

Irene Baug



Who owned the products? Production and exchange of quernstones, Hyllestad in Sogn, Western Norway

One of the largest production areas for quernstones and millstones in Norway is located in Hyllestad by the Åfjord, north of the outlet of the Sognefjord.

The quarries are located in an area of about 27 square kilometres. The natural condition for the quernstone production in Hyllestad was the occurrence of a special type of rock: kyanite-garnet-muscovite-schist, which lies along the north and the eastern side of the Åfjord. Within this area quarries are spread at frequent intervals. Some places are so clustered with production waste that the original terrain is no longer visible.

The technology used in the oldest quarries was to hew the quern-stones directly out of the rock. In the quarries, there are still traces of grooves and circles from the hewing of both smaller quernstones and larger millstones. In some quarries, unfinished quernstones and millstones are left on the rock wall.

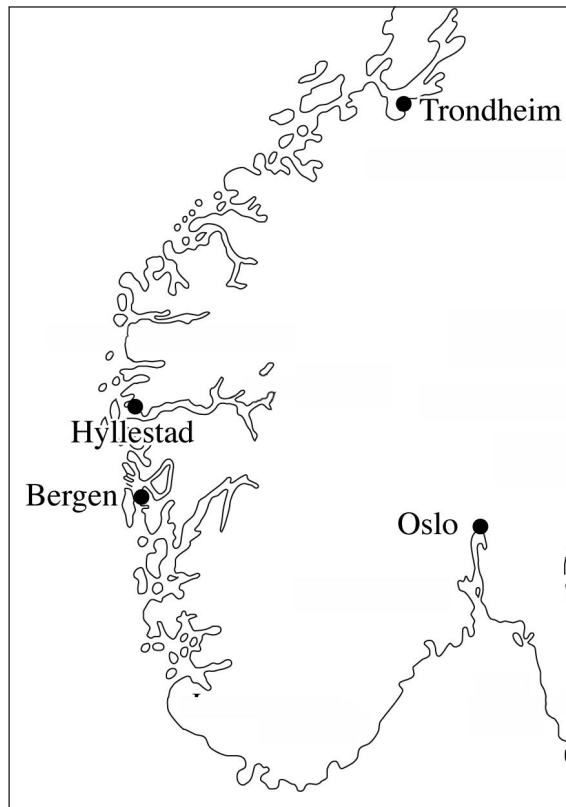


Figure 1. Map of the location of Hyllestad

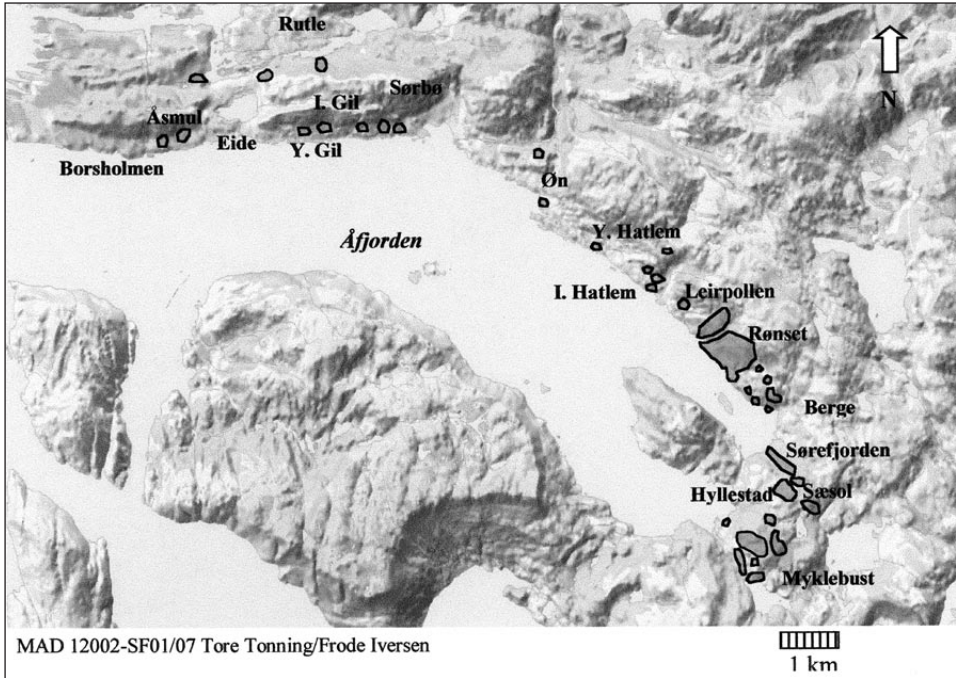


Figure 2. Map of the production area



Figure 3. Quarry at Otringsneset, Rønset, with remains of quernstone hewing



Figure 4. Quarry during excavation at Rønset

However, not only stones for grinding were produced here. Several stone-crosses from the early period of Christianity in Norway were made here, and so were vats, fonts and lids for coffins.

Dating of the production

To illuminate questions concerning the period of production, extent and production methods, surveying and small-scale archaeological investigations were undertaken within the production area. To achieve a good representation through limited archaeological investigations, four areas with different types of quarries were chosen for the investigation. These are located within the areas of three different farms. The investigated quarries are located one at each of the farms Myklebust and Sæsol, and two at the farm Rønset. The quarries are located at different distances from the sea and thus possible shipping ports and, additionally, they differ in altitude.

Trenches were dug from the rocks and into the heaps of production waste in order to establish a stratigraphical and chronological relation between the rock and the heap. Stratigraphical analyses combined with C¹⁴ datings from charcoal in the different deposits in the heaps made it possible to date the activity in the quarries.

