

The distribution of silver specimens from the Kongsberg Silver Mines, Norway, 17th and 18th centuries

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Berg, B.I. & Nordrum, F.S. The distribution of silver specimens from the Kongsberg Silver Mines, Norway, 17th and 18th centuries. In: Winkler Prins, C.F. & Donovan, S.K. (eds.), *VII International Symposium 'Cultural Heritage in Geosciences, Mining and Metallurgy: Libraries - Archives - Museums': "Museums and their collections"*, Leiden (The Netherlands), 19-23 May 2003. *Scripta Geologica Special Issue*, 4: 14-19, 3 figs.; Leiden, August 2004.

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Key words — Silver, specimens sales, collections, history, Norway.

Specimens of native silver from the Kongsberg mines in Norway are world famous and have been distributed through sales and gifts during the whole period of mining from 1623 to 1958. Names of customers, the number of sold specimens and their silver content are documented in accounts which are preserved back to the 1620s. The Danish-Norwegian kings received the largest amounts of silver specimens.

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Introduction

From their opening in 1623, the Kongsberg Silver Mines have been famous for finds of beautiful silver specimens (Berg & Nordrum, 2003). The Kongsberg ore consists mainly of native silver occurring in calcite veins. In cavities in the veins the silver has partly been precipitated as wires and crystals. Such specimens have fascinated miners, visitors and collectors throughout the centuries, and have made Kongsberg a world-famous place among mineral collectors.

Already from the first years of mining in the 1620s, beautiful specimens brought up from the mines were taken aside at the smeltery and later sold to visitors. Specimens were also popular as gifts. The distribution of silver specimens is documented in the account books, which are preserved from the very beginning of mining.

Sales-lists

The sales-lists, preserved as vouchers to the account books, are interesting reading. They usually give the names of the customers, the number and total weight of the specimens, their estimated content of pure silver, and the prices which were calculated directly from the estimated silver content. Statistics have been calculated for most of the 17th and 18th centuries, showing the yearly amounts of pure silver contained in

silver specimens. The yearly average was 9.5 kg of pure silver, less than 0.3% of the total silver production.

A closer look at the names in the sales-lists for some years reveals some of the persons who were visiting Kongsberg and who were interested in such natural rarities. Let us start with some of the most prominent visitors.

Royalty

The first one to receive a rich assortment of silver ores and specimens from the mines was the King of Denmark and Norway, Christian IV, keen to visit his new mines in 1624. He and later kings received the largest amounts of silver specimens. Thousands of specimens were sent to the kings in Copenhagen, who probably used many of them for gifts to other royalties, aristocrats and merchants. In that way specimens were distributed to other countries, but many were also kept in the royal collections and can today be found in the Geological Museum at the University of Copenhagen.

King Frederik III, the successor of Christian IV, founded the royal collections called the "Art Chamber" (Danish: *Kunstkammeret*), which was first recorded in 1651. The same year the king appointed a so-called mining inquisitor responsible for collecting specimens from the mines, appraising their silver contents and sending them to the king. He was dismissed when the king found out that large collections of specimens were sent to the private shareholders. Nevertheless, the king continued to be the dominating customer, even more so after he took over the ownership of the Silver Mines in 1661.

King Frederik's collection of silver specimens at least goes back to the year of his accession to the throne, 1648, when he visited his northern kingdom and the Kongsberg mines. He then received 99 rich silver specimens and also some silver ore with pyrrargyrite.

The year of the royal take-over of the Silver Mines (1661) was an important one in the statistics of silver specimens, with a sale of 70 kg pure silver contained in specimens. Most of this (65 kg) can be identified as deliveries to the King and the Crown Prince. King Frederik III also had an interest in other silver minerals such as pyrrargyrite and argentite. At the Rosenborg Castle in Copenhagen, he employed alchemists who operated a laboratory, possibly dreaming of producing gold from the silver ores of the Norwegian mines.

