

# Norwegian millstone quarries in the face of European competition and cooperation 18th – 19 centuries

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**Abstract:** Although geographically outside the heart of Europe, Norwegian millstone production was far from isolated from the rest of the continent. This article is based on research undertaken in French historical archives, a series of 18th- and 19th-century written sources, fieldwork, and the comparison of Norwegian millstone quarries with over hundreds of millstone quarries recorded throughout Europe. The initial results indicate that Norwegian millstone quarries were subject to the same international rules of commerce as their contemporary counterparts. Norway therefore exported their millstones at certain periods of time and were subject to the import of foreign millstones at others.

**Keywords:** Norway, France, millstone quarries, international trade, archives, Modern period, 18th-19th centuries

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## Introduction

It is becoming more and more apparent that the larger millstone production districts throughout Europe ranging in size from several hectares to several kilometres traded their millstones hundreds of kilometres away. The most renowned even exported their products internationally. This was the case of querns from Hyllestad during the Viking period evidenced by archaeological research and, to a lesser extent, Salten and other sites along the western coast (Baug, 2006; Baug, 2011; Grenne, 2014) . But what was their situation in Modern times and the 18th century in particular? Did these sites continue to massively export their production? A means of answering this question is to sift through old documents that offer important data as to of millstone origin that turn up at their



Fig. 1: The Archives Nationales in Paris that houses old written documents offering information as to international millstone trade Photo A. Belmont.

destination rather than at their source. These documents consist of sale contracts and receipts, freight invoices, commercial agreements between producers and retailers, merchant stock inventories, commercial litigations, legal proceedings, customs and toll accounts, port and commercial statistics and mill inventories.

It is therefore often necessary to gain in-depth knowledge of millstone workings and trade to move away from the quarries themselves and cross the borders of municipalities, counties, territories and even countries.

This type of historical and archaeological research approach was adopted during the partnership established in 2009 between the University of Grenoble in France and the Norwegian Geological Survey (NGU-Norges Geologiske Undersøkelse) with its base in Trondheim.

The historical line adopted in this analysis thus focuses on French archives and written sources from the 17th to the 19th centuries that contain references to Norwegian millstone quarries and millstones.

The archaeological approach, in turn, consisted of visiting the main Norwegian quarry sites (Hyllestad, Vågå, Selbu, Brønnøy, Saltdal) and analysing them in the light of results obtained from the dozen millstone quarry excavations carried out in France by the University of Grenoble, as well as by observations collected about millstone quarries throughout Europe in the Atlas of the website "meulieres.eu" designed by the Laboratoire de Recherche Historique Rhone-Alpes (LARHRA, CNRS 5190).

This approach was successful as the new data throws light on millstone export and import as well as similarities and the differences from one extraction site to another. These analyses have helped place Norwegian millstone quarries in an international context and throw light on the human adventure of millstone making along the northern limits of Europe.

## French written sources and historical archives

France, far from Norway, is not, on the surface, the most likely place to study the history of the Norwegian millstone quarries. Copenhagen and Stockholm would, in fact, appear to be better settings to collect this type of information due to their long domination over Norway. Yet France offers three advantages:

The first is that it already possessed a world-wide reputation for the quality of its siliceous millstones (Buhrstones) quarried in the Paris Basin and widely circulating throughout Europe and beyond. This meant that French savants were aware of the little-known Norwegian international millstone trade since the middle of the 18th century and could therefore appreciate its value (Guettard 1773; Faujas de Saint-Fond 1802; Mongez 1818).

The second advantage is political. From the 17th to the 19th centuries, France possessed a vast colonial

empire stretching from North America to Asia with a wide network of ambassadors and consuls. And Norway formed part of the network. Louis XIV opened a first consulate in Bergen around 1710 and the Bergen consul was later assisted by vice-consuls established at Trondheim and Kristiania (Oslo). These officials were obliged to submit yearly reports to Paris not only outlining the political situation, but describing aspects of the Norwegian economy, industrial production and trade. In times of war, the officials were also required to spy on enemy ships and draw up inventories of those captured by the French fleet or by corsairs.