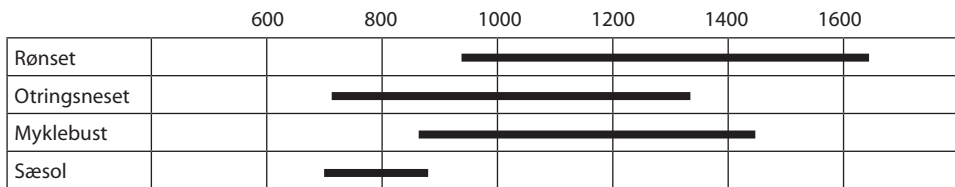


Figure 5. *Datings from the excavated quarries*

The dated material indicates that the production may originate from the Merovingian period in the eight century. This is the case for the quarries at the farm Sæsol and the Otringsneset site at the Rønset farm. The datings also demonstrate activities in several of the quarries at the same time. All four investigation areas date back to the Viking period, or the transition between the Viking period and the Middle Ages. The period between the eleventh and the fourteenth century is, however, the period with the most activity in the investigated areas.

The quarries with the most recent activity are located at Myklebust and Rønset. In these quarries, there has been production of both millstones and smaller quernstones until around 1300/1400 and 1500/1600 AD respectively. The periods of activity in the quarries which show no traces of millstone production at Sæsol and Otringsneset, ended from the beginning of the Viking period until as late as the thirteenth century (Baug 2002:59-60).

Distribution

The garnet-muscovite-schist from Hyllestad is easily identified, and geological surveys are therefore often not required. Because of the special compound of minerals, it is possible to distinguish stones from these quarries from other quarries of garnet-muscovite-schist in Norway. This makes it possible to identify products from the Hyllestad quarries also in other contexts, and thus trace the distribution and export of the different products.

Quernstones and millstones from Hyllestad, which have been found in other contexts, have been dated independently, according to the dating of the cultural deposits with which and where they were found. In Norway, most of the quernstones from this area have been dated to the Middle Ages. One stone has, however, been registered in a grave from the Viking period (*ibid.*:78).

At Bryggen in Bergen, quernstones and millstones from Hyllestad are dated to the Middle Ages. The oldest stones seem to have been deposited here sometime between 1170/71 and 1198. Both used and unused stones have been found, and can be interpreted as remains from trading activities from the end of the twelfth century. Evidence that Bergen was a staple in the quernstone industry is also to be found in the medieval Urban Code of Bergen from 1276, which states that quernstones should be sold from the western side of Vågen, Stranden, and not from Bryggen (*Bl VI*:8).

