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University of Bergen Archaeological Series

Soapstone in the North Quarries, Products and People 7000 BC – AD 1700

Gitte Hansen and Per Storemyr (eds)



UNIVERSITETET I BERGEN

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Preface

This book has been a long time in the making. It is an outcome of the five Norwegian University Museums' joint research programme *Forskning i Felleskap* (FIF, 2010–2015), supported by the Research Council of Norway. FIF kindly facilitated a number of workshops and meetings between archaeologists, geologists and craftspeople, all with a common interest in premodern soapstone quarrying and use. The result is the chapters of this book, which are based on studies carried out over the last two decades and, for the most part, are published scientifically for the first time. We very much thank the authors for participating in this venture. We also thank several colleagues – archaeologists, geoscientists and craftspeople – that assisted the editors in peer-reviewing the chapters: Irene Baug, Birgitta Berglund, Laura Bunse, Poul Baltzer Heide, Richard Jones, Tor Grenne, Torbjørn Løland, Therese Nettet, Astrid J. Nyland, Lars Pilø, Kevin Smith, Lars F. Stenvik, Frans Arne Stylegard and Stephen Wickler; we are very grateful for the job you have done. Not least, thanks go to Tromsø University Museum, NTNU University Museum (Trondheim) and the University Museum of Bergen for their economic support in publishing the book.

Bergen/Hyllestad, Spring 2017

Gitte Hansen

Per Storemyr

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From Numeric Data to Cultural History – A Typological and Chronological Analysis of Soapstone Vessels from the Medieval Bryggen Wharf in Bergen, Norway

This paper's task is to establish a typology and a finer chronology of medieval Norwegian soapstone vessels used primarily as cooking pots. The case study includes 806 soapstone vessels from BRM 0 the Bryggen site located at Bryggen, the medieval wharf in Bergen, western Norway. The vessels stem from contexts dated from the 11th century to the 18th century. The assemblage is classified into six different vessel types: A–F. Soapstone vessels are frequent at Bryggen through to the end of the 15th century after which consumption drops off. A change from the relatively uniform western Norwegian A vessel type to a more diverse vessel design happens after the mid-1200s. It is suggested that the new diversity in shape points to a shift in the mode of production from a well-organised large production scale to a smaller one. Corresponding changes in the vessel assemblage points to an alteration in the way the vessels were used; the vessels cease to be produced in all sizes and generally get smaller and more homogenous in size in the later periods at Bryggen. As the vessels get smaller they are also more likely to have a flat or flattened bottom better suited to standing on a table to accommodate the new late medieval eating habits. German Hansa merchants occupied the Bryggen wharf from the 1360s, but the use of the indigenous soapstone cooking pots seems to continue to a certain degree.

Introduction

Norwegian soapstone vessels are simple household products manufactured in rural contexts and rooted far back in prehistory. They are often common finds in urban and rural medieval contexts all over Norway, yet a detailed typology and understanding of the chronological development of this important Norwegian artefact group is still lacking. The soapstone vessels studied for the present paper derive from the Bryggen site in Bergen excavated between 1955 and 1979 under the direction of Asbjørn E. Herteig (University Museum of Bergen inventory no. BRM 0). The site (5700 m²) covered the western parts of *Bryggen*, the local name for the medieval town's wharf area. Waterfront, storehouses and living quarters of the settlement at Bryggen dating back to the 11th century were uncovered during the excavations (Herteig 1990, 1991; Hansen 2005). The soapstone assemblage found during the Bryggen excavations comprises shards from more than 800 vessels. Since the assemblage is large and relatively well dated, it is well suited for the development of a more precise typology and chronology of medieval soapstone vessels; the Bryggen material is the most extensive

Norwegian medieval soapstone assemblage to undergo an archaeological analysis with these aims.

The main task of this paper is thus to present the Bryggen soapstone vessels' morphology, and thereby establish a more precise typology as well as a narrower chronology of medieval Norwegian soapstone vessels. I will also discuss if, how, and why this household item changed in quantity and quality over many centuries of Bergen's history. The paper is based on the main results from my unpublished master thesis at the University of Bergen 2003 (Vangstad 2003).

It is also of interest to see how such a traditional and functional object developed and was used during the centuries from the early phase of the town's history to the late medieval dynamic and sophisticated urban environment. Furthermore, interplay between tradition and innovation is an important issue. Which morphological features of the vessels were static and which changed during the many centuries of usage at Bryggen? What conservative elements made the vessels stay in use over the relatively long time span, and what led to changes and finally decline? Answers to these questions are sought with respect to the demographic changes of the Bryggen wharf area during the Middle Ages, the development of the urban community in general, and changes in the exploitation of soapstone resources and production during high and late medieval times.

The Bryggen area and the archaeological excavations

Bergen was founded in the 11th century, and in the course of the 12th century a living urban community emerged here (Hansen 2005). Before 1350, the population is estimated to have reached approximately 7000 (Helle 1982:492), making Bergen Scandinavia's largest town. The medieval town was located around the Vågen bay, with Bryggen on the northern shore. The Bryggen area witnessed significant demographic changes through medieval times. In the first centuries of the town's history, Norwegians owned and occupied the housing area, while foreign traders were not allowed to stay during the winter season. From about 1360, the expanding German Hanseatic traders established their Kontor at Bryggen and the population of the area came to be made up of males of non-Norwegian ethnicity. These demographic changes are important for the interpretation of the development of the use of soapstone vessels in the Bryggen area during the Middle Ages.

Norwegian soapstone vessels

The earliest known Norwegian soapstone household vessels date back to the late Bronze Age (Pilø 1989). Soapstone vessels continued to be made in Norway throughout the pre-Roman Iron Age (Shetelig 1912; Møllerop 1959:21–40; Skjølsvold 1969) and into the Roman Iron Age. Lars Pilø (Pilø 1989) points to a break in the production and use of soapstone vessels in Norway after this period until it was re-established during the Viking Age at the latest.

In the Viking Age (c. 800–1030), production of soapstone vessels increased in importance and was carried out on large, even industrial, scale (Skjølsvold 1961). Soapstone vessels from the Viking Age are found over a large area of northern Europe and must have been trade goods at that time (Resi 1979; Forster 2004; Nymoen 2011). In the Middle Ages (c. 1030–1537), the production of vessels continued (Lossius 1977; Berglund 1999), but to what extent and for how long is not well documented yet. However, some small-scale production of vessels is known even through the 18th and 19th centuries (Helland 1893:121–123).

Norwegian medieval soapstone vessel typology

During the Viking Age the most common vessel shape was the 'bowl shaped' R729 (Rygh 1885). R729 is circular with a curved base and a smooth outer and inner surface, and the vessels often show traces of an iron handle (Skjølsvold 1961:20). In her analysis of soapstone vessels, with a presumed

Norwegian provenance, found in Hedeby in North Germany Heid Gjøstein Resi observed some variations in the surface treatment of the vessels in addition to the well-known curved bottomed type with smooth surfaces (Resi 1979). Resi suggests these variations could be regional.

