatafl are represented among the gaming pieces. In addition, large circular discs, likely over 50 mm, indicate that also kvátrutafl was in use.

Dice

Altogether, 30 dice (Fig. 4.17) have been uncovered, which makes dice the second largest group of gaming artefacts. All the dice have a cubic shape and they are made of wood, bone and stone. The criterion for identifying a die is that it has several sides with the different numbers displayed on each of them. No die of a rectangular shape has been found in Bergen. As gaming artefacts they are quite versatile and can be used in several board games as well as in pure dice games. Some of the dice show signs of use and wear, but all of them can still be used. Overall the dice are fairly quadratic with only a few having sides of slightly uneven lengths. Only four of them have a slight rectangular shape. As for the design of the corners of the dice, there are two types – pointy and rounded. The latter shape only occurs on the bone dice. It seems that the sharp corners have been filed down to make a more rounded shape. This is the case for four dice, one made of antler-bone and three made of walrus-tusk. All the other dice have sharp corners, including one made of soapstone, which is the largest of the dice found in Bergen. The size of the dice varies from 0.2 cm^3 to 6.8 cm^3, with most of them measuring around 1.7 cm^3.

The dice are equipped with the same type of numbering system as modern day dice, with numbers from 1 to 6 on the six flat sides marked with small ring-and-dots, or pips. The sum of the opposite sides also equals seven, just like today, and prehistoric times. This applies to 21 dice, 18 of bone and 3 of wood. As for the rest, the sum of the opposite sides does not equal seven. This might be because those who made them did not know about this rule, but there is an interesting aspect to the numbering on these dice. On seven of these, six of bone and one of wood, there is a consistency

FIGURE 4.17 Dice made of bone (B6396/c [W=12 mm], B6238/f [W=8 mm]).

to the 'wrong' numbering. The sums of the opposite sides do not equal seven, but they are the same on every dice, indicating an intentional act. As for the largest die made of soapstone, the sums of the opposite sides seem to be arbitrary making this one stand out from the traditional and 'the intentionally untraditional' ones.

The pips are not always in line on all sides. One wooden die even has a pip between two others on the number two side, and this might be what is left of a corrected mistake. On the soapstone die, the position of the pips is generally untidy. On the number four side, there is also a fifth pip/hole at the outermost part of the corner. It is, however, likely that this corner has been damaged.

Jetons

Three artefacts have been identified as jetons. There is, however, some uncertainty connected to this identification as jetons are artefacts with the same shape – and similar function – as coins. As opposed to coins though, they were not made for any authorities, but for more private use. The French term 'jeton' has several connotations denoting both a counting-coin and a gaming-coin. One should also note that counting-coins were less used for that purpose from the end of the fifteenth century and used as gaming-coins instead. The gaming-coins did, however, become more common from the seventeenth century onwards (Skaare 1995: 221–22). The dating for these artefacts is therefore important in determining their use.

The three artefacts that constitute this group have been classified as jetons at an earlier time and have therefore been included in this study. They are all made of metal, but their condition varies. Two of them have been exposed to oxidation and deteriorated somewhat. As a result, one is preserved as a fragment and one is also severely damaged, and both of them are therefore kept in special storage. The third jeton is in better condition and it has a type of symmetrical décor on its middle. Around the edge there are what seem to be letters or signs.

Jetons are on average small (Skaare 1995: 222), and that applies to these three. Two can be measured and one has a diameter of 23 mm while the other has a diameter of c. 25 mm, the latter might originally have been somewhat larger.

Assessment of the gaming artefacts

The 1108 gaming artefacts that have been found in Bergen represent an extensive and diverse material with gaming boards, dice, jetons and especially gaming pieces. The preceding classification has substantiated that the different groups and subgroups were artefacts used in games such as merels, kvátrutafl, hnefatafl and chess. Both

gaming boards and gaming pieces bear witness to this. It applies to the game kvátrutafl in particular. Even though no such gaming boards have been found in Bergen, the largest flat circular discs signify that the game was known and played in different formats. The same goes for chess. Only one chess board has been recovered, but the great variations in size and shape among the chess pieces give evidence of a well-known game. In addition to the known games that were played, it seems very likely that the townspeople of medieval Bergen were familiar with such a game as alquerque. No alquerque boards have been uncovered and there is some uncertainty as to gaming pieces belonging to this game, more so than with gaming pieces for kvátrutafl. Most likely the gaming pieces for alquerque were smaller, but we do not how much. It is likely though that the size could vary– as with other board games. The large number of flat circular discs of different sizes speaks against excluding this game. When it comes to draughts, there are no conclusive answers until the gaming material is dated, as this game traditionally is dated to after AD 1500.

There is some uncertainty as to the identification of the flat oval, squared and octagonal gaming pieces and with regard to which game they belonged to. They may have belonged to the same game but shaped differently to be separated on the board. This is the most likely explanation, but it cannot be verified with certainty. What is certain is that these pieces extend the types of gaming artefacts and may represent gaming pieces that belong to unidentified board games or that they had a function that has not yet been deduced.

5 | Dating of board games and the gaming material

In this section I analyse and discuss the gaming material in a temporal setting, based on the established fire layer chronology for the Bryggen area. The questions I look into are: How is the gaming material distributed through time? When are the different games represented for the first time and taken into common use? Is it possible to see changes in design, décor and the use of raw material over time?