The following years, the king received a great number of silver and even gold specimens. As an example, in 1665 no less than 1210 specimens were sent to the king. From such an impressive number just for one year, we might suggest that the distribution through the kings has been a major source for silver specimens in present collections not only in Denmark, but probably in many countries. During the nearly 200 years of mining operation under Danish sovereignty, literally thousands of specimens must have made their way from Kongsberg to Copenhagen and probably from there, sooner or later, to many other destinations.

Occasionally, very big silver specimens were sent to the king. Two such big specimens have been portrayed. The first painting made by the Dutch painter Adam van Breen shows a big, but otherwise not very beautiful lump of silver found in the "God's Blessing" ("Segen Gottes") Mine in 1630, shortly after this deposit was discovered (Fig. 1). This lump weighed 409 marks or 95.6 kg. The other big portrayed specimen was found in 1695 and contained 41.5 kg of pure silver (Fig. 2).



Fig. 1. Silver specimen found in the "Segen Gottes" ("God's Blessing") Mine 1630, weighing 409 marks (95.6 kg). Contemporary painting by Adam van Breen in Kongsberg church.



Fig. 2. Silver specimen found in the Juel's Mine 1695, containing 41.5 kg of pure silver. In the background: Kongsberg town and the mining area with different surface buildings such as conical horse whims, dams and aqueducts, water wheels and lines of wooden power transmission rods. (Norwegian Mining Museum.)

A rich collection was sent to the king in 1769, including a spectacular, 25 cm high specimen formed as a big C, the first letter of King Christian VII's name, headed by a royal crown. This is one of the most beautiful and valuable specimens of the Geological Museum in Copenhagen (Fig. 3).

So far our paper has focused on the kings, but the sales-lists reveal many other



Fig. 3. "The big C", wire silver specimen found in the "Gottes Hülfe in der Noth" ("God's Help in Need") Mine 1769, 25 cm high. (Photo: Ole Johnsen, Geological Museum, Copenhagen.)

customers, some of them buying significant numbers of specimens. So far only a few of the lists have been analysed in detail. The best period examined is 14 years in the first two decades of mining, the 1620s and 1630s (Table 1). The customers may be divided into different groups. Most of the names are probably unknown to other than Nordic historians, but the social structure of the customers groups is perhaps of a more general interest. (The numbers of specimens given in Table 1 are not complete, as indicated by the \pm signs, because by many purchases only the silver content is given in the sales-lists.)

Officials and merchants

King Christian IV was the largest customer. The second largest, measured by silver content, was the King's viceroy or governor in Norway, Christoffer Urne. He bought more than 92 specimens containing in total 102.4 kg pure silver. A dominating group of customers were the private shareholders of the Silver Mines, some of them belonging to the leading society of top officials and merchants in Norway.

Mining officials

Persons directly employed in mining were also among the buyers. These have been divided into two groups, the first one consisting of the top officials, the other of their subordinates. In the first group we find the single person buying the greatest registered number of specimens was the treasurer and chief accountant of the Mining Company, Hans Nilsen. He bought more than 278 specimens with a total silver content of 4.7 kg. He was perhaps an eager collector, but it may be imagined that he also might have resold specimens.

It is not surprising to find top officials among the buyers. More surprising is perhaps that some of the subordinate mining officers, who had low salaries, also bought a number of specimens. A couple of them may be regarded as collectors of professional or scientific interest. Among the most eager collectors are two assayers, who analysed silver ore, smelting products and coins. The assayer Hans Hempel was the responsible for the appraisal and sales administration of the silver specimens. He and the smelting director also had educational tasks and they may be viewed as predecessors of the later professors at the mining academies.

Table 1. Some buyers/receivers of Kongsberg silver specimens, 1625-8 and 1630-9.