Whereas a significant number of the Viking Age vessels are complete and often found in well-preserved burial contexts (Petersen 1951:363; Schou 2007:54), the majority of the medieval material is comprised of shards thrown away as waste at urban dwelling sites. Thus while the Viking Age vessels' size and shape are well known from preserved vessels, determining the size and shape of the fragmented medieval vessels requires extensive reconstruction.

For a long time, it had been assumed that opposed to the earlier types, the dominant medieval vessel shape was primarily 'bucket shaped', that is with high, straight sides, a flat bottom and a sharp angled junction between the side and bottom (Grieg 1933). The first study that really shed light on the morphology of Norwegian medieval soapstone vessels was Siri Myrvoll Lossius' work on the soapstone vessels from the Borgund kaupang, a medieval urban centre close to Ålesund in Sunnmøre, on the west coast of Norway. In her analysis of more than 600 vessel fragments from the kaupang area (broadly dated from the 11th to 14th century), she was able to single out two main groups – 'bowl shaped' and 'bucket shaped' specimens – based on the shape of the vessels' walls, base and the junction between them. The vessels were divided into four different types named A–D based on a combination of the two main shapes and the treatment of the outer surface (Lossius 1979:65). The study described recurrent variations in the morphology of the medieval vessels, pointing out two of these varieties as most likely to be regional differences (vessel types A and C).

Methods of dating and classification

Dating

Fire layers dated through a combination of archaeological materials, dendrochronology and historically known fires in the Bryggen area serve as a method of dating settlement layers and buildings at the Bryggen site. The Bryggen fire chronology comprises nine periods, period 1 to

Figure 1. Bryggen fire interval chronology. Compilation of dates from Herteig 1990:Fig. 3, Herteig 1991:Fig. 5, and Hansen 1998, 2005:58-67. (Drawing: G. Hansen).

Fire	Date	Period	Building phase	
0	1955			
			9.2	
I.a Prev. Unknown		9	9.1	9.1.1
I	1702			
			8.3	
I.b Prev. Unknown		8	8.2	
Local fire 1527			8.1	8.1.1
II	1476			
		7	7	
III	1413			
			6.3	
III.b	1339	6		
			6.2	6.2.1
			6.1	6.1.1
IV	1332			
			5.2	5.2.1
		5	5.1	
V	1248			
			4.2	
		4	4.1	
VI	1198			
			3.2	3.2.1
		3	3.1	3.1.1
VII	1170/71			
			2.2	
		2	2.1	
VIII	c. 1120			
			1.2	
		1	1.1	
Oldest documented structures at the Bryggen site (BRM 0): 2nd quarter of 11th century (c. 1020/30)				

9, which ended after nine fires. The earliest fire, which ended period 1 at the site, is dated to c. 1120 and the last fire took place in 1955 (Herteig 1990:12; Hansen 1998, 2005) (Figure 1). Period 1 comprises materials dated broadly from between the second quarter of the 11th century (c. 1020/30) and c. 1120 (Hansen 2005), and each period to which the vessels in this study are contextually dated, consists of one or several ‘building phases’. Only 46 vessels (6%) have been found in actual fire layers or in situ layers dating to the time of a fire; so most vessels were found in inter-fire layers, some of which are fill layers redeposited from a previous period. In the present study vessels from all types of contexts are included. This may cause a certain ‘delay’, or extension of the time span during which the vessel types appear in the archaeological records, and this should be kept in mind when assessing the chronological patterns in the material. The analyses of the material were originally undertaken during the early 2000s, but since then the chronology of the Bryggen site has been re-revised and improved (Hansen et al. 2017). In the present paper new dates provided by Hansen et al. 2017 have been applied. Only the temporal overview of rim diameter, rim shapes and the design of knobs and handles is still based on dates from 2003, since the raw data on these details are no longer available. The new dates have resulted in a larger set of dated vessels, as well as more precise dates for some vessels. A fuller set of dated vessels has been especially important for the vessel types which are not so numerous in the assemblage. It is unlikely that the new dates significantly affect trends in the temporal overview of rims, knobs and handles. In periods with few vessels, or when vessel types consist of few specimens, the numbers must, however, be read with a degree of caution.

Classification

The Bryggen material is classified with a point of outset from Lossius’ typology, classifying vessels into types by a combination of the overall shape (wall and bottom, and the junction between them), and the outer surface treatment of the pots (Lossius 1977). Vessel size and morphological variations in handle and rim shapes are considered to be less typologically significant for the primary classification. Using

the described criteria Lossius’ typology has been supplemented with two new types—‘type-E’ and ‘type-F’ (Figures 2–4). The soapstone vessels from Bryggen consist of 1171 shards from 806 vessels. Of these vessels, 656 could be classified according to type based on the two elements of shape and surface treatment. The rest are too fragmented, or have a non-characteristic or non-distinguishable morphology. Figures 23 and 24 give an overview of the chronological distribution of types.

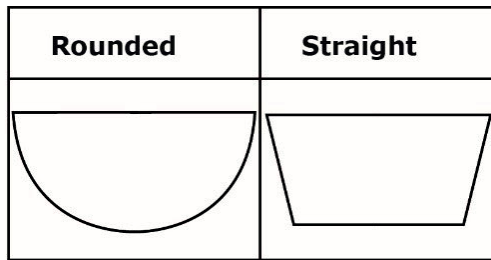


Figure 2. The two basic wall and wall-base junction shapes of the soapstone vessels from Bryggen.

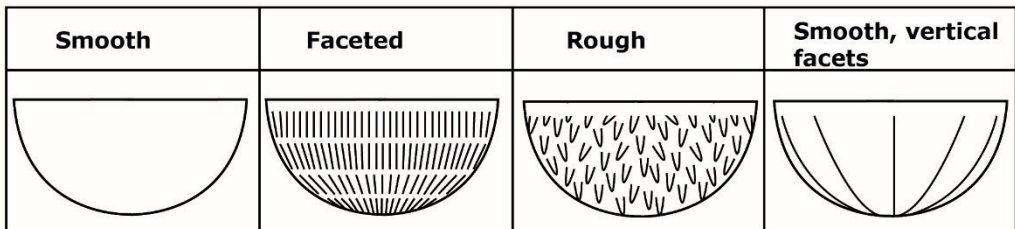


Figure 3. The four different surface treatments of the Bryggen soapstone assemblage.

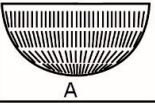
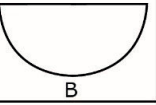
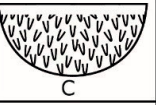
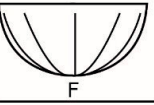
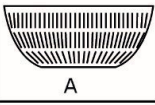
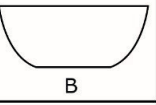
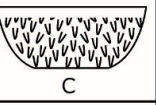
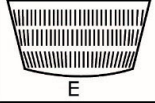
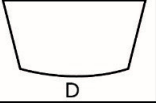
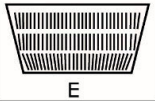
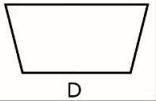
SHAPE		SURFACE			
Shape	Base shape	Faceted striped	Smooth	Rough	Smooth vertical facets
Rounded shape	Rounded base	 A	 B	 C	 F
	Rounded flat base	 A	 B	 C	F?
Straight sides	Slightly rounded base	 E	 D		
	Flat base	 E	 D		

Figure 4. The criteria of classification of the Bryggen soapstone assemblage based on the combination of wall and base shape and surface treatment.