Because of the great difference in the number of gaming artefacts from the various excavations in Bergen, I study the artefacts from the extensive Bryggen site first since larger parts of the assemblage, 890 of the gaming artefacts, stem from this excavation. Of all the gaming artefacts 58 cannot be dated contextually, meaning that 832 objects, or 94 per cent of the artefacts from this area, can be dated.

Dating of the gaming artefacts from Bryggen (BRM 0)

Figure 5.1 gives an overview of how the gaming material from the Bryggen site is distributed according to the different periods, each terminated by a fire (cf. Øye this volume, Fig. 1.3). From the earliest period, period 1, before c. 1120, only one gaming piece has been recorded. Period 2 (c. 1120/30–1170/71) is represented by a larger compilation of gaming artefacts, to be increased in period 3 (1198–1248). The largest number of gaming artefacts stems from periods 5 and 6 (1248–1413), a time span of about 150 years (Fig. 5.1). These time spans also show the greatest variation within the different groups of gaming artefacts. In period 7 (1413–1476) the number of gaming artefacts declines from over 250 objects in period 6 to less than 30. Periods 8 (1476–1702) and 9 (1702–1955) only have a small representation of gaming artefacts.

As the length of the periods varies from 28 to more than 200 years, this is a variable that should be considered. To achieve a more comparable representation of the distribution of gaming artefacts in each period, a calculation of gaming artefacts per year in a period has been done (Fig. 5.2). Periods 1, 8 and 9 have been excluded since

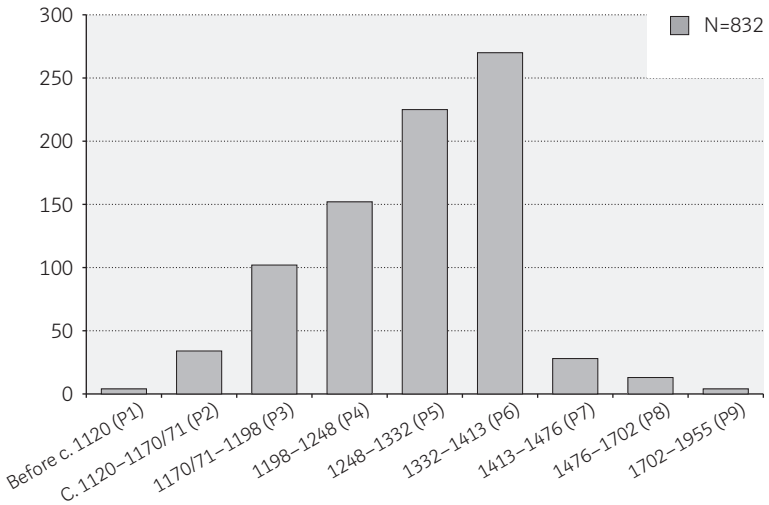


FIGURE 5.1
Temporal distribution of gaming artefacts (BRM 0) P=period.

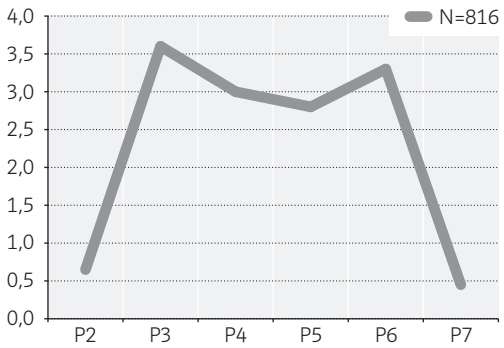


FIGURE 5.2 The distribution of gaming artefacts per year. P=period.

the low number of gaming artefacts does not give a good representation related to an annual distribution. Based on the temporal distribution of 816 gaming artefacts from period 2 to 7 per year, this gives a peak in period 3 (1170/71–1198), to be followed by an annual decrease in periods 4 and 5, before a renewed increase in period 6, in the latter part of the thirteenth century and the first decades of the fourteenth century. After this a distinct decrease in gaming artefacts appears. Period 3, being the shortest period with only 28 years, then, marks a clear increase in gaming activities, which lasts until the beginning of the fifteenth century. Period 6 (1332–1413), covering over 81 years, is the only period that nearly matches the annual representation from period 3 (Figs. 5.1–5.2) but with a much higher number and with the most varied traces of gaming activities in the town.

Dating of gaming boards

The seven gaming boards from Bryggen with patterns for merels, hnefatafl and chess could all be related to periods. Figure 5.3 shows that the four merels-boards are represented from period 4 (1198–1248) to period 6 (1332–1413), while the double-sided board with patterns for both merels and hnefatafl is dated to the first of these periods, indicating a general dating frame for these games. The board with a pattern only for *hnefatafl* is, however, dated to period 6, and a bit late compared to other areas. The chess board is dated to period 5 (1248–1332). Chess has been played in Norway since the end of the twelfth century/beginning of the thirteenth century, and the board from Bryggen dates to the second half of the thirteenth century.

Gaming boards	P1	P2	P3	P4	P5	P6	P7	P8	P9	In total
Merels										4
Merels/hnefatafl										1
Hnefatafl										1
Chess										1

FIGURE 5.3 Temporal distribution of gaming boards. P=period. N=7.