The medieval trading place Borgund in Sunnmøre also has remains of quernstones from Hyllestad (Baug 2002:78).

Quernstones of garnet-muscovite-schist have been found in great quantities in the eastern part of Norway, for instance in the medieval towns Tønsberg, Skien and Oslo, but also in Trondheim in Central Norway. Closer investigations of these stones are, however, necessary before the provenance of the stones can be decided for certain (*ibid.*:78-79).

Outside Norway, stones of the garnet-muscovite-schist that most likely come from Hyllestad have so far been documented in the Faeroe Islands, Iceland, Sweden, Denmark, Northern Germany and Poland, dating from the Viking period and the Middle Ages (Eldjárn 1964:541, Arge 1989:119, Schön 1995:106, Carelli and Kresten 1997:123).

The archaeologist Peter Carelli and the geologist Peter Kresten have undertaken an interesting study concerning the distribution of quernstones and millstones in southern Sweden and eastern Denmark, and geological surveys to identify the provenance of quernstones have been undertaken (Elfwendahl and Kresten 1993, Carelli and Kresten 1997). Their examinations showed that all quernstones and millstones of garnet-muscovite-schist were, in fact, produced in Hyllestad (Carelli and Kresten 1997:115-117). In Sweden and Denmark, quernstones from the Viking period have been found in such large numbers that it would indicate an organised trade in this period. The oldest finds are dated from the late tenth century. There seems to have been an increase in the import from the eleventh century, with a peak in the thirteenth century and the following period until about 1500 AD (*ibid.*:120-121).

The studies from Denmark and Sweden show a predominance of four different quernstone regions in the early Middle Ages, where different kinds of stone correspond to four different areas of origin: (1) garnet-muscovite-schist from Hyllestad, (2) Mayen Lava from the Rhineland in Germany, (3) schistose sandstone from Malung in Sweden and (4) gneiss from Lugnås in Sweden (*ibid.*:124-126). The different distribution indicates separate trading regions for the different stones (*ibid.*:126). Quernstones from Hyllestad are mainly located in the eastern parts of medieval Denmark. The Hyllestad stones have been found in early towns and market places, which developed into cities in the Middle Ages. This implies that quernstones were not sent directly from the quarry to the end-user, but via the Viking Age emporia and medieval towns. This theory is also supported by a study by Jonathan Parkhouse (1997). Thus, the distribution of quernstones and millstones from Hyllestad indicates a highly organised activity and the existence of a strong trading network as early as in the Viking period.

The production of stone-crosses

The production of stone-crosses was also an important part of the activity in Hyllestad. Visual analyses of the rock specimens of stone-crosses in West Norway indicate that 23 out of 40 crosses have been produced in Hyllestad (Baug 2002:69). The crosses vary in shape and size, and both Celtic and Anglican crosses were made here, reflecting influences from the British Isles.

The dating of the crosses is, however, somewhat uncertain. Some crosses are probably from the early Middle Ages, whereas the tall monumental crosses most likely date from the transition period between the late Viking period and early Middle Ages (*ibid.*:85-88). Runic inscriptions on some of these crosses have been dated to the late tenth century and the beginning of the eleventh century (*NiYR IV*:223, Johnsen 1968:203).

So far, there have not been any traces of hewing of crosses in the quarries themselves. The only remains from this kind of production in Hyllestad is a small destroyed cross, found among stone waste at the farm Rønset. It was probably damaged during production, and was therefore dumped together with other waste from the quernstone production.

Another interesting stone-cross from Hyllestad, erected near the church in Eivindvik in Gulen, has traces from quernstone hewing in the form of circles on the foot of the cross. This clearly demonstrates that quernstones and crosses were hewn from the same quarries, maybe also by the same stonemasons (Baug 2002:68).

Who controlled the production and distribution?

To what extent was this production and distribution controlled and organised by an elite? Were the people who lived and worked in Hyllestad the same as those who initiated and organised the work?