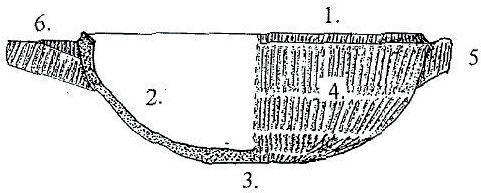


Figure 5. The basic elements of a medieval soapstone vessel, exemplified by a type-A vessel. 1) Rim, 2) wall, 3) base, 4) surface (outer), 5) knob and 6) shaft.

Six categories of size have been established based on the vessel's diameter of the rim. Very small vessels have a rim diameter of less than 10 cm, small have a diameter between 10–19 cm, medium between 20 and 29 cm, large between 30 and 39 cm and very large have a rim diameter of 40 cm or more.

Figures 6–8 show the diversity in rim designs (4 forms) and handles (6 varieties of shafts and 9 of knobs). Figure 9 sums up the variety of rims, knobs and handles. While certain designs, like the pointed rim R1 and the flat shaft S6, seem to be diagnostic for type-A and type-C vessels respectively, most designs are present in two or more vessel types.







R1		Pointed, thickened
R1a		Pointed
R1b		Rounded, thickened
R2		Rounded
R3		Flat
R4		Tapered

Figure 6. Variety in rim shapes R1–4.










K1  Rectangular	K4  Rectangular, vertical	K7  Faceted
K2  Rectangular, narrow	K5  Rectangular, narrow placed under rim	K8  Triangular
K3  Square	K6  U-shaped	K9  Rectangular, narrow, vertical

Figure 7. Variety in knob shapes K1–K9.







S1  Faceted	S3  Square	S5  U-shaped
S2  Triangular	S4  Oval	S6  Flat

Figure 8. Variety of shaft shapes S1–S6.

Figure 9. The diversity of design in rim shapes and handles, all vessel types.

Vessel types	Rim shapes Measurements n=370				Knobs Measurements n=105									Shafts Measurements n=56					
	R1	R2	R3	R4	K1	K2	K3	K4	K5	K6	K7	K8	K9	S1	S2	S3	S4	S5	S6
A	165	18	7	1	14	1	12	3	-	-	1	1	-	20	7	2	2	1	-
B	-	29	55	31	5	5	26	11	3	2	1	1	-	1	2	1	6	5	-
C	-	-	6	3	-	1	-	-	-	-	-	-	-	-	-	-	-	-	5
D	-	5	22	7	2	5	2	-	2	2	-	-	2	-	-	-	-	-	-
E	-	-	14	-	-	1	-	-	-	-	-	-	-	1	-	2	-	-	-
F	-	7	-	-	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-
Total	165	59	104	42	22	13	40	15	5	4	2	2	2	23	9	5	8	6	5

Type-A vessels

The type-A group from Bryggen consists of 419 shards from 311 vessels. Type-A vessels are characterised by curved walls and a rounded or semi-flattened base and faceted tooling of the outer vessel walls. Most of the vessels have a very distinct pointed rim (R1) and two or three handles; both knobs and shafts are equally common (Figure 10).

The type-A vessels are found in size categories ranging from very large to small. As Figure 11 shows, the medium size is the most abundant. Compared to the other vessel types, the A vessel is both the largest and most diversely sized. The wall thickness relates to vessel size, and in half of the vessels (50%), it seems to be between 1 to 1.4 cm. The height-width ratio varies significantly from

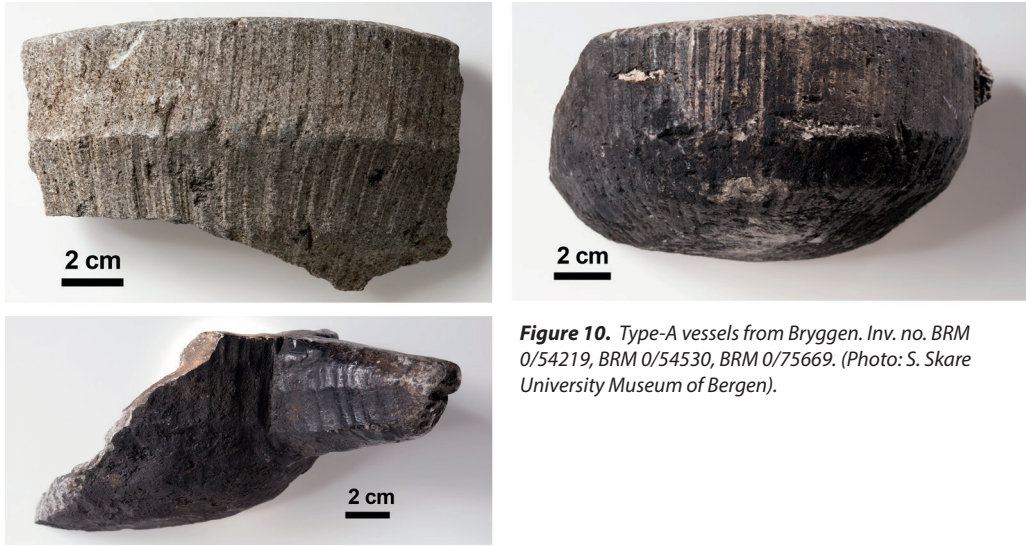


Figure 10. Type-A vessels from Bryggen. Inv. no. BRM 0/54219, BRM 0/54530, BRM 0/75669. (Photo: S. Skare University Museum of Bergen).

Figure 11. Type-A vessels, wall thickness, rim diameter.

A vessels wall thickness/ rim diam	Small 10–19 cm	Medium 20–29 cm	Large 30–39 cm	Very large 40+ cm	Total
0.5–0.9 cm	12 = 39%	11 = 16%	0	0	23 = 18%
1–1.4 cm	18 = 58%	36 = 53%	10 = 43.5%	1 = 12.5%	65 = 50%
1.5–2 cm	1 = 3%	16 = 24%	10 = 43.5%	4 = 50%	31 = 24%
2+ cm	0	5 = 7%	3 = 13%	3 = 37.5%	11 = 8%
Total	31 = 100%	68 = 100%	23 = 100%	8 = 100%	130 = 100%

Figure 12. Type-A vessels, chronological distribution of rim shapes, knob and shafts designs.

Design of dated A vessels	Rim shapes Measurements n=174				Knobs Measurements n=31							Shafts Measurements n=36				
	R1	R2	R3	R4	K1	K2	K3	K4	K5	K8	K9	S1	S2	S3	S4	S5
P1c. 1020/30–c. 1120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P2 1120s–1170/71	36	1	1	4	2	-	3	-	1	-	1	6	2	-	-	-
P3 1170/71–1198	51	-	3	7	4	-	3	2	-	1	-	10	2	1	2	-
P4 1198–1248	43	-	2	2	5	1	3	-	1	-	-	7	1	-	-	-
P5 1248–1332	9	-	3	6	1	-	2	-	1	-	-	2	1	1	-	1
P6 1332–1413	4	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
P7 1413–1476	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P8 1476–1702	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P9 1702–1955	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	144	1	9	20	12	1	11	2	3	1	1	25	6	2	2	1

1:1.9 to 1:4.8. The proportions of the vessels change during the medieval times as discussed below. None of the type-A vessels at Bryggen are ornamented, with the exception of one of the handles, that has an incised line.