Dating of gaming pieces

Of the 862 gaming pieces from the Bryggen site, 810 specimens, 91 per cent, can be dated. Among these the gaming pieces of group A, used for games such as merels, kvátrutafl and most likely alquerque, constitute the largest group of 732 datable objects. Figure 5.4 shows that group A1, the largest group with 660 objects, is represented from period 2 (c. 1120/30–1170/71) up to and including period 9 – spanning

in time the early twelfth century to the eighteenth century. Group A2, the second largest group consisting of 65 datable gaming pieces, is already represented in period 1 with one gaming piece, but has no representation in period 2, and first appears again in period 3 (1170/71–1198) and is then represented in all periods up to period 6 (1332–1413), and in period 8 (1476–1702). Group A3, consisting of five gaming pieces, is represented from period 3 up to period 6. Group A4, with only two gaming pieces, is represented in periods 5 and 6 (1248–11413). The most common type A, with subgroups A1 and A2, has, then, both the strongest and longest representation with a peak in periods 3–6 (1170/71–1413).

Group B1 also represents a flat type of gaming pieces, but the square shape makes it difficult to pinpoint a particular game. B1 is represented in periods 5 and 6 – from 1248 to 1413, and in period 8. Like group A, the peak is in periods 5 and 6.

The tall gaming pieces are for the most part connected with chess, but also with hnefatafl. Group C, comprising certain chess pieces, is dated to period 3 (1170/71–1198), representing an early dating compared to other finds of chess pieces. Group D, represented by a likely hnefatafl-piece, is dated to period 2 (c. 1120/30–1170/71), which is consistent with the dating of hnefatafl in other areas, and corresponds with the dating of the hnefatafl-boards (Fig. 5.3).

Group E, a group that most likely represents chess, first appears in period 2 (c. 1120/30–1170/71) and is recorded up to period 6 (1332–1413), and thus is earlier

Gaming pieces	P1	P2	P3	P4	P5	P6	P7	P8	P9	In total
A1: Flat circular										660
A2: Flat oval										65
A3: Slightly hemispheric										5
A4: Hemispheric										2
B1: Flat squared										5
C: High squared										1
D: High hemispheric										1
E: High hourglass shape										26
F: Cone shaped										15
G: Cylindrical shape										12
H: Hourglass										2
I: Tower shape										3
J: Zoomorphic										2
K: Anthropomorphic										4
L: Uncertain/uneven shape										7

FIGURE 5.4 Temporal distribution of gaming pieces. P=period. N=810.

than the chess pieces in group C. Group F, also most likely used for chess, follows the same pattern as group E, with representation from period 2 (c. 1120/30–1170/71) to period 6. Chess, then, seems to have been played in Bergen from the first part of the twelfth century.

Group G, a group of both certain and possible chess pieces, is recorded from period 3 (1170/71–1198) to period 7 (1413–1476), covering a longer time span in the Late Middle Ages than the other groups of chessmen. Group H–K – excluding group L – are all certain and possible chess pieces and they are found in layers from periods 4 to 6 (1198–1413), while group I is also represented in period 7 (1413–1476). It should also be noted that the tower-piece of new-abstract shape, a well-known shape in the Late Middle Ages, has an early date in that respect, related to period 5 (1248–1332). As for group J, it is not recorded until period 6 (1332–1413), while group K is represented in periods 4 to 6. This means that the gaming pieces with the most elaborate designs are dated to the thirteenth and fourteenth centuries.

Figure 5.4 shows that certain groups, such as A1 and A2, are represented throughout the Middle Ages. In the twelfth century from period 2 (c. 1120/30–1170/71), and in particular period 3 (1170/71–1198), more types of gaming pieces emerge. Furthermore, the assemblage becomes more diverse and increases in the following periods with a peak in periods 5 and 6 – in the latter part of the thirteenth century and up to the fifteenth century.

Raw material and décor

Changes in the use of raw material and décor are also interesting in a temporal context. Table 5.1 shows that wood is the most common raw material, used on a total of 410 artefacts within the assemblage, and it occurs in all periods, including the 141 wooden gaming pieces with décor. Gaming pieces of stone, that constitute the second largest group, are represented from period 2 (1120/30–1170/71) to 8 (1476–1702), including the 20 decorated specimens, except for period 8. The bone pieces are fewer in number and also occur with and without décor from period 2 to period 8. Out of 151 gaming pieces of bone, 123 are decorated, and seem to be consistently more elaborate than the gaming pieces of wood and stone. In addition to the main groups of raw material, there are also occurrences of objects of clay and metal, but without decorations.

The tendencies in the representation of raw materials concur with the general find pattern for gaming artefacts at the site, where all the three main groups of raw material are recorded from period 2 to period 8, and one wooden gaming piece dated to period 1 (before 1120/30). The numbers of all the groups increase from period 3 (1170/71–1198) up to period 6 (1332–1413), with a peak in period 5 (1248–1332) and also in period 6 for stone and wooden gaming pieces. The metal and clay pieces also fall into this dating frame with the metal piece dated to period 4 and the clay piece dated to period 2.