I will try to illuminate these questions by studying the property rights in Hyllestad. There are no indications that the quarries were common property. No maps, written sources or old traditions in Hyllestad give clues in this direction. In the eighteenth century, the farmers, who themselves had property rights to the farms, also owned the quarries located in the outfields of the farms (Rønneseth 1968:246). Most likely, this was also the case in the Middle Ages and the late Iron Age. The production must therefore have been an important income for the people and institutions which had control, since the quarries offered great possibilities for making a surplus.

According to medieval written sources, all the farms with quarries in Hyllestad were parts of various larger estates in the Middle Ages. Most of the farms were owned by the clergy, divided between the local churches of Øn and Hyllestad, the ecclesiastical institutions Munkeliv monastery in Bergen and the Bishop. Neither before nor after the Reformation were the farms with quarries within their boundaries owned by the peasants themselves (Baug 2002:90). It is therefore likely that these ecclesiastical institutions controlled and organised both the production and the trade of stones in the Middle Ages, while people working and living in Hyllestad were tenants, or semi-free labourers and workers.

Figure 6. Property rights in the production area

Farms with quarries	Property rights in the Middle Ages	Property rights after the Reformation
Rønset (gnr. 71)	Possible noble's estate	Vincent Lunge from 1535
Myklebust (gnr. 79)	Munkeliv Monastery from 1175	Munkeliv monastery
Sæsøl (gnr. 78)	The priest of Hyllestad	The priest of Askvoll
Berge (gnr. 70)	Munkeliv Monastery from 1175	Munkeliv monastery
Indre Gil (gnr. 33)	Munkeliv Monastery from 1175	Stiktgods (previous catholic Bishops' estate, confiscated by the king)
Ytre Gil (gnr. 34)	Munkeliv Monastery from 1175	Munkeliv monastery
Åsmul (gnr. 36)	The priest of Øn owned a part of the farm	The church of Øn
Borsholmen (gnr. 37)	The priest of Øn	The priest of Askvoll
Rutle (gnr. 10)	The priest of Øn, but after 1427 5 <i>månadsmatar</i> and 4 <i>teigar</i> belonged to Munkeliv Monastery	Munkeliv monastery, but 4 <i>teigar</i> belonged to the church of Øn
Sørbø (gnr. 32)	Separated from Ulvik in the 16 th century, where a part was owned by the priest of Øn, one part was Bishop's estate	Stiktgods, formerly Bishop's estate
Indre Hatlem (gnr. 26) Ytre Hatlem (gnr. 27)	1 <i>månadsmatbol</i> was under the priest of Øn	Stiktgods, formerly Bishop's estate
Leirpollen (gnr. 25)	Separated from I. Hatlem in the 16 th century. Bishop's estate	Stiktgods, formerly Bishop's estate
Sørefjorden (gnr. 72)	Munkeliv Monastery after 1427	Munkeliv monastery
Eide (gnr. 35)	Munkeliv Monastery after 1427	Munkeliv monastery
Øn (gnr. 29)	Bishop's estate	Stiktgods, formerly Bishop's estate
Hyllestad (gnr. 77)	The priest of Hyllestad	The priest of Askvoll

Some of these ownerships may date from to the early twelfth century, when the Munkeliv monastery was established. The number of farms in the production area which were owned by an ecclesiastical elite increased in the fifteenth and sixteenth centuries. An important question that has to be answered is who donated or sold these farms to the monastery, priests and the Bishop?

In Hyllestad, the geographical distribution of farms with different ownership indicates a somewhat dispersed ownership structure, where different institutions even owned shares in the same farm. This split ownership can indicate small transactions, like gifts, sales and so on. It is more likely that the ownership of ecclesiastical institutions should be looked upon as being in connection with one another, as the properties of priests, the Bishop and Munkeliv monastery may stem from a common source.