Type-A vessels are the dominant vessel type at Bryggen until about 1248; i.e. in periods 1 to 4, the early vessels are relatively large and all sizes are present. In the later periods, the size of the vessels decreases. Figure 12 gives a picture of the trends in the chronological development of rim shapes and the design of knobs and shafts. Before 1248 the vessel type is uniform, mainly with R1 rims, and the faceted shaft as the dominant handle type. From period 5, after 1248, the manufacture seems to get more diverse and random and both rims and handles seem to have a more inconsistent design. After the mid-13th century this vessel type is clearly in decline not only in numbers, but also in quality.

Type-B vessels

The type-B group from Bryggen consists of 299 shards from 229 vessels. Type-B vessels have a curved or sometimes semi-flattened base, the sides' surfaces are smoothed and straight or slightly curved and junction between the bottom and walls is smooth (Figure 13). The form is, similar to the Viking Age type Rygh 729 (Rygh 1885), but the proportions seem to differ. B vessels of size small are the most common, and walls are quite thin, most commonly less than 1 cm (51%). Compared to type-A vessels, type-B vessels are smaller, with thinner walls and are generally of more homogenous size (Figure 14). The height-width ratio varies from 1:1.9 to 1:3.6. The size of the vessel type decreases over time, and the percentage of semi-flattened bases, the prevailing base shape from period 6 (1332), increases.



Figure 13. Type-B vessels with knobs, from Bryggen. Inv. no. BRM 0/47096, BRM 0/61234, BRM 0/77223. (Photo: S. Skare University Museum of Bergen).

Figure 14. Type-B vessels, wall thickness, rim diameter.

B vessels wall thickness/ rim diam	Very small <10 cm	Small 10–19 cm	Medium 20–29 cm	Large 30–39 cm	Very large 40+ cm	Total
0.5–0.9 cm	4 = 100%	34 = 55%	12 = 41.5%	0	0	50 = 51%
1–1.4 cm	0	24 = 39%	14 = 48%	3 = 100%	0	41 = 41%
1.5–1.9 cm	0	4 = 6%	2 = 7%	0	1 = 100%	7 = 7%
2+ cm	0	0	1 = 3.5%	0	0	1 = 1%
Total:	4 = 100%	62 = 100%	29 = 100%	3 = 100%	1 = 100%	99 = 100%

Figure 15. Type-B vessels, chronological distribution of rim shapes, knob and shafts designs.

Design of dated B vessels	Rimshapes Measurements n=108				Knobs Measurements n=52								Shafts Measurements n=12				
	R2	R3	R4	R5	K1	K2	K3	K4	K5	K6	K7	K8	S1	S2	S3	S4	S5
P1 c. 1020/30–c. 1120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P2 1120s–1170/71	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
P3 1170/71–1198	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P4 1198–1248	3	5	5	1	-	-	1	1	-	-	-	-	1	1	-	1	1
P5 1248–1332	3	21	9	-	2	-	3	4	6	1	2	-	-	1	-	2	-
P6 1332–1413	13	23	11	-	3	5	14	-	3	-	-	1	-	-	-	-	1
P7 1413–1476	6	2	3	-	1	2	-	-	2	-	-	1	1	-	-	1	-
P8 1476–1702	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P9 1702–1955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Total	25	53	29	1	6	7	18	5	11	1	2	2	2	1	1	4	4

Viking Age vessels often have an iron handle whereas medieval vessels have cut-out knobs or shafts. Knobs are more than four times more common than shafts on B vessels. Figure 15 shows some trends in the chronological changes in vessel design; the rim type R3 – the flat rim – becomes more frequent from the mid-13th century and R2 the rounded rim – becomes more frequent in the 14th century, i.e. from period 6 on (1332–1413). In period 6, K3 – the square knob design – dominates the handles, which are more diverse in design in the periods before and after. Although the number of shaft measurements is small, it seems like shafts are present in higher numbers proportionally in the early settlement phases compared to after 1248, when the majority of B vessels seems to have knobs only. The Bryggen B vessels are in a few cases (n=8) ornamented with one or two incised grooves under or on top of the rim and on top of the shafts.

B vessels are found at Bryggen from period 2 on. B vessels peak during periods 5 and 6 and are the dominant vessel type during these periods. Only a few vessels are found in contexts dating to after the late 15th century.

Type-C vessels

The C-type group, which has curved walls and a rounded base like A and B vessels, consists of 19 shards from 18 vessels. The walls' outer surface is easily distinguished by its rough tooling using a pointed tool, except for a smooth band below the rim (Figure 16). The rim diameter of C vessels in the Bryggen material varies between 15 and 31 cm, but could only be measured on seven vessels: two fall within the size category small, three within the medium category, and one is large. The average



Figure 16. Type-C vessels from Bryggen. Inv. no. BRM 0/44706, BRM 0/80455. (Photo: S. Skare University Museum of Bergen).

wall thickness is about 1–1.4 cm (n=9), with seven being thinner and one vessel being thicker. It was not possible to measure the height ratio on any of the artefacts. Too few of the vessels are preserved to describe the proportions of the vessel type as a whole, or the chronological development of the type. Some type-C vessels have a characteristic long, flat handle (S6) at Bryggen and they are not decorated.

The C vessel is present in the Bryggen assemblage from periods 2 to 6. The number of C vessels is altogether small so it is hard to determine if, or when, the type has a peak at Bryggen. The poor preservation of the vessels, as well as the low number of shards, does not allow for us to detect any chronological development in shape or size.



Figure 17. Type-D vessel from Bryggen. Inv. no. BRM 0/49636. (Photo: S. Skare University Museum of Bergen).

Figure 18. Type-D vessels, wall thickness, rim diameter. (Bergen).

D vessels wall thickness/ rim diam	Very small <10 cm	Small 10–19 cm	Medium 20–29 cm	Large 30–39 cm	Total
0.5–0.9 cm	2 = 100%	15 = 68%	3 = 33%	0	20
1–1.4 cm	0	5 = 23%	6 = 67%	1 = 100%	12
1.5–1.9 cm	0	1 = 5%	0	0	1
2+ cm	0	1 = 5%	0	0	1
Total	2 = 100%	22 = 100%	9 = 100%	1 = 100%	34

Figure 19. Type-D vessels, chronological distribution of rim shapes, knob and shafts designs.