	P1	P2	P3	P4	P5	P6	P7	P8	P9	In total	%
Wood	1	15	51	84	132	117	5	2	3	410	51,0
Décor (wood)	1	6	13	22	52	43	2	1	1	141	
Bone		13	32	38	29	30	5	4		151	18,8
Décor (bone)		10	24	29	25	28	5	2		123	
Stone		3	16	19	70	113	17	6		244	30,0
Décor (stone)		1		4	2	12	1			20	
Clay		1								1	0,1
Metal						1				1	0,1

TABLE 5.1 **Temporal distribution of raw-material and decorations for gaming pieces. P=period. N=808. %=the percentage of the total number of gaming pieces.**

Gaming pieces with décor follow a somewhat different pattern. Decorated wooden gaming pieces, 34 per cent of all the wooden pieces, are represented in all the periods, with a peak in periods 5 and 6 (1248–1413). Only a small percentage of the stone gaming pieces, 8 per cent, have some kind of décor and show a peak in period 6. Nearly all the bone gaming pieces, more than 80 per cent, are decorated and have a more even distribution over time, well represented in period 2, and with a peak from period 3 to 6, before the numbers drop in periods 7 and 8.

Even though wood is a material easily shaped, only a third of the wooden gaming pieces are decorated, while most of the bone ones are decorated. This implies that bone was the preferred material for elaborate gaming pieces. In some cases, then, the simpler wooden gaming pieces may have mimicked the more elaborate ones made of bone. Some of the chess pieces were, however, also elaborately made of wood, appearing among the finest specimens in the assemblage and dated to the twelfth and thirteenth centuries.

Dating of uncertain games

As already mentioned, there is some uncertainty as to the occurrences of artefacts that might represent the games of merels and kvátrutafl. To approach this question I use the datable and measurable gaming pieces of group A as a basis. Due to the uncertainty connected to subgroups A2–A4, and particularly A2, the study is restricted to A1 when trying to solve this issue. The gaming pieces used for merels are known to be small, while those used for kvátrutafl were larger than for merels, alquerque and draughts. I have interpreted flat circular discs with a diameter up to 30 mm as likely gaming pieces for merels, and the ones with a diameter from 50 mm and upwards as likely gaming pieces for kvátrutafl. The flat circular discs with a diameter between 30

and 50 mm are considered as too uncertain to be connected to a specific game, as they might have been used for several.

Table 5.2 shows that the smallest gaming pieces of 1–20 mm are represented with one in each of periods 4 and 5 (1198–1332) and with three in period 6 (1332–1413). Altogether very few of the smallest gaming pieces are found in contexts earlier than from 1332. The flat discs with a diameter of 21–30 mm are represented from period 2 to period 8 (1120/30–1476–1702) with a peak in periods 5 and 6. The flat discs with a diameter between 31 and 50 mm, are also represented in period 2 (1120/30–1170/71) and the number increases distinctly from period 3 (1170/71–1198) to period 6 (1332–1413), before a drop in period 7 (1413–1476). The flat discs with a diameter of 51–60 mm are represented from period 2 to period 9 (1702–1955), also with a peak in periods 5 and 6 (1248–11413). The largest discs with a diameter of 61–75 mm are represented from period 3 to period 8 (1476–1702). There are only two discs that are larger than 75 mm and these are dated to periods 6 and 9.

Out of 696 gaming pieces of group A1, 633 measurable pieces can be dated. When excluding the uncertain middle-sized ones, altogether 214 may be indicators of the games merels and kvátrutafl. The distribution of the smallest ones follow the distribution of gaming artefacts at Bryggen in general with a representation from period 2 up to period 8 and a peak from period 4 to 6.

The flat discs with a diameter between 50 and 76 mm are represented from period 2 up to 9 (c. 1120/30–1955), with a peak in period 3 and particularly in periods 5 and 6. These discs were likely used for kvátrutafl.

The discs with a diameter between 31 and 50 mm are difficult to connect to specific games. They may have been used for merels, kvátrutafl, alquerque and possibly draughts. The temporal distributions show that they were in use from the High Middle Ages up to the Early Modern period. This indicates that merels and kvátrutafl

	1–20 mm	21–30 mm	31–40 mm	41–50 mm	51–60 mm	61–75 mm	76–	In total
P 2		1	14	8	4			27
P 3		7	30	22	10	7		76
P 4	1	9	25	53	16	1		105
P 5	1	19	39	73	38	5		175
P 6	3	24	72	63	37	14	1	214
P 7		5	10	6		2		23
P 8		1	2	1	3	3		10
P 9			1		1		1	3
In total	5	66	193	226	109	32	2	633

TABLE 5.2 Temporal distribution of group A1 based on size. P=period. N=633.

were known and used in all the periods. It is also likely that alquerque and draughts were known games, although this is more difficult to decide based on size.

Summing up, then, the dating of the gaming pieces from Bryggen shows that the largest group, flat discs (A), has a long temporal representation, from the early twelfth century and well into Early Modern Times, and was used for merels and kvátrutafl, and possibly alquerque and draughts. Tall gaming pieces, that represent chess and possibly hnefatafl, occur from period 2 (c. 1120/30–1170/71) with an increase towards the end of the 1100s before they reach a peak in periods 4 to 6 (1248–1413), which also represents the greatest variations in types of gaming pieces and the occurrence of gaming boards. As for raw material, wood, bone and stone were mainly used in all the periods, with wood as the largest group, and stone as the second largest. Generally, the bone pieces are relatively more frequently decorated than those of wood and stone – a distinguishing tendency that can be seen in the gaming material throughout all the periods.

Dating of dice

Of the 18 dice that have been uncovered at the Bryggen site (BRM 0) 13 can be dated. Here, they are represented from period 2 to period 6 (c. 1120/30–1413) with a peak in period 4 (1198–1248), somewhat earlier than the other gaming artefacts. This might of course be due to the low number of dice, but it can also be a result of the restrictions on gambling issued in the Urban Code of 1276 (cf. p. 139).