The third reason France is a pivotal place to study Norwegian millstones is due to the École Nationale des Mines (National Engineering Mining School) founded in 1783 and still in existence today. This institution, one of the world's first centres of higher education specifically dedicated to geology and mining techniques, required its students to carry out field trips in France or in a foreign country. This field work by the students led to the publication of a number of travel journals and reports equivalent to dissertations or theses. At least 31 of its students in the 19th century chose Norway as a destination, contributing a vast amount of data on Norwegian geology and mines.

Encouraged by the potential of these French sources, the author of this paper undertook searches through the numerous handwritten manuscripts, records and other printed material preserved in different institutions in Paris such as the Archives Nationales (abbreviated forthwith as AN) (Fig. 1), the Foreign Ministry Archives (AMAE), the French National Library and the École Nationale des Mines.

This study also includes texts and articles published from the 17th to the 19th centuries available on the internet (Google Books: <http://books.google.fr>) and Gallica (<http://gallica.bnf.fr>). This last website comprises more than two million records from the French National Library. A total of 70 different old written sources were thus consulted for this paper.

## International millstone trade

### Norwegian exports

Among their diverse obligations, the French consuls and vice-consuls in Norway had to submit yearly reports on trade to and from the main ports. Thus, in 1747, the consul of King Louis XV reported on 30 French ships anchored in Bergen. It is noteworthy that there is no evidence during this period of the transport of millstones (AN, AE/BI/207). Three decades later, in June 1778, during the American War of Independence, the consul spied on English ships moored in Bergen and came to the same conclusion. Their cargoes consisted of tons of iron, wood, masts, planks, fish, etc. - but no mention of querns or millstones.

The earlier middle 18th-century documents are very brief. The subsequent records from the 1780s, in turn, began to be accompanied by precise tables based on statistics from the Norwegian customs

office, as well as observations by the diplomats themselves. Thus, in 1782, Consul Frammery drew up a complete inventory of the 600 to 800 ships docked in Bergen. According to this record, no Norwegian millstones were among the exports (AN Marine, B/7/465).

Frammery's successor, Dechezeaulx, drew up similar records for the ports of Bergen, Trondheim and Kristiania (Oslo). In February 1785, he produced a global trade register for the port of Bergen (*Tableau du commerce de toutes les nations dans le port de Bergen en 1784*, AN Marine AE/B/3/418). Six hundred and forty-four ships docked at Bergen's port that year: 3 French, 190 Norwegian based in Bergen, 122 Norwegian from other ports, 147 Danish, 53 English, 34 from Hamburg, 21 Swedish, 2 Russian, 4 from Ostend and 4 from Prussia. Yet none transported millstones. The same can be inferred from the records in Bergen, Trondheim and Kristiania (Oslo) of 1782, 1784, 1785 and 1786.

Hence, if we can trust the 18th-century official French reports, Norway under Danish control did not export millstones in spite of possessing very large millstone workings. Is this exclusion a result of the frequent maritime conflicts in the Atlantic Ocean during the 18th century? Or is it the effect of Danish economic policy seeking to protect its own production (e.g. the Höör quarries of Skåne during the 17th century, and later those of the Island of Bornholm) to the detriment of Norwegian exports? (It must be noted that French consuls in the 18th century consistently complained of Danish economic protectionism.) Did Norway suffer from the same constraints as those imposed on Iceland, another Danish territory? as described by Frederick Metcalfe:

*... owing to Danish oppression, and the interdict against English and other traders - this country had in the last century sunk to the very lowest ebb. The people had forgotten everything... Millstones were no longer known, all the bread being made of meal imported from Denmark. It was about 1770 that by order of the Danish monarch some patterns were reintroduced from Norway, and the people taught to hew millstones for themselves the material for which abounds in the country* (Metcalfe 1861: 150).

Economic protectionism gradually gave way during the 18th century to free exchange, unblocking restraints on international millstone trade. The first mention of Norwegian millstone export is thus recorded by the Frenchman Antoine Boudet in 1772:

*Norwegians are very gifted for crafts and trades although these activities have never flourished in their country. Manufacturers are uncommon and the inhabitants do themselves considerable harm as they do not work their own raw materials. The profits from the export of manufactured goods and raw materials reach three million ECU. These materials are: metals, wood, fish, talcum, millstones and other stones, hides of cows and goats, dog fish, various furs, eiderdown and other feathers, butter, tallow, whale oil, tar, potassium, vitriol, alum, various types of seeds* (Boudet 1772: 457).