<i>Name</i>	<i>Profession</i>	<i>Number of specimens</i>	<i>Silver content kg pure Ag</i>
Royals:			
Christian IV	King of Denmark and Norway	22++	174.7
Christian	Crown Prince of Denmark and Norway	0++	6.3
Top officer of the Crown:			
Christoffer Urne	viceroy (governor) of Norway 1629-42	92++	102.4
Shareholders of the Silver Mining Company (and associates of them):			
Jens Bjelke	the Norwegian chancellor	146++	6.6
Nils Toller	merchant and mayor of Christiania (Oslo)	85++	4.0
Johan Garmann	the Mining Company's food provisioner	45+	4.7
Peter Hansen	(Johan Garmann's servant)	20	0.2
Herman Garmann	(Johan Garmann's son, viceroy Urne's clerk)	55	0.7
Ove Gjedde	admiral of the Realm, county overlord	60+	1.3
Dorothea Urne	(Ove Gjedde's wife)	30	0.3
Jens Juel	viceroy until 1629, president of the Mining Co.	6++	2.8
Christen Bang	city councillor of Christiania (Oslo)	6++	1.0
Nils Hansen	presiding judge in Christiania (Oslo)	14++	0.2
Top mining officials:			
Hartvig Huitfeldt	royal mining inspector (Berghauptmann) 1620-4	2	0.2
Adolph Friedrich Grabou	royal mining inspector (Berghauptmann) 1624-6	12	0.2
Johan Friedrich Nortmann	royal mining inspector (Berghauptmann) 1628-31	82	0.7
Johan Diegel	royal mining inspector (Berghauptmann) 1630-2	52++	1.5
Samuel Weiss von Schalen	royal mining commissioner 1627-9	(a few)	0.9
Hans Nilsen	treasurer/accountant of the Mining Co. 1630-	278++	4.7
Nils Ebbesen	treasurer/accountant of the Mining Co. 1630	2++	0.6
Mining professionals:			
Hans Hempel	assayer (Probiierer) 1630- (and teacher 1633-)	49+	1.0
Erik Jäger	assayer at the Royal Mint (Guardein)	67++	0.9
Caspar Helbich	smelting director (Hüttenschreiber) (and teacher)	19	0.1
Lorentz Lossius	accountant (Schichtmeister)	12	0.1
Jacob Daube	mining director's deputy (Geschwornen)	1	<0.1
Jacob Wölner	mining director's deputy (Geschwornen)	5+	0.1
Daniel Lippert	assistant inspector (Einfahrer)	6	0.1
Georg Celius	accountant (Schichtmeister)	21	0.1
Sebastian Span	accountant (Schichtmeister)	10	<0.1
Foreign visitors (not Danish):			
Dr. Christian Smilou	from Rostock (1626)	?	0.1
Thomas Schmack	merchant from Rostock (1633)	2	<0.1
Peder Clausen	merchant from Lübeck (1635)	13	0.3
Herman Backh	from Lübeck (1638)	?	0.5
Peter Eisenberg	from Hall(e) in Saxony (1635 and 1636)	22+	0.2
Christoff Friedrich Herman	from Dresden (1639)	?	0.1
Thomas Hunter	from Edinburgh, Scotland (1638)	18	0.2
NN	a Frenchman who visited the mines (1636)	?	<0.1
Peiter vann Geneie	from Geneva? (1632)	27	0.4
Anthoni v. Delden	Delden, small town in the Netherlands (1631)	?	0.1

+ : plus some not specified; ++ : plus probably many not specified by numbers.

Visitors

Lastly we have a group of more or less casual, foreign visitors, predecessors of modern tourists. Germans dominate, but some persons of other origins are also noted; Scotland, France and possibly one person from Switzerland, and one from The Netherlands (van Delden).

Conclusions

An examination of more sales-lists would surely reveal interesting names. The few lists examined so far do not give a firm basis for calculation of the total number of sold specimens, but figures of around 200 for some normal years indicate that it is not unlikely that the total number of sold specimens exceeded 30,000 and possibly reached 50,000 specimens during the great period of mining until 1805. This fascinating business continued after the Silver Mines reopened in 1816 until they finally closed down in 1958.

Reference and other sources

Accounts of the Kongsberg Silver Mines, in the National Archives (Riksarkivet), Oslo (archives of 'Rentekammeret' (Finance Ministry) and Kongsberg Silver Mines).

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