Dating of possible jetons

As mentioned earlier there is some uncertainty when it comes to the interpretation of the three jetons from the Bryggen site. As this is a type of artefact used for playing generally dated to the latter part of the fifteenth century, the date is relevant for the interpretation. Of the three jetons, only two can be dated related to context. Of these, one is dated to period 7 – up to the end of the fifteenth century, while the other is dated to period 4 (1198–1248) and significantly earlier than what is usual for these types of artefacts. There is thus some uncertainty connected to the interpretation of these artefacts as jetons.

Summary: gaming artefacts from the Bryggen site

The 832 datable gaming artefacts from the extensive Bryggen excavations reflect varied gaming activities in the area as early as in the eleventh century and well into modern times, with the largest representation in the High Middle Ages and the early part of the Late Middle Ages. When assessing the distribution of the finds

based on the length of the archaeological periods, a somewhat different pattern emerges, with an earlier peak by the end of the twelfth century and in period 6 (1332–1413) which also concurs in time with the greatest numbers and diversity among the gaming artefacts, especially related to chess and hnefatafl. Artefacts related to chess emerge in the late twelfth century, but are best represented in periods 4–6 (1198–1413). The flat circular discs of differing shapes have another temporal distribution. Group A1 follows the same pattern as gaming artefacts in general with a peak in period 5 and particularly 6. Group A2 peaks in periods 4 to 6. Excluding groups A1 and A2, the other groups of gaming artefacts cover relatively few artefacts and are mainly represented in periods 4–6, which signify an increase in the gaming repertoire at this time.

Gaming material from other urban excavations in Bergen

Altogether 166 gaming artefacts, 15 per cent of the assemblage, have been uncovered from other areas in Bergen – of which 148 can be dated to centuries. Figure 5.5 shows the temporal distribution for these gaming artefacts. They are represented from the twelfth century, with a peak in the thirteenth century. In the fourteenth century the numbers drop, but altogether the thirteenth and fourteenth centuries represent the time span with the most finds from medieval Bergen. This is also consistent with the finds from the Bryggen site. The decrease in gaming artefacts in the fifteenth century is also consistent with the Bryggen finds.

Figure 5.6 shows the temporal distribution of the different artefact groups. Group A1 is also here the largest with altogether 123 artefacts. In addition, groups A2 and B2 are represented. Group A1 is found in layers dated from the twelfth century and up to Early Modern Times. A2 appears somewhat later, from the thirteenth to the sixteenth century. Group B2 – with only two artefacts – is dated to the sixteenth century.

The tall gaming pieces of groups C, F and G associated with chess are dated from the thirteenth to the fifteenth centuries, something which concurs with the representation of this game at Bryggen (BRM 0). In addition there is one gaming piece with an uncertain shape that can only be dated to after AD 1100. The dating of the five dice that have been uncovered is the same as for the chess pieces – from the twelfth to the fifteenth centuries.

The 832 datable artefacts from Bryggen, and 148 from other urban excavations in Bergen, give an uneven distribution of gaming artefacts that reflects different extent and scopes of the excavations. The larger numbers from the extensive Bryggen site are also reflected in a greater diversity in gaming artefacts.

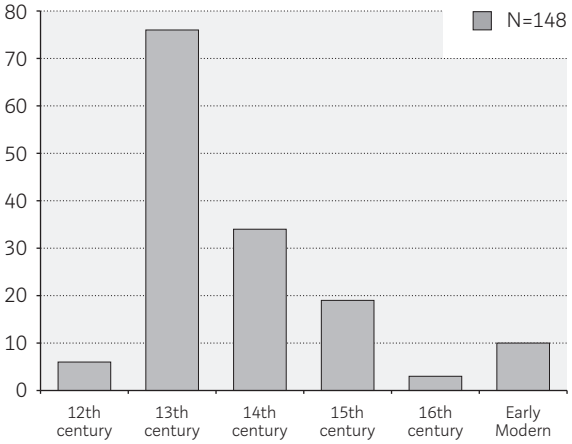


FIGURE 5.5 Temporal distribution of gaming artefacts in Bergen.

FIGURE 5.6
Temporal distribution of the different groups of gaming artefacts in Bergen.

	12th century	13th century	14th century	15th century	16th century	Early Modern	In total
A1							123
A2							10
B2							2
C							1
F							1
G							6
L							1
Dice							5

How can the temporal distribution be interpreted?

The dating of the gaming activities in medieval Bergen also gives a possibility of shedding light on games of chance. The Urban Code of 1276 includes a paragraph prohibiting gambling. If one was caught red-handed playing with dice for money, all the stakes on the table would be confiscated and one had to pay an additional fine (*NgL II:* 266; McLees 1990: 37). The mere fact that the authorities found it necessary to ban gambling implies that this particular activity in towns was troublesome. The extensive representation of gaming artefacts from the thirteenth century testifies to a high degree of gaming activities in towns when the law was written, including dice and board games such as kvátrutafl, where dice were required. What is interesting in this context is the fact that there is no visible decrease in gaming activities after the Code was passed. In the fourteenth century there is even an increase in the number of gaming artefacts. Dice, on the other hand, reach a peak in the thirteenth century before they decrease in numbers. The total number of dice is low and there is some

uncertainty regarding the representativity. The numbers of flat discs used for games such as kvátrutafl which required dice, increase after this time, implying that dice were still much in use, but may, then, not reflect gambling to the same degree. In Trondheim the artefacts representing gaming activities reach a peak in the thirteenth century, but then decreases after 1275, which has been connected with the new prohibitions (McLees 1990: 184).