Fourteen years later the Englishman Adam Anderson seconded this notion regarding the export

of Norwegian millstones, adding supplemental geographical data:

*In the district of Bergen and Drontheim [Trondheim], they export vast quantities of salted fish in barrels, and also cod, split and dried in their cold air, merely without any salt, called stock-fish; also pickled and dried salmon, much train oil, or whale oil; immense quantities of marble; also touchstone, alabaster, slate, mill stones, agate and jasper* (Anderson 1786, 3: 390).

Norway changed from Danish to Swedish hands in 1814. Its new king, Charles XIV John, pursued a free trade policy by promoting a law in 1825 regulating trade between Sweden and Norway. The law specifically mentioned the trade of millstones between the two states:

*All raw materials and industrial products, of indigenous or foreign origin, can be exported overland from Norway to Sweden as long as their import is authorised in Sweden [these products include] millstones and grindstones* (AN, AE B 3416).

The exports of Norwegian millstones attained such a level as to be cited in 1817 in the writings of the American geographer Nathaniel Dwight:

*What is the commerce of Norway? The exports are fish, lumbers, furs, horses, cattle, fish-oil, butter, copper, hides, marble, millstones, and a few other articles* (Dwight 1817: 16).

After the middle of the 19th century, Norwegian millstones, like their German, French or English counterparts, began to appear in the larger international exhibitions. In a Stockholm exhibition from June to August 1866, Norway was the only Scandinavian country to exhibit millstones. A slightly condescending French engineer noted the following:

*Norway has exposed some baptismal fonts, as well as a column and several small household objects made of sienite. These objects are well made but their shape is of bad taste. Among the group are some millstones which are quite unremarkable* (Mathis 1869: 45).

Did the emerging international reputation of Norwegian millstone workings, reaching as far as North America, signify that millstones from Selbu, Hyllestad and other Nordic quarries were crossing the ocean? No. In fact, only a few left Norwegian ports. In his *Journey through Norway, Lapland and part of Sweden*, Robert Everest specified that 39 millstone pairs were levied an export tax at the port of Bergen in 1820 (Everest 1829: 367). These stones possibly did not come from quarries around Hyllestad but most probably from Selbu. This appears to be confirmed in 1835 by the *Penny Cyclopaedia of the Society for the Diffusion of Useful Knowledge* (Vol. 3-4: 274):

*From the interior of the country, Bergen receives iron-manufactures, glass, tiles, etc.; from the towns in the diocese of Trondhjem, some copper, with millstones and grindstones.*

These exports, although modest at the beginning of the 19th century, gradually increased over time. *The Statement of the Amount of Goods exported from Norway for the Seven Years ending 1841* published in 1844 by the British Parliament makes no mention of millstone exports from 1836 to 1840. It does, however, cite 96 pairs for 1841 (Vol. 47: 106).



Is this surge due to the efforts of businessman Frederik Birch of Selbu? Selbu's vast millstone production in the Trøndelag area was in fact entering the industrial era. Between 1846 and 1850, more than 250 workmen produced 600 millstones per year that were traded to Denmark, Sweden, Finland and Russia (Grenne 2008: 54). The 96 pairs exported in 1841, however, is a modest number compared to the thousands sold abroad yearly by the workings at Mayen (Germany), Derbyshire (England) and La Ferté-sous-Jouarre (France). The American periodical *The Mining Magazine* describes Norwegian quarries as follows:

*There are ... some works for the extraction of steatite, mill-stones, and grindstones; but their production is all consumed in the country, and is very inconsiderable* (Tenney 1859: 589).

Norwegian millstone quarries have yielded industrial landscapes of a beauty and scale at a European scale. Moreover, the quarry district of Hyllestad, active since Viking times, produced numerous rotary querns that found their way to Iceland, Denmark, northern Germany, Ireland and Great Britain. Yet this district in the middle of the 19th century was in decline, while products of the growing district of Selbu still struggled to travel beyond the horizon of the Norwegian fjords.