Design of dated D vessels	Rim shapes Measurements n=32			Knobs Measurements n = 11							
	R 2	R 3	R4	K1	K2	K3	K4	K5	K6	K8	K9
P1 c. 1020/30–c. 1120	-	-	-	-	-	-	-	-	-	-	-
P2 1120s–1170/71	-	-	-	-	-	-	-	-	-	-	-
P3 1170/71–1198	-	1	-	-	-	-	-	-	1	-	-
P4 1198–1248	-	-	1	-	-	-	-	-	-	-	-
P5 1248–1332	-	-	1	-	-	-	-	-	-	-	-
P6 1332–1413	4	10	3	1	2	-	-	1	1	-	1
P7 1413–1476	1	7	2	1	1	1	1	-	-	1	-
P8 1476–1702	-	2	-	-	-	-	-	-	-	-	-
P9 1702–1955	-	-	-	-	-	-	-	-	-	-	-
Total	5	20	7	2	3	1	1	1	2	1	1

Type-D vessels

The type-D group, defined as flat bottomed vessels with straight, smoothed walls with an angled junction between the bottom and wall (Figure 17), consists of 71 shards from 61 vessels. The vessel type's most common size category is small with a rim diameter between 10–19 cm. The walls are generally thin – less than 1 cm (Figure 18). The height ratio varies from 1:2 to 1:3.6. Figure 19 shows trends in the chronological development of rim and knob design. The flat rim shape R3 is the most common. No shafts are present in the Bryggen assemblage, and the 11 measured knobs are very varied with 8 different design groups represented. Traces of holes for metal handles are observed on one vessel. In four cases type-D vessels were ornamented like the B vessels with one or two incised grooves close to the rim (2) or on the knobs (2).

D vessels at Bryggen are found from period 3 throughout period 9. The type has its peak with respect to numbers during periods 6 and 7. During periods 7 and 8, that is, from the late 15th century and throughout the early modern period, it is proportionally the most common vessel type. It is not possible to detect a distinct chronological development in the design of the type from the Bryggen material.

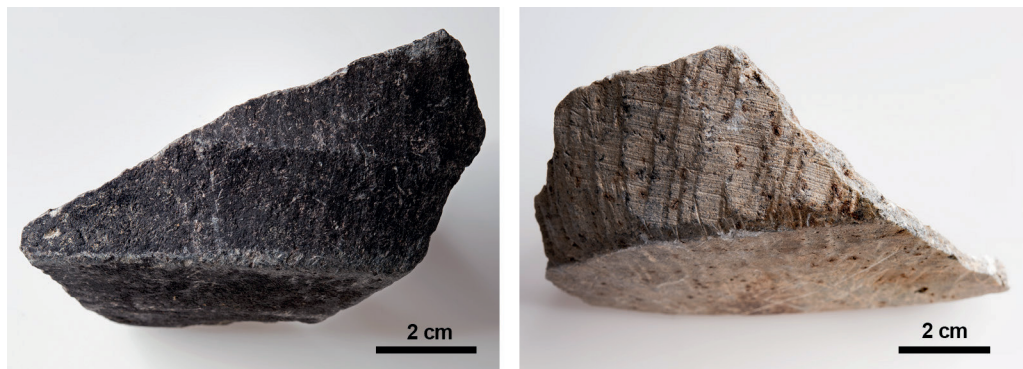


Figure 20. Type-E vessel from Bryggen, seen towards the faceted bottom, angled junction between bottom and straight, faceted sides. Inv. no. BRM 0/49509, BRM 0/69125. (Photo: S. Skare University Museum of Bergen).

Type-E vessels

The type-E group consists of 30 shards from 28 vessels. This type has the same form as D vessels, and are thus flat bottomed with straight walls and a sharp angled junction between the bottom and the sides. Type-E vessels have a distinct faceted surface treatment similar to that seen on A vessels (Figure 20). The E vessels are generally small with thin walls, less than 1 cm thick (Figure 21). As opposed to the D- type vessels, E vessels not only have knobs but also shafts with which to lift the vessel. One knob and three shafts have been found.

The vessels date from period 6 to period 9 with a peak in periods 6 and 7 (1332–1476). The vessels are too few to determine any chronological development of the type.

Figure 21. Type-E vessels, wall thickness, rim diameter.

E vessels wall thickness/ rim diam	Small 10–19 cm	Medium 20–29 cm	Total
0.5–0.9 cm	9 = 75%	0	9
1–1.4 cm	3 = 25%	4 = 100%	7
Total	12 = 100%	4 = 100%	16



Figure 22. Type-F vessels from Bryggen. Inv. no. BRM 0/56949, BRM 0/76447 (Photo: S. Skare University Museum of Bergen.)

Type-F vessels

The type-F group consists of only nine shards from nine vessels and is the least numerous type at Bryggen. Type-F vessels are characterised by being bowl shaped with a curved bottom and sides divided into vertical panels. The upper part near the rim is kept smooth like the rim of type-C vessels (Figure 22). The vessels are small (43%) and middle sized (57%), the walls are quite thin – 78% are less than 1 cm thick and the wall thickness is not directly connected to the vessel size. F vessels are only known to have knobs, not shafts. The representativity of these observations for the type-F as a whole must be taken with some reservation since the number of vessels in the study is small.

At Bryggen, type-F vessels are found during periods 5 to 7 (1248–1476) with a peak in period 6. Type-F vessels are too few to determine any chronological development of the type.

A summary of the typological and quantitative development over time

The distribution over time shows the use of soapstone vessels in the Bryggen area during all settlement phases from the earliest period dating from the 11th century to the last period after the fire in 1702 (Figures 23 and 24). The Bryggen soapstone vessel assemblage shows a marked morphological and quantitative variation over time. During the oldest period dating from c. 1020/30 to 1120, only A vessels are found. The number of vessels from this extended period of time is, however, small (3) and one should be careful not to place too much trust in this early material (see Hansen 2005:58–67 for details on the dates of the oldest material at Bryggen BRM 0). During period 2, from the 1120s to 1170/71, two more types of vessels (B and C) are present in the material, but type-A vessels dominated for another hundred years throughout period 4 (1198–1248). From period 5 throughout period 6 (1248–1413), that is, for almost 200 years, type-B vessels were the most common soapstone pot in the wharf area. Type-C is present in small numbers from periods 2 to 6. Towards the end of the middle ages and throughout the early modern period, the straight-walled, flat-based types E and D

Figure 23. Chronological distribution of all soapstone vessels from the Bryggen site BRM 0 in Bergen from periods 1 to 9. Vessels $n=806$.