Another aspect regarding games of chance is the 'intentional untraditional way' of marking the dice (cf. pp. 128–129). When dice are not marked correctly it is usually as a way of cheating. One can mark two sides with number 5 to increase the chance of getting a higher score. This is not the case with the dice from Bryggen (BRM 0 and BRM 76), where all the numbers from 1 to 6 are represented. This unusual way of numbering is most likely a result of ignorance of the general rule for marking a die (Fig. 5.7) or a result of a speedy production. Since five of the six dice cannot be dated, little is known of the temporal distribution. The only dated die relates to period 4 (1248–1332).

A decline in gaming artefacts at the Bryggen site (BRM 0) can be seen from period 7 (1413–1476) onwards with a reduction from 268 gaming artefacts in period 6 (1332–1413) to 28 in period 7, a decrease of 90 per cent. There is, however, also a general reduction in other types of artefacts in period 7, for instance in textile equipment and fishing tackle and others (Øye 1988; Moldung 2000; Olsen 2004), which may be related to the garbage disposal in the Bryggen area. After 1413 the culture layers decrease and indicate removal of garbage and waste from the area (Økland 1998: 102–103). The decrease in archaeological objects at Bryggen does not necessarily mean fewer activities. This means that there might still have been gaming activities in the area, only that they cannot be traced in the same way in the archaeological record.

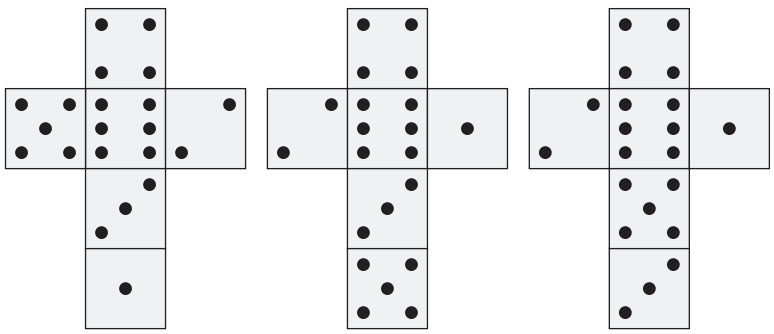


FIGURE 5.7
Setup of the pips on the dice; traditional, 'intentionally untraditional' and wrong setup on the soapstone die.

6 | Spatial distribution of games

The 5,700 m^2 excavated area of the Bryggen site covered four medieval tenements; Gullskoen, Søstergården, Engelgården and Bugården (cf. Øye this volume, Fig. 1.1), comprising altogether 890 artefacts identified as certain and possible gaming artefacts. Of these, 148 objects lack more precise information as to where they were found. The remaining 742 gaming artefacts can, however, be related to a specific context connected to structures and layers. Here, the whole area has also been taken into account related to different activity zones There is the front area of the wharf with storage buildings – a working area associated with trade – and the rear area above the original shore-line with buildings used mainly as living-quarters (Moldung 2000: 124). There are, however, uncertainties regarding the context of the gaming artefacts as the majority have not been found *in situ*. As mentioned earlier, it is likely that the artefacts have been found relatively close to where they were used. Another uncertainty regarding the contexts of the gaming artefacts are the ones that have been found in fillings in the anterior area of Bryggen. These seem to have been thrown away as waste. Many have not been broken or otherwise damaged, indicating that some were lost or possibly thrown away even though they were not broken. I assume then that the waste, just like other discarded things, was not thrown away far from the area of use.

The spatial distribution

Only one gaming artefact has been related to period 1 (before c. 1120/30), a type of artefact that became more common from period 2 (c. 1120/30–1170/71) onwards with an increase up to period 6 (1332–1413). In period 7 (1413–1476), these types of artefacts decrease markedly. In periods 2–4 (c. 1120/30–1248) most of the artefacts are found in the anterior area of Bryggen, with less in the rear part. During these periods there is no discernible difference in activities in either area. Many of the finds derive from fillings but this seems to be the case for the whole Bryggen area. In period 4 (1198–1248) a larger number of gaming artefacts are found in relation to buildings and passages.

In period 5 (1248–1332) a change can be seen in the activity patterns and usage of the buildings as there is a more defined division of the anterior and rear areas. Activities related to household work now seem to be located in the rear area, while the frontal area relates more to trade and storage. The distribution of gaming artefacts is fairly similar in both areas, but with a few more in the rear area connected to buildings and passages as well as fillings. In the anterior area fewer are found in relation to buildings. Some have been uncovered in passageways, but most of them in the foundations near the waterfront.

In period 6 (1332–1413) the traces of gaming activities continue to increase at the Bryggen site, and as in period 5 with a fairly similar distribution between the two areas. In the rear area, most of the finds have been found close to buildings, but also in passageways. In the anterior area fewer finds can be related to buildings, but more finds are connected to passages. In this area the finds still mostly derive from the foundations in the waterfront.

The marked decrease of gaming artefacts in period 7 (1413–1476) which seems to reflect a more organised treatment of waste during the fifteenth century affects the whole area. Most of the finds of this period derive from the back area, but finds have been uncovered in relation to buildings and passages in the rear and front areas, and most frequently in fillings.