Yet, to be prudent, official statistics and customs registers, the base of information for most 19th-century authors, could easily have been unaware of, or not have recorded, the trade of large numbers of millstones. In France, for example, the 6,000 millstones exported annually from the La Ferté-sous-Jouarre were never recorded in customs registers. The heavy French stones were, in fact, considered ballast for ships and thus not levied tax. This is ironic as each, in fact, was worth the price of a house. It is not until the 1830s that the French began a millstone tax project (Dufrenoy 1834).

## Norwegian millstone imports

In 1840, the Englishman Robert Gordon Latham states the following:

*The Norwegian miller grinds his corn between his own mill-stones. There is no necessity for importing whet-stones* (Latham 1840: 289).

Yet the writer was mistaken. An important contribution from French archives is that they

reveal not only the existence of foreign millstone imports into Norway, but that they took place on a large-scale. The detailed report by the French consul of the cargoes of 634 English, Scottish and Irish ships transiting Bergen in 1784 records that:

*... they only carry coal, grindstones and millstones, several large textiles and socks of wool of little value, cash in gold and silver.*

A year later (1785), Dechezeaulx also recorded the arrival in Bergen of millstones and whetstones from Britain (AN, AE/B/3/418) (Fig. 2). Similar reports drawn up for the other Norwegian ports, including Trondheim, make no mention of these products. Barring error, records until then made no mention of millstone imports. Moreover, Norway was not the only Scandinavian country resorting to foreign millstones. Sweden in 1849, in spite of its own productions from Lugnås (Västra Götalands län), Höör (Skåne län) and Malung (Dalarnas län), imported *qvarnsten* at a cost of 156 riksdaler from London, Copenhagen and Amsterdam (AN, AE/B/3/417).

What was the scale of millstone imports to Norway? And where did they originate? The consular reports, unfortunately, do not answer the first question and are vague as to the second. They only cite sources in Ireland, Scotland and England. Yet other records fill the gaps. During the wars involving France, part of the consul's mission was to assist the French Royal fleet and its allies. When a French corsair anchored at a Norwegian port with a captured ship – Denmark and Norway were either neutral or allies of France in the 18th century and during the Napoleonic war – it was boarded by the consul who drew up an inventory of the cargo so as to divide it equally between the corsair's captain and the King of France. The Norwegian coastline provided excellent moorage permitting the French to carry out attacks on British ships in the North Sea and North Atlantic. Therefore, consular archives from the 18th and beginning of the 19th century retain many listings of cargo content including at times millstones.

For example, on 14 Messidor of the third year of the French Republic (July 2, 1795), the corvette *La Suffisante* captured the British *Peguy* (probably corresponding to the *Peggy* in the Lloyd's Register of 1795) five miles off the Norwegian coast and towed it into the port of Kristiansand (AMAE, consular

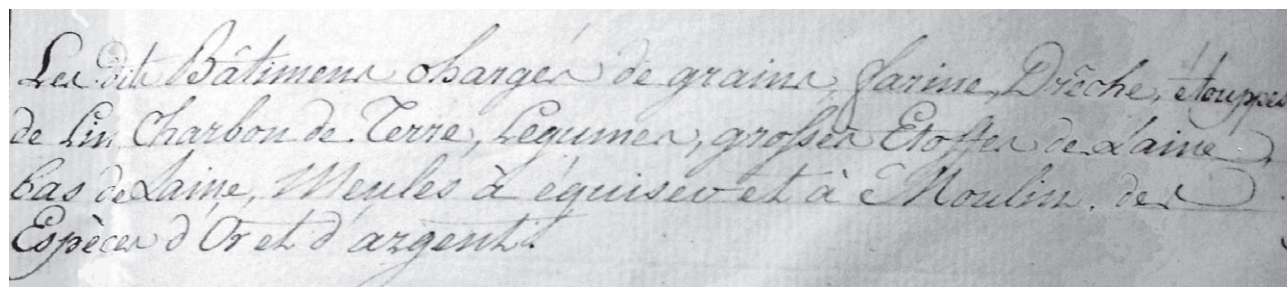


Fig. 2: Manuscript by the French consul recording the British "Meules à éguiser et à Moulin" (whetstones and millstones) imported into Bergen (1784). Collection of the French Archives Nationales. Photo A. Belmont.