The Gulating's law as well as the Land's law, given by King Magnus the Lawmender in the late thirteenth century, refer to burial mounds as symbolic expressions of an allodial privilege to ancestral farms, implying that only people with such rights were permitted to demonstrate this through burial mounds. An interesting study by Frode Iversen (1999) in the counties of Sogn og Fjordane and Hordaland supports this, and shows a strong connection between the distribution of burial mounds from the late Iron Age and farms owned by the farmers in the Middle Ages and early Modern Period. His analyses of the spatial distribution of graves from the late Iron Age and property rights in the Middle Ages and early Modern period indicate that the burial mounds should be seen in connection with the property rights, and that the nucleus of an old estate often was surrounded by farms without burial mounds, indicating a subordinate status. An analysis of burials and property rights can in this way indicate the extent of estates that probably originate from the late Iron Age. By using this method in the production area in Hyllestad, I have also attempted to trace patterns of the ownership structure that may go back to the late Iron Age.

In Hyllestad, there are only burial mounds from the late Iron Age on five out of 104 farms. This means that not more than about 5 % of the farms contain such burials, and only two farms in the production area have burial mounds dated to the late Iron Age. These are the farms Øn and Søre fjoorden.

On the Øn farm, on the northern side of the Åfjord, there are two burial mounds from the late Iron Age and a church built in the Middle Ages. The surrounding farms are without any marked graves. It is therefore likely that the contours of an estate from the Viking period can be recognised. Øn was the second largest farm in Hyllestad in the early Modern period, and must have been an important farm both in the Viking period and in the Middle Ages. In the early Middle Ages, it was common that local chieftains or rich farmers played an active role in the building of churches (G 12, Ingvaldsen 1996, Buckholm 1998), and this could also be the case with the church at Øn.

On the eastern side of the Åfjord, farm ownership might have had a different character. More farms with burial mounds are registered here, three of them from

the late Iron Age (Fett 1954:9, Dommasnes 1976:182). A church was built at the farm Hyllestad in the Middle Ages, and also here a local chieftain or a farmer may have been the builder. There are no burial mounds on this farm, but three of the neighbouring farms contain such graves, dated to the late Iron Age (Baug 2002:100). The graves may indicate a more dispersed ownership structure in this area, probably with smaller estates or farms where the farmers themselves had the property rights.

To support this view, it could also be worth mentioning the farmer Orm in Folkestad. According to medieval written sources, one of the farms in this area was owned by him, and he also owned land further north-west of the Åfjord. The size of his properties indicates that he was not an ordinary peasant (*ibid.*:100).

The results of this analysis indicate that different estates were established as early as in the late Iron Age, and that the owners probably controlled the production and distribution of products from Hyllestad.

The organisation of production and exchange

The distribution of products from Hyllestad shows that the quarries were an important point of production for large parts of Scandinavia in the Viking period and the Middle Ages. Tremendous resources have been put into both production and export of these products. The activity seems to be an integrated part of larger economic systems. These systems had most likely a different character before and after the development of towns, and the changes in society clearly affected the organisation of the production and exchange of products from the Hyllestad-quarries. The activity started in the late Iron Age in a pre-state and non-urban society, and the quernstones were probably exported directly from the production area to early urban settlements and towns in Southern Scandinavia. The activity continued into the Middle Ages, when trade and commerce were organised through towns and cities, such as Bergen.

The distribution of the crosses probably had another character, and it was additionally undertaken during a much more limited period than the quernstones. This was most likely a production on demand, while the production of quernstones and millstones was mass production.

Both the character of the production and the scale of the distribution indicate an intense and well-organised activity. The scale of the production of quernstones, millstones and crosses shows a specialised production where the purpose was exchange and trade, and the distribution of the different products indicates the existence of a strong trading network as early as the Viking period. We should therefore also search for a powerful organisation behind the activity, as the production in Hyllestad demanded a developed organisation and a wide network for distribution on a large scale. I would argue that it was the political elite that profited from the activity, and, most likely, it was also this group that initiated and organised the intensive exploitation of the resources.

Summary

Hyllestad constitutes one of the largest production areas for quernstones in Norway. Archaeological investigations in some of the quarries indicate that the production goes back to the end of the Merovingian period, with a peak in the high Middle Ages.

The products from Hyllestad were widely distributed, from the Baltic in the south-east to Iceland in the north-west. In the Viking period, most of the quernstones were exported to early towns and market places in Southern Scandinavia, and the activity continued into the Middle Ages, where the distribution was organised through towns and cities.