Vessel type	A	B	C	D	E	F	Classified	Un classified	Total
P1 c. 1020/30– c. 1120	3	-	-	-	-	-	3	-	3
P2 1120s –1170/71	76	1	1	-	-	-	78	17	95
P3 1170/71–1198	81	3	2	1	-	-	87	21	108
P4 1198–1248	83	26	4	2	-	-	115	15	130
P5 1248–1332	39	70	3	2	-	1	115	27	142
P6 1332–1413	12	95	4	27	11	5	154	40	194
P7 1413–1476	1	18	-	21	8	2	50	7	57
P8 1476–1702	-	4	-	6	5	-	15	6	21
P9 1702–1955	1	3	-	2	2	-	7	2	10
P?	15	9	4	0	2	1	31	15	46
Total	311	229	18	61	28	9	656	150	806

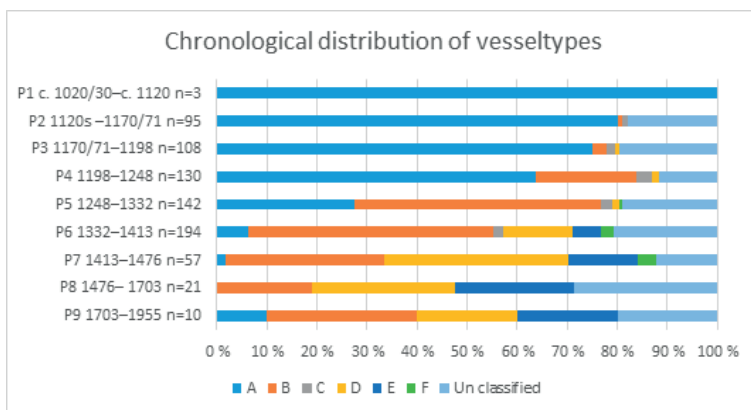


Figure 24. The chronological distribution of soapstone vessels from the Bryggen site BRM 0 in Bergen as % of all vessels from periods 1 to 9.

became more popular. For a timespan of about 150 years during periods 6 and 7 (1332–1476), all six vessel types A–F were in use at Bryggen. From period 7 on, i.e. from the 15th century and throughout the period under study, we have no clear evidence of A and C vessels being present here; the single A vessel found in period 9 has so many archaic attributes that I find it hard not to think it must have been redeposited and from a far older primary context. Type-F vessels went out of use after 1476 while types B, D and E were present during the latest settlement periods of the wharf.

The dating of the Bryggen assemblage in relation to comparative material

Compared to the other published Norwegian medieval soapstone assemblages, the Bryggen material shows that the A–D types were in use over a longer timespan than has been previously recognised. Type-A vessels have been found at Borgund in contexts dated very broadly from 1100 to 1300 (Lossius 1977:52–53), and at Borg in Lofoten in northern Norway in ¹⁴C dated strata from c.1000 to early c. 1300 (Brodshaug 2005; Brodshaug & Solli 2006:296). The Bryggen A vessels date from the late 11th century throughout period 6 (1332–1413). The decline in the number of type-A vessels during period 6, between 1332–1413 at Bryggen, corresponds with the chronological pattern indicated at Borgund and Borg, thereby giving an overall picture of the type as a possibly early, but primarily high medieval vessel type (Norwegian high Medieval period c. 1130–1350). The A vessel assumedly has its primary provenance in the western part of Norway, but evidence of production is also found on the coast of Helgeland in the southern part of the Nordland County in northern Norway (Berglund 1999).

Type-B vessels can be found in the Viking period and are present at Borgund in contexts dated very broadly from c. 1100 to the post-medieval time (Lossius 1977:52–53). The Bryggen assemblage dates the B vessels from period 2 (1120s–1170) to post medieval times, and parallels the results from Borgund. It has not been possible to identify a specific area of production for this vessel type so far, and its general shape makes it likely to have been produced independently over a larger area.

Type-C vessels are mainly found in the eastern part of Norway (Oslo, Tønsberg), in contexts dated from 1000/1100 to post-medieval times in Tønsberg and from c. 1150 to post-medieval times in Oslo (Lossius 1979:64–71), while the vessel type disappears at Bryggen after or by the 15th century.

C vessels are believed to be of eastern Norwegian provenance due to the type's overall distribution pattern (Lossius 1977:51).

According to Lossius, a small number of type-D specimens are known from the Viking Age. The few vessels of this type from Borgund date to around 1300. In addition, type-D vessels have been found in contexts dating to the late medieval/post-Medieval periods, i.e., mainly dating to the 16th century and later (Lossius 1977:51). In the Bryggen assemblage, type-D vessels appear in period 3, the late 12th century, but seem to be increasingly common during the 14th century. The Bryggen assemblage shows an earlier use of the D-type vessel than the hitherto published medieval material (Lossius 1977:51), and confirms the primary distribution of the vessel type during the late medieval and post-Medieval periods. The provenance of the type-D vessels is unknown (Lossius 1977:63), but it might be possible to establish regional variations if vessel assemblages from several regions are compared.

Until now, no finds of type-E and F vessels have been published from sites other than the Bryggen site in Bergen. However, in connection with my master study, I observed several specimens in the University Museum of Bergen's collection of medieval archaeological finds from western Norway. This confirms the two types' existence at other western Norwegian medieval sites. Still, a closer study of these artefacts' contexts is necessary to give further indications of the types' dating in contexts beyond Bryggen and Bergen. The types' provenance is unknown and awaits further study.

Discussion – the use of soapstone vessels at Bryggen through time

The results of the typological analysis of the medieval soapstone vessels from Bryggen in Bergen has led to several questions concerning the mechanisms and events leading to the quantitative and qualitative development of soapstone pots during the medieval and early modern period.

A gradual overall decrease in the use of soapstone pots at Bryggen

Upon looking at the chronological development of soapstone vessel consumption, an estimate of the number of vessels consumed per decade throughout the period under study proves interesting. During the Bryggen excavations, some parts of the area had the upper strata, younger than 1248, removed by hydraulic excavators (Herreig 1990; Hansen 1998). To ensure a correct understanding of the quantitative chronological development, it is useful to compare the figures from the total excavated area at the Bryggen site with figures from a selected area excavated using the same method from the top to the bottom strata. In Figure 25 the number of vessels found per decade at the whole Bryggen site as well as figures based on a selected area are seen. The numbers from the whole site show that during period 3, the largest amount of soapstone vessels were consumed per decade, with 36 vessels per decade. The most significant quantitative decline in consumption happened sometime during period 7, in which the number of vessels per decade drops from 24 to 9.5, with a further drop during period 8 when a number of only 0.9 vessels is found per decade. The equivalent figures for the selected site coincide well with this development (the actual numbers per decade are lower since the number of vessels from the selected area is lower). In the selected area there is also a peak in period 3 and a marked decline in periods 7 and 8. From the 15th century onwards, soapstone cooking pots could not have been a common sight at the wharf.

The town's population increased rapidly from the mid-12th century onwards, and international trade flourished throughout the Medieval period. Judging by the amount of pottery found (e.g. Lütke 1989), the availability of ceramic cooking pots must have been good and stable in Bergen. Metal cooking pots were manufactured in Bergen from the last quarter of the 13th century at the

Figure 25. The number of dated soapstone vessels per decade in periods 1 to 9 from the whole Bryggen BRM 0 site and from selected archaeological contexts at the site.

	Total all contexts n=760	Number per decade	Total comparable contexts n=554	Number per decade
P1 c. 1020/30–c. 1120	3	?	3	?
P2 1120s –1170/71	95	19	47	9.4
P3 1170/71–1198	108	36	98	33
P4 1198–1248	130	26	84	17
P5 1248–1332	142	18	91	11
P6 1332–1413	194	24	161	20
P7 1413–1476	57	9.5	45	7.5
P8 1476–1702	21	0.9	18	0.8
P9 1702–1955	10	0.4	7	0.3

latest (Helle 1995:433). On this basis, a gradual decrease in the use of soapstone pots through the Medieval period should be expected. It is therefore surprising to notice that the decrease in the number of soapstone vessels discarded annually does not drop off until sometime in the 15th century, a good while after the establishment of the Hanse kontor at Bryggen around 1360. After the establishment of the kontor, the area became inhabited more or less exclusively by Hanseatic merchants. The late drop-off may to some extent, as noted in the introduction to this paper, be explained by the chronological 'delay'/extension of the time span during which the vessel types appear in the archaeological record due to the presence of a certain amount of redeposited material in some of the contexts at the Bryggen site. The trend that the final drop in consumption does not occur till period 8, however, should probably be considered trustworthy.