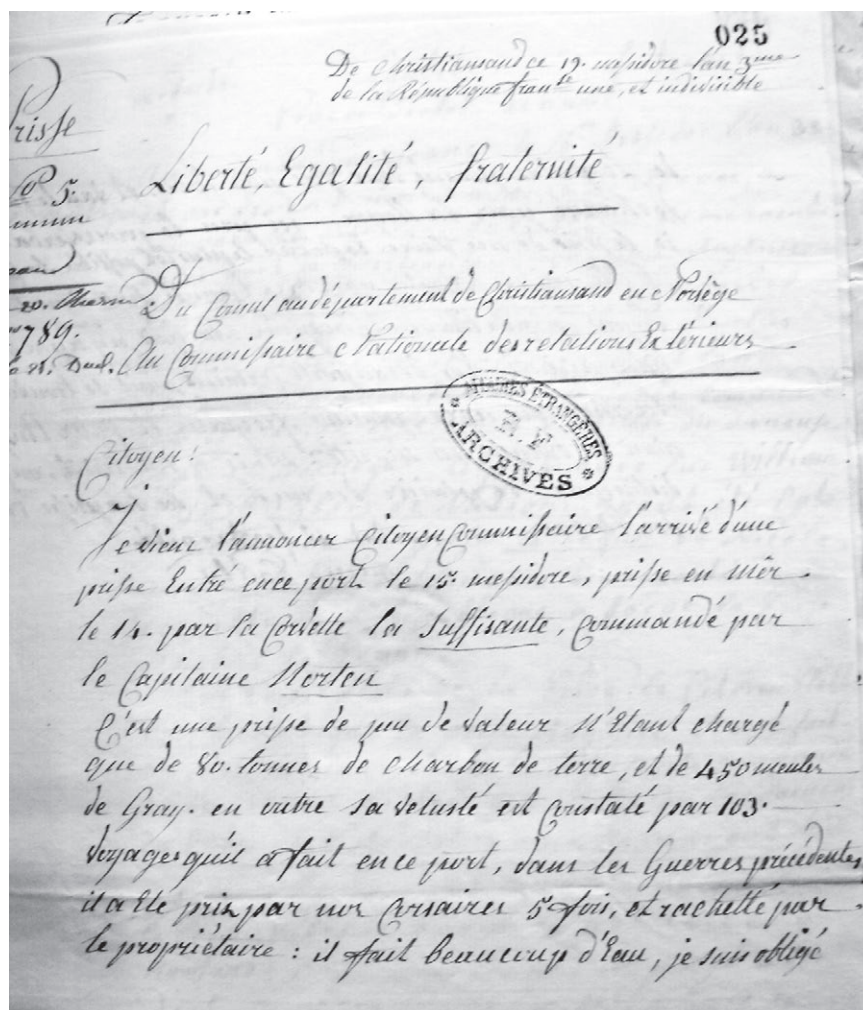


Fig. 3: The cargo of 450 “meules” (millstones) imported from England on the Peguy (1795) (line 5 from the bottom). Collection of the Archives of the Ministry of Foreign Affairs. Photo A. Belmont.

trade correspondence, Christiansand, t.1, 1795-1802: 25-26) (Fig. 3). The *Peguy*'s original destination, after sailing from Newcastle-upon-Tyne (an English port 50 km south of the Scottish border), was Ålborg in Denmark.

The cargo comprised of “80 tonnes de charbon et 450 meules de grès” (“80 tons of coal and 450 sandstone millstones”). In French, the word “meule”, when alone, denotes millstones to grind grains. This term contrasts with other types of *meules* associated with other terms that specify their nature: sharpening stones, whetstones, grindstones. Sold on the docks at Kristiansand, the 450 millstones on this ship would have been enough at that time to equip a large part of the mills in southern and south-western Norway.

This, in fact, was not the *Peguy*'s first trip to Norway, as the consul recorded that it had already docked 103 times at Kristiansand. French diplomatic documents, concerning either this capture by corsairs or the registers from 1784 and 1785, therefore serve as proof that Norway in the 18th century was being supplied with millstones from the British Isles.