As for the distribution of different types of board games at Bryggen, no distinct pattern can be traced. Different types of board games have been uncovered in the whole area, often in fillings. This also applies to the boards and particular gaming pieces such as the chess pieces. When things were broken or damaged, they seem to have been thrown away, although many may also have been lost accidentally. The overall spatial pattern that emerges shows an even spread in both numbers and types of games in both the anterior and rear areas.

What do the spatial distribution of gaming artefacts mean?

According to McLees it is not likely that gaming artefacts were carried far from the area where they were used (McLees 1990: 21). A game like kvátrutafl with big boards and gaming pieces cannot have been a practical game to carry, but other games posed few such problems. It is noteworthy that beginning with period 4 (1198–1248) there is an increase of gaming artefacts found in passages, a tendency that continues in periods 5 and 6 as well (1248–1413). This may indicate that some games have been portable at least within the Bryggen area.

Games like merels, kvátrutafl, hnefatafl, chess and dice are found in both rear and frontal areas at Bryggen. Most of the finds derive from the anterior area, and most of these seem to have been thrown away as waste. This makes it difficult to tie certain games to either of the two areas. The difference in the numbers of the different games might perhaps give an indication. Generally, fewer chess pieces have been uncovered than gaming pieces for merels and kvátrutafl. This may imply that not all residents here played chess, but over time more people seem to have played this game as we see many different types of artefacts used for it. The finds show that the people living at Bryggen took time out of the day to play these games, and that it was an activity that increased over time.

As for specific contexts, only 19 gaming artefacts have been found *in situ*. They have been uncovered in both areas in relation to buildings. Since most of the finds in the anterior area seem to have been thrown away as waste it seems likely that the gaming activity was highest in the rear residential area, but the playing of board games did also occur in the anterior area in work contexts.

The dating of the chess pieces from Bryggen indicates that the game might have been known there in the last part of the twelfth century. Finds of gaming pieces of group E–G and particularly group C, an abstract chess piece, tell of this. Bryggen was the area of international commerce and may thus indicate that the game might have come to town with merchants from abroad. According to Murray, chess was a known game in England before AD 1100 and in southern Germany around AD 1050 (Murray 1951: 83). This leaves several possibilities as to who brought the game to Bergen as both Englishmen and Germans were important actors from the twelfth century onwards (Helle 1981: 13). What is highly likely is that chess came to Bergen via the sea, and that it rapidly became a popular game in town. When introduced, the game was played by the societal elite in the area (Grieg 1933: 255). This may have been the case on Bryggen as well. The few finds dated to early periods indicate this. Even though there is an increase in the number of chess pieces on Bryggen, traces of the more simple games of merels and kvátrutafl still dominate in numbers throughout the Middle Ages.

It has been suggested that the rich material of gaming artefacts in urban contexts reflects a growing urban identity and lifestyle. Axel Christophersen sees the finds of medieval gaming artefacts from Trondheim as an expression of an urban life style where international contacts created new priorities and preferences – and a way for the townspeople to show their affiliations to the urban life (Christophersen 1999: 142–143). This may, perhaps, also be relevant when interpreting the gaming material from Bergen, which shows an early manifestation of chess, and that the game expanded during the thirteenth century. The few traces of hnefatafl show that people replaced the game rather early, perhaps influenced by other groups of townspeople already playing chess. The high numbers of gaming artefacts pertaining to other games might also indicate a socially distinguishing tendency in the town towards outsiders as well as an affiliation to the social environment of urban life. If so, this might be an indication of *conspicuous leisure*, perhaps even *conspicuous consumption*, where the material culture had a distinguishing effect on different social groups – in this case, demonstrating their preferences through contact in playing with other social groups.

Board games – more than a game?

In earlier research, board games have generally been regarded as spare time activities (i.e. Petersen 1914; Lindahl 1980), and an activity reserved mostly for the societal elite for people with the means and time for this kind of activity (Guttormsen 2001: 4). An interesting aspect here is the interpretation of 'spare time,' a modern phenomenon, the time which is left when every other necessary activity is done (Goodin et al. 2005: 43–44) and the time that can be used for pleasure and self-development (Fullagar and Owler 1998: 449). This leads us again to the term *conspicuous leisure*. Were board games a means of showing others one's status and affiliation? In the Iron Ages, games reached the elite first, and later spread down the social ladder. In the Middle Ages we see the same pattern, but the spread downwards was faster in the towns, where people with different social backgrounds lived closer together and new ideas and lifestyles were therefore more accessible.

The archaeological finds indicate that it was socially acceptable to spend time on game-playing and that people took time out of their days to partake in this activity as a leisurely activity. There are also indications of a deeper mentality connected to games, referred to in written sources. Board games are often mentioned in the sagas, where they are connected to the gods as well as vital and necessary skills, but often in association with the societal elite, which in turn partly led to the prevailing assumption that it was the elite who played games. Such sources do, however, refer to earlier and rural conditions. Still, one cannot elude the fact that the relevance of games in society depended on the group with the power to define their symbolic value. The urban environments seem, however, to have opened more easily for different kinds of players.

7 | Conclusions

In this study of gaming material from medieval Bergen, I have analysed a surprisingly rich body of board and dice games, comprising altogether about 1100 archaeological artefacts of gaming boards, gaming pieces and dice, and maybe also jetons – representing a group of artefacts that has not been studied as a whole assemblage earlier, and is so far the most extensive study of any gaming material from a Norwegian medieval town. By studying these objects it has also been possible to shed light on a particular side of urban culture and townspeople's daily life and lifestyle. What did they play, where, at what time, and who played?