The decline of the type-A vessels – a change in the mode of production

The western Norwegian type-A vessels of widely differing sizes dominate during the earliest periods at Bryggen. I suggest that the decline in the quantity of type-A vessels in the 13th century may be connected to changes in the regional production and/or distribution of soapstone vessels. I suggest that such a decline may be caused by the depletion of the best soapstone quarries for building stone in the 12th and 13th centuries when approximately 20 stone churches were erected in Bergen (Ekroll 1997; Storemyr & Heldal 2002:363). Eleven stone churches and three monasteries were built in Bergen during the 12th century alone (Helle 1995:149), and the pressure on the regional soapstone resources and workforce must have been substantial. This quite rapid change in the utilisation of the quarries/soapstone resources must have affected the mode of production of soapstone vessels. It is not known if the same workers that had (seasonally?) extracted pots from the quarries continued to work with building stone, or if new specialists took over. The scale of production in the Viking Age indicates good organisation (Skjølsvold 1961; Østerås 2002), and I find it likely that the well-organised production continued for a while into the medieval age (but see Hansen et al. this volume). The decline in urban consumption of the type-A vessels about c. 1300 might reflect a decline in the production of these vessels and a shift in the way the quarries were organised, and/or the depletion of the resources followed by the termination of a several hundred-year old western Norwegian vessel-

manufacturing tradition. This interpretation of the decline is strengthened by the fact that the design of the A vessels becomes less uniform and stringent from period 5 on (1248–1332). The suggested late medieval development from large-scale to small-scale local production in western Norway may find some support in a description in a letter from the royal chancery (Norwegian: kongebrev) from 1577 mentioning how local farmers extracted soapstone pots from a quarry at Lysekloster south of Bergen: ‘... *af et stenbrud ved Lysekloster hvoraf bønderne gjøre gryder og potter...*’ (Helland 1893:177).

From overall important household vessel to special purpose item

In the earliest settlement periods, soapstone vessels with a diverse array of sizes have been in use for a variety of cooking purposes (Figure 26). The large and heavy vessels disappear from the assemblage first; perhaps they are substituted with more expensive but durable metal cooking pots? Metal vessels were imported into Bergen, and as already mentioned, manufactured locally in Øvregaten no later than the end of the 13th century (Helle 1995:433).

In Viking Age and medieval Norway no indigenous pottery tradition existed and soapstone pots are considered the main cooking vessel in Norwegian households during this time (e.g. Schou 2015:204, this vol.). The relation between the absence of a Norwegian medieval pottery production and the presence of a strong soapstone industry has been much debated (e.g. Molaug 1982:211). Likewise, evidence for an increase in the importation of pottery, leading to a decrease in the production of soapstone vessels, has been sought in several Norwegian medieval towns. At the medieval Mindets tomt site in Oslo, Petter Molaug sees a parallel decline in the use of both soapstone and ceramic cooking pots in favour of metal vessels during the 13th century (Molaug 1982:208). Siri Myrvoll did not find any clear connection between an increase or decrease in the quantity of ceramics compared to soapstone cooking pots in her study of material from medieval Oslo and Skien (Myrvoll 1983:22). For Bryggen, however, the pattern is so far not clear. One might expect that soapstone vessels were also the most common household container, relatively speaking, during the earliest period at the Bryggen wharf. However, it is difficult to assess the actual frequency of soapstone vessels versus pottery during period 1 at this particular site. This is due to both methodological problems inherent in the documentation system at the site, and the circumstance that actual settlement and activity in

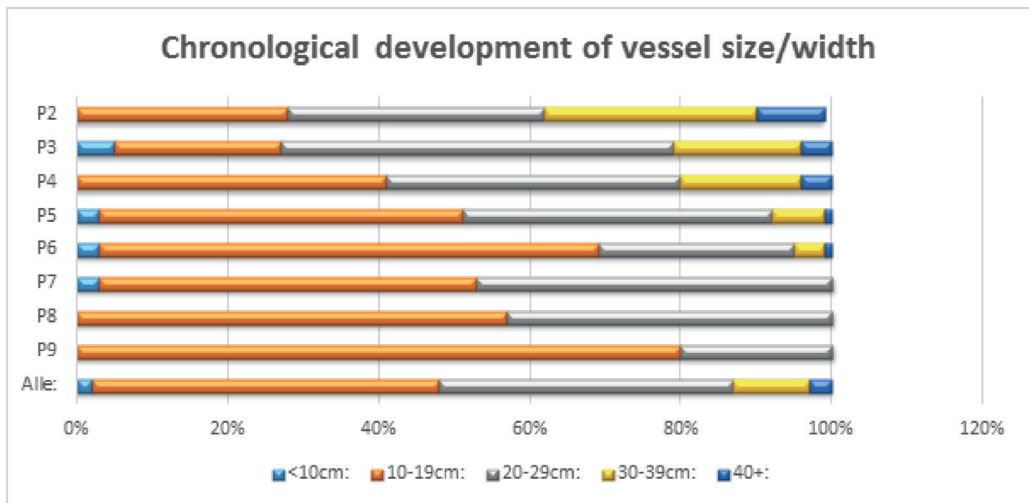


Figure 26. The chronological development of soapstone vessel rim diameter.

this area of the town was sparse until some decades into the 12th century (Hansen 2005). One of the published ceramic wares from Bryggen is the English Shelly-Sandy Ware (Blackmore & Vince 1994). This pottery type was typically used as cooking ware, and may thus have filled the same main function as soapstone vessels. It is suitable as a comparative material to the soapstone vessels. The quantity of this ceramic type had its peak at Bryggen in period 3 – identical to soapstone vessels. Based on figures in Lyn Blackmore and Allen Vince’s studies, almost 5 times as many Shelly-Sandy shards as soapstone shards were deposited in period 3 (1170/71–1198), and seven times as many were deposited in the following period 4 (1198–1248). With the reservation that pottery is less durable than soapstone, and thus may fragment into more pieces when broken – and that pottery is not so often repaired and reused compared to soapstone vessels – the trends are clear. They show an increase in the use of ceramic cooking pots compared to soapstone pots. An interesting observation is that Shelly-Sandy cooking pots are most often (62%) medium sized (20–29 cm) while the rest (38%) are small vessels (10–19 cm) (Blackmore & Vince, 1994:57). They thus seem to fill the same need for small and medium sized pots as the soapstone vessels.