Millstones also arrived in Norway from Germany, notably from the Crawinkel and Frankenhain quarries in the Thuringen region. Carl Günther Ludovici and Johann Christian Schedel record in the *Neu eröffnete Academie der Kaufleute, oder Encyclopädisches* (1799: 1087) the export to Norway of Crawinkel products:

*The Crawinkel stones are thus named because of the quarries which are not far from the woodland village of Crawinkel in the Gotha region. Everyone, with the exception of the English, knows them. They are the best and for this reason very sought after abroad. They are even sent to regions far away, such as Norway.*

The vast German quarries at Jonsdorf, in Saxony, and at Barsinghausen near Hanover, could also possibly have provided a great number of millstones, as indicated by oral information from local guides.

Yet no foreign millstone has, to date, been discovered during an archaeological excavation in Norway. It is true that it is not easy to identify foreign millstones if they are highly worn, broken or reused in walls or paving. Finding such objects





Fig. 4: Sample of the “porphyry” rock from Crawinkel (Germany). Photo A. Belmont.

when they are not supposed to exist makes the task even more difficult. As an analogy, in France, water-driven millstones, supposedly only introduced in the Middle Ages, only began to be identified by archaeologists in the late 20th century. Today in fact there is ample evidence in the form of exogenous millstones and milling installations themselves of their wide distribution in Roman times.

What type of millstones did Norwegian millers import in the 18th century? To answer this question, we surveyed potential German and British quarries. Crawinkel is a small town in north-east Germany that in the 18th century belonged to the Saxe-Cobourg and Gotha Duchy. Crawinkel, in fact, had no quarry itself but served as the centre of trade for dynasties of millstone makers based in the villages on the northern side of the Thuringian Mountains where cylinder extraction was spread over several kilometres.

The oldest records of the Crawinkel production date as far back as 1500. Yet it is in 1860 that the area is known to have employed 220 workers yielding between 1,000 and 3,200 whole and segmented millstones per year (Leffler 2001). Some of the quarries were in the village of Frankenhain beside the Lütische Valley dam. These workings take on the form of large, easily identifiable pits (N 50°44'13.3; E 10°46'17.9) accompanied by hundreds

of abandoned and broken millstones. The stones are relatively small, 60 to 73 cm in diameter and 15 to 27 cm thick, hewn from a grey to pink, porous rhyolite. This extremely hard rock, rich in silica, is referred to by certain writers as Crawinkel “porphyry” (Fig. 4).

Written texts, unfortunately, do not offer details as to the sources of the British millstones. They only note that those transiting Bergen in 1784 and 1785 came from Ireland, Scotland or England (Fig. 5) and that the sandstone millstones among the cargo of the *Peguy* (1795) sold in Kristiansand were loaded at Newcastle-upon-Tyne.

Gordon Tucker, a recognised specialist of the history of British millstone quarries, dedicated a page of one of his articles to the Newcastle workings (Tucker 1987: 185). He states that the history of these quarries is difficult to reconstruct because the written records of the whetstone workings overshadow those of the millstones.

Yet the yellow Newcastle sandstone whetstones were highly reputed from the beginning of the 16th century and well-suited for grain milling. According to Tucker, it was only in the 19th century that specific grain millstone production appeared at this site. One such company, founded in 1784 and led by Richard Kell, exported its stones as far as Canada and the north of the United States.





Fig. 5: Location of the potential sources (Kaim Hill, Scotland and Derbyshire, England) of British millstones arriving in Norway.

Recently, evidence of a large millstone extraction site has been identified in the Newcastle region (Nolan 2000) at Bearl in the village of Bywell (N 54°58'54; W 1°55'07.26). Here, in 1525-1526, a certain Thomas Baytes

*... took of the lord a quarry of milnestones [sic] within the lordship, for 24 years from February 2 ... the said Thomas also to find millstones for the lord's mills at Biwell and Ridlee when necessary* (Hinde 1857: 134).

A second site in the area of Newcastle is described by Lindley (1833: 1) as follows:

*Wideopen, near Gisforth, is about five miles north of Newcastle-upon-Tyne. The bed in which this quarry is worked, is considered one of coal formation; and has its name of 'Grindstone Bed' from being extensively quarried for millstones and grindstones.*

Finally, according to the Durham University library archives (DCD/K/LP7/28, September 13, 1826), there is a third quarry around Newcastle opened in 1826 at Muggleswick, near Conset, several kilometres south-west of Newcastle. Field work has yet to be carried out, but in all probability the yellow Newcastle sandstone extractions could well correspond to those sold in Kristiansand in 1795.