Most of the artefacts, about 80 per cent of the whole assemblage, have been found at the site of the large Bryggen excavations, making the commercial area at Bryggen

the best represented. This is also an especially interesting area related to both foreign impulses and demographic changes when the German Hansa eventually took over the area after the German Kontor was established around 1360.

The identified gaming material consists of three main groups: gaming boards (7), gaming pieces (1068) and dice (30), and three jetons whose function is more uncertain. Based on their form they have been identified and classified as belonging to games like hnefatafl, merels, chess and kvátrutafl, and probably also the predecessor of draughts – alquerque. Merels and kvátrutafl are represented in all the periods – from the twelfth well into the fifteenth century. Chess was introduced in the latter part of the twelfth century, with an increased representation throughout the High Middle Ages. This is also the case for the other board games with a peak in the thirteenth and fourteenth centuries. During the fifteenth century there is a distinct decline in gaming artefacts – most likely caused by changes in garbage disposal, rather than changes in the gaming activities.

The dating of the gaming material gives new information not only of the development of board games in Bergen but also in a Scandinavian context. The early representation of chess in the latter part of the twelfth century concurs with other finds from Scandinavia, although mostly dated to the thirteenth century onwards. The early representation in Bergen, and especially the commercial environments at Bryggen, is likely due to the town's international contacts. It is also interesting to observe that the older Norse game of hnefatafl was still in use in an urban environment as late as in the second half of the fourteenth century. At this time, however, it seems to have declined judging by the few traces of the game. The presence of another strategic game, chess, might have rendered hnefatafl superfluous, but the decline also concurs in time with the establishment of the German Kontor and a stronger foreign milieu. The uncovered artefacts imply, then, a high gaming activity in the town, where they used old as well as new games, with the largest concentration in the High Middle Ages and early in the Late Middle Ages.

The artefacts at Bryggen could be related to structures and zones within the area to a larger degree than at the other medieval urban sites of Bergen. The Bryggen gaming artefacts are best represented in the rear area, with both living quarters and assembly rooms, and to a lesser degree at the waterfront with storage buildings and working areas at the wharf, where the finds mostly derive from fillings, most likely as waste/garbage. It has not been possible to see if the gaming material derives from specific contexts, but the general spatial distribution of gaming artefacts implies that different games have been used all over the Bryggen area, but mostly in the rear areas.

Raw material, shape and décor vary. The most elaborate gaming artefacts belong to the most intellectually demanding games, like chess and hnefatafl. This may indicate that playing board games may have had a distinguishing role both in the mate-

rial and social communication as markers of mental and social affiliations. Different types of games might have had different social connotations, where strategy games were the most mentally demanding and socially distinguishing. Both the shape of the gaming pieces and the raw material also give indications of this. The simple shape of most of the gaming material, particularly wooden gaming pieces, seems to reflect a more common gaming culture where especially merels and kvátrutafl seem to have been popular. Board games such as chess may very well have been reserved for the upper classes in the early town, whereas merels and kvátrutafl also seem to have been played by common people. Outside Bryggen, there are fewer finds related to chess, and games such as merels and kvátrutafl dominate, which is also the case at Bryggen.

This alludes to the question of an urban identity and how artefacts could have been used as a means of material communication. The towns allowed for acquiring new impulses and traditions more easily, something which can be seen with the introduction of chess and the increase in chess-related artefacts. The distinct and fairly quick increase in gaming artefacts in Bergen with both simple and hastily produced ones implies that playing board games was something people did when they had the time. This seems to be the case for several social groups. The interpretation as a spare time activity seems somewhat narrow as descriptions of board games in the sagas strongly indicate that the games were given more importance than just being something done in people's spare- or surplus-time. It is also likely that the more demanding and time consuming board games represented a surplus-activity, as conspicuous leisure of profound symbolic significance.

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FAGBOKFORLAGET

The Bryggen Papers present results based on the archaeological material from the excavations at Bryggen and other medieval and early sites in the town of Bergen. Being an Episcopal see and regional royal administrative and residential centre, Bergen developed in the twelfth and thirteenth centuries into the first truly international trading centre of Scandinavia and one of the most important ports of northern Europe, at the same time becoming the first capital of the Norwegian kingdom. The Hanseatic League established one of its four main trading stations, or *Kontore,* in Bergen around 1360, lasting into the latter part of the eighteenth century.

This ninth volume of The Supplementary Series of the Bryggen Papers deals with two artefact groups – locks and keys and remains of board games from the medieval town of Bergen. The artefacts analysed represent the largest assemblages of these categories in Scandinavia. Drawing scholarly attention to these remains, the authors show how these these small and long forgotten things are able to throw light on daily life in the medieval town and also connect to the broader cultural processes in an expanding international trading centre – shifting social and cultural conditions, lifestyle, economy and security.

The authors

Guro Koksvik Lund: MA in archaeology, University of Bergen.
Present position: Project manager, organisational development, Vaksdal municipality

Ambjørg Reinsnos: MA in archaeology, University of Bergen.
Present position: Planner/archaeologist, Opus Bergen AS

Ingvild Øye: Professor of medieval archaeology, Department of Archaeology, History, Cultural studies and Religion, University of Bergen

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