Changes in medieval meal and cooking customs

The size of the vessels is, together with the shape of the base, an important functional feature. Combined with traces of use, like soot, it can help us understand how these vessels were used. In Figure 27 we see that traces of soot are found on the outer surface of 72% of vessels. This shows that soapstone vessels were mainly used as cooking pots. D vessels are an exception to this general picture. Only 61% of the D vessels are sooted, making it probable that the vessels had been used for other purposes as well. It is also interesting to observe that in several cases the largest vessels are burned on the outside but have no traces of food residue on the inside. It might point to the use of the largest vessels for heating fluids that do not adhere to the surface, such as water. Some of the D vessels could have been used for serving purposes only. It is a clear tendency that the bottom part of the type-B vessels get a more semi-flattened design during the 13th century; this facilitated the pots standing flat on the table. Furthermore, the long handles or shafts became less frequent during this period. The long handles were most likely used to drag the pots around in the hearth, and were not necessarily used to lift the pots.

During the second third of the 14th century (period 6), straight-walled vessels with flat bottoms (D and E-types) became more frequent. This could be a consequence of changes in the kitchen and meal customs. We know that earthenware, the German three-legged pipkin, was used for heating food and then serving it on the table in the late Medieval period (Molaug 1982:210; Demuth 2015). The

Figure 27. Traces of soot and residue on the Bryggen soapstone vessels.

	A	B	C	D	E	F	Un classified	Total
External soot only	105 = 34%	38 = 17%	6 = 33%	12 = 20%	7 = 24%	3 = 33%	40 = 27%	211 26%
Ext.+ internal soot/residue	138 44%	134 59%	12 67%	25 41%	15 55%	5 56%	44 = 29%	373 46%
Total soot traces	243 78%	172 = 75%	18 100%	37 61%	22 79%	8 89%	84 = 56%	584 72%
Number of vessels	311	229	18	61	28	9	150	806

smaller, flat-bottomed soapstone vessels from the later periods can probably be seen as an adaption to a more 'urbanised' identity, expressed by imported ceramics (cf. Christophersen 1999:144). The Pingsdorf ceramic jugs and beakers from Bryggen (dated to periods 2–4) likewise indicate a familiarity with contemporary European drinking customs in medieval Bergen (Lüdtke 1989:67).

Analysis of food residues from soapstone vessels at the high medieval dwelling Borg III in Lofoten, northern Norway (dated to c. 1100–1300) shows that the same pots were used for a wide variety of medieval food – meat, fish, rye, peas and milk products (Brodshaug 2005:105–110). It is however uncertain if there are similarities to the use of soapstone pots in the more urban environment at Bryggen. Nevertheless, it is obvious that some use of soapstone cooking pots still took place even after the introduction of more 'sophisticated' vessels available in what became a gradually internationalised and urbanised environment.

Concluding remarks

The soapstone vessel assemblage from Bryggen in Bergen confirms the use of soapstone vessels as cooking pots through all the wharf's settlement periods, roughly from the 11th century throughout the medieval and early modern period up to 1702. The use of soapstone pots seems to significantly decline in 15th century. Evidently, the use of soapstone vessels also continues at the wharf after the German Hanseatic merchants took over the area in the 1360s. The assemblage shows a wide range of form and size categories. All four previously published medieval Norwegian vessel types and two 'new' types are present. The material suggests a distinct change in vessel manufacturing in the late 13th or early 14th century (Bryggen period 5) when the type-A vessels ceased to be produced. This coincides with the results of Bård Økland's study of waste management at Bryggen where he suggests that a turn towards a more urbanised society in Bergen happened during the 15th century (Økland 1998:122–123). The more limited range of sizes, which characterises the late Medieval period, points to a gradually marginalised use of soapstone pots towards the end of the Middle Ages. While cooking pots in ceramic and metal were available all through the settlement periods, technological developments leading to more reasonably priced metal pots and lead glazed pottery may more or less have ended the demand for soapstone vessels in Bergen by the end of the Medieval period.

The preference for smaller pots with a flat bottom and knobs instead of long handles may reflect the change from cooking a meal at the fireplace/hearth and serving the food on the table in other vessels, to serving the meal directly from the cooking pot placed on the table. The development from larger to smaller cooking pots during the late Medieval period might indicate that meals became more elaborate with several small dishes replacing the earlier 'one big pot dish'.

Based on the quantitative analysis of the extensive assemblage of soapstone vessels from Bryggen, changes in the use of soapstone vessels in medieval Bergen are indicated. There are most likely several explanations for the changes seen. Important reasons for change pinpointed here are the decreasing availability of good soapstone resources combined with an increased importation and production of cooking pots out of other materials. Furthermore, mentality changes towards a late medieval urbanised society with an international, European identity must have contributed to changes in, and eventually the decline of, the usage of soapstone vessels as cooking pots at the Bryggen wharf in the late Medieval period.

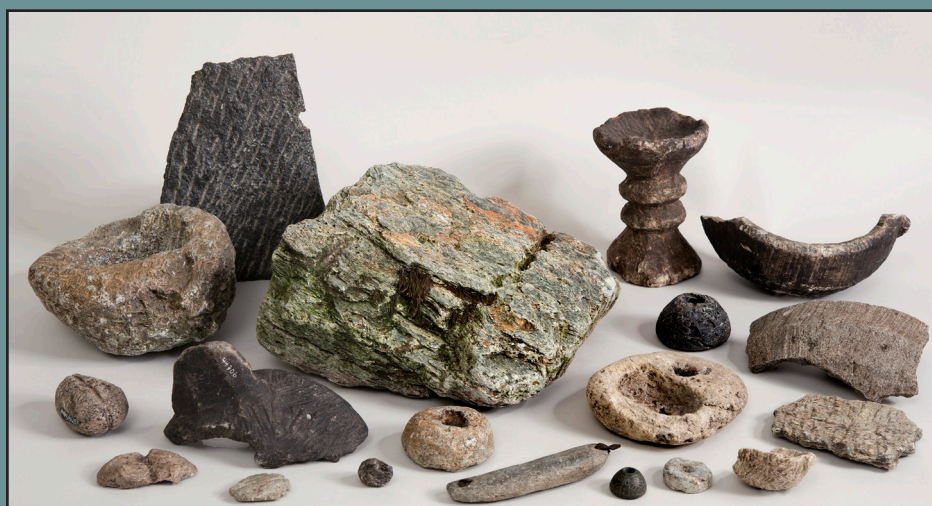
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Soapstone in the North. Quarries, Products and People. 7000 BC – AD 1700

Soapstone is a remarkable rock. While it is soft and very workable, it is also durable and heat-resistant, and with a high heat-storage capacity. These properties have been recognised and valued around the world since prehistoric times, and soapstone has been used for a multitude of purposes, ranging from everyday household utensils to prestigious monuments and buildings. This book addresses soapstone use in Norway and the North Atlantic region, including Greenland. Although the majority of the papers deal with the Iron Age and Middle Ages, the book spans the Mesolithic to the early modern era. It deals with themes related to quarries, products and associated people and institutions in a broad context. Recent years have seen a revival of basic archaeological and geological research into the procurement and use of stone resources. With its authors drawn from the fields of archaeology, geosciences and traditional crafts, the anthology reflects cross-disciplinary work born of this revival.



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