Two other British sites could also have supplied millstones to Norway. These are Kaim Hill in Scotland

and the quarry basin of the Derbyshire Peak District studied by Gordon Tucker and Jill Polack. These workings are known to have exported millstones to Holland from the 17th century, and to Europe and America in the 18th century. Norway, according to Tucker, also received 84 English millstones in 1867 at a value of £305 (Tucker 1984; 1985; 1987; Polack 1987).

Kaim Hill was the most important millstone production in Scotland. This site, not far from Glasgow, is on the western coast of the Lowlands at the town of West Kilbride (N 55°44'08.6; W 4°50'05.7) opposite the Clyde firth and the Irish Sea. A quarry face of three superimposed rows of extractions stretches a length of 300 m and a width of 100 m across the slopes of a small mountain. The site exported at least 5,000 to 10,000 millstones during the early years of the 19th century to Ireland and America. Yet, even if this grey-white conglomerate, with a high proportion of pebbles and quartz fragments (Fig. 6), was of a quality that might have interested Norwegian millers, it did not form part of the cargo of the *Peguy* in 1795.

On the other hand, the stone from the Peak District of Derbyshire in the Pennine Mountains of central England corresponds perfectly to that of the cargo of the *Peguy*. This sandstone consists of fine homogeneous ochre, red or grey grains combined with quartz clasts ranging from 1/2 mm to 10 mm in diameter in a silica matrix (Fig. 7). The Peak District workings are recorded as early as the 13th century and became known worldwide as their products, according to Tucker:

*... were exported to other countries all over the world by the nineteenth century ... [and were] ... the most famous of all the millstone-making areas in Britain, and the quantity made probably exceeded that from all the other millstone-making areas put together.*

Tucker goes on to specify that over 50 other quarries, and working areas have been identified as sources of millstones (Tucker 1987: 173). The sites we visited at Stanage and Millstone Edge at Hathersage (N 53°19'08.1; W 1°37'44.2), Gardom Edge at Baslow (N 53°15'16.4; W 1°35'44.8) and Kinder Scout at Hayfield (N 53°23'01.81; W 1°53'33.59) extend over vast areas. In the case of Hathersage, quarry faces reaching 40 m in height and stretching over several kilometres exemplify the industrial scale and proportion of this site's capacity to export a huge number of millstones (Fig. 8).

Thus millstone exports to Norway were numerous during the 18th and 19th century from quarries in Germany, England, and probably also from the Swedish workings of Lugnås, Malung and Höör, very close to the Norwegian border. These products, in direct competition with Norwegian quarries, obviously had an impact on the Norwegian production. It has been recognised, from the sites studied in France, England and Germany, to what degree the major producers of La Ferté-sous-Jouarre, Derbyshire and Mayen battled commercially, from the Middle Ages onwards, to acquire and retain the goodwill of millers



Fig. 6: Conglomerate sample from Kaim Hill (Scotland). Photo A. Belmont.

beyond their national borders (Belmont 2006).

Are the imports to Norway therefore a key factor to help understand the long term evolution of the vast quarry workings initiated in the Viking period and pursued in the following centuries?

In the excellent article entitled *From Hyllestad to Selbu: Norwegian millstone quarrying through 1300 years*, Tor Grenne, Tom Heldal, Gurli Meyer and Elizabeth Bloxam offer a chronological table revealing an increase in the importance of the Hyllestad and Salten quarries throughout the 8th to the 10th century and then their decline in the 14th century coinciding with the Great Plague (Grenne *et al.* 2008: 64) (Fig. 9). The Selbu production, in turn emerges three or four centuries later, in the 17th century, and reaches its peak in the 19th century (Grenne *et al.* 2008). But, what occurred during the gaps from the 14th to the 17th and the 19th centuries?

The bubonic plague had, of course, dramatic consequences on the economy and society of the Early Middle Ages (Baug 2006; Heldal 2011), but surely not enough to be felt over several centuries.