Both the production and distribution indicate a highly organised activity, with the establishment of a strong trading network as early as the Viking period. The activity was most likely controlled by a social, economic and political elite. In the late Iron Age, local chieftains might have had control of the production and exchange, whilst different ecclesiastical institutions were in charge of the activity in the Middle Ages. This also means that the people who worked and lived in Hyllestad were not those who initiated and organised the work in the quarries.

References

- Arge, Símun V. 1989: Om landnamet på Færøerne. *Hikuin* 15. pp. 103-128. Højbjerg
- Baug, Irene 2002: *Kvernsteinsbrota i Hyllestad. Arkeologiske punktundersøkingar i steinbrotsområdet i Hyllestad i Sogn og Fjordane. Bergverksmuseet Skrift nr. 22.* Kongsberg
- Bl = Magnus Lagabøters bylov, translated by K. Robberstad, 1923. Kristiania
- Buckholm, Mona Beate 1998: *Nedlagte kirker og kirkesteder fra middelalderen i Hordaland og Sogn og Fjordane. Hvilke kirkesteder ble nedlagt, når og hvorfor? Arkeologiske avhandlinger og rapporter fra Universitetet i Bergen. Bind I.* Bergen
- Carelli, Peter and Peter Kresten 1997: Give us today our Daily Bread. A Study of Late Medieval Quernstones in South Scandinavia. *Acta Archaeologica* vol. 68. pp. 109-137. København
- Dommasnes, Liv Helga 1976: *Yngre jernalder i Sogn – forsøk på social rekonstruksjon.* Unpublished master degree. University of Bergen
- Eldjárn, Kristján 1964: Kvarn. Island. *KLNM Bind IX.* pp. 540-541. Oslo
- Elfvendahl, Magnus and Peter Kresten 1993: Geoarkeologi inom kvarteret Bryggaren. Arkeologiska artefakter av sten från det medeltida Uppsala. *Riksantikvarieämbetet och statens historiska museer. Rapport UV 1993:5.* Uppsala
- Fett, Per 1954: *Førhistoriske minne i Sogn. Solund prestegjeld og Hyllestad prestegjeld.* Bergen
- G = Gulatingslovi. *Umsett frå gamalnorsk av Knut Robberstad.* Nørrøne bokverk 33. Oslo 1937
- Ingvaldsen, Lilli M. 1996: *Kirkene i Søndre Sunnhordaland i tidlig og høy middelalder – Hvor ble kirkene bygget, hvorfor ble de bygget her og av hvem?* Unpublished master degree in archaeology. University of Bergen
- Iversen, Frode 1999: *Var middelalderens lendmannsgårder kjerner i eldre godssamlinger? En analyse av romlig organisering av graver og eiendomsstruktur i Hordaland og Sogn og Fjordane. Arkeologiske avhandlinger og rapporter fra Universitetet i Bergen. Bind 4.* Bergen
- Johnsen, Ingrid Sannes 1968: *Stutruner i vikingtidens innskrifter.* Oslo
- NiYr IV = *Norges innskrifter med de yngre runer. Bind IV.* Olsen, Magnus and Aslak Liestøl 1957. Oslo
- Parkhouse, Jonathan 1997: The Distribution and Exchange of Mayen Lava Quernstones in Early Medieval Northwestern Europe. *Exchange and Trade in Medieval Europe. Papers of the "Medieval Europe Brugge 1997" Conference. Volume 3.* Guy De Boe & Frans Verhaeghe (eds.). pp. 97-106. Zellik

- Rønneseth, Ottar 1968: Das Zentrum der ältesten Mülhsteinsindustrie in Norwegen. *Studien zur europäischen Vor- und Frühgeschichte*. M. Claus, W. Haarnagel & K. Raddatz (eds.). pp. 241-252. Neunmünster
- Schön, Volkmar 1995: *Die Mülhsteine von Haithabu und Schleswig. Ein Betrag zur Entwicklungsgeschichte des mittelalterlichen Mülhlenwesens in Nordwesteuropa*. Neunmünster