The yearly records of the Mont-Saint-Martin quarry in the Dauphiné of the Alps near Grenoble, for example, indicate that the millstone workings only halted four years during the plague, from 1348 to 1351 (Belmont 2006). This French site, at an altitude of 1400 m and difficult to access along the cliff tops, could have easily been abandoned in benefit of other nearby, more accessible, and better quality workings. It must also be noted that Mont-Saint-Martin is in a region where epidemics, war and famine accounted for the loss of 50 to 75% of the population in the 14th and 15th centuries. It would therefore appear more logical to assign the gap between the decline of the Hyllestad production and rise of that of Selbu to the competition of imported millstones.

This is not difficult to fathom. Norway was not a lost island but a European nation, integrated like other countries in a wide trade network. Furthermore, the Hanseatic League probably played a key role in the development of this network during the 14th to the 18th century as Bergen was a well-known



Fig. 7: Sample of a pink sandstone from the Peak District in Derbyshire (England). This district could have supplied millstones to Norway. Photo A. Belmont.





Fig. 8: Example of the face one of the many vast millstone workings at the quarry of Hathersage (England). Photo A. Belmont.

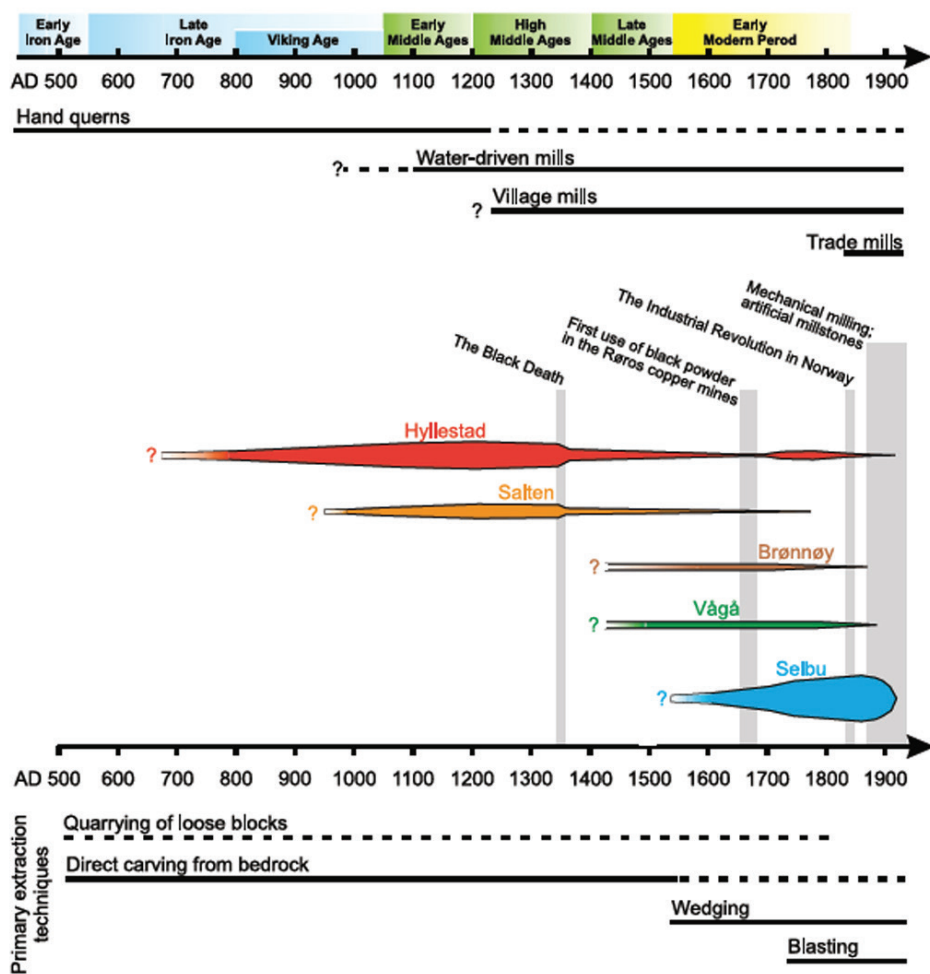


Fig. 9: Chronology of Hyllestad and Selbu, the main Norwegian millstone quarries (adapted from Grenne et al. 2008: 64).

*kontor* (trading post) of this League (Dollinger 1964; Lloyd 2002). The same can be said of Newcastle-upon-Tyne, that exported millstones to Norway.

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