

A scroll of aged parchment with a title and authors. The parchment is light brown with a textured, slightly mottled appearance. The edges are slightly irregular, and the scroll is shown partially unrolled, with the top and bottom edges showing the rolled-up part of the parchment.

History of paper

Ben, Silas, Kiia and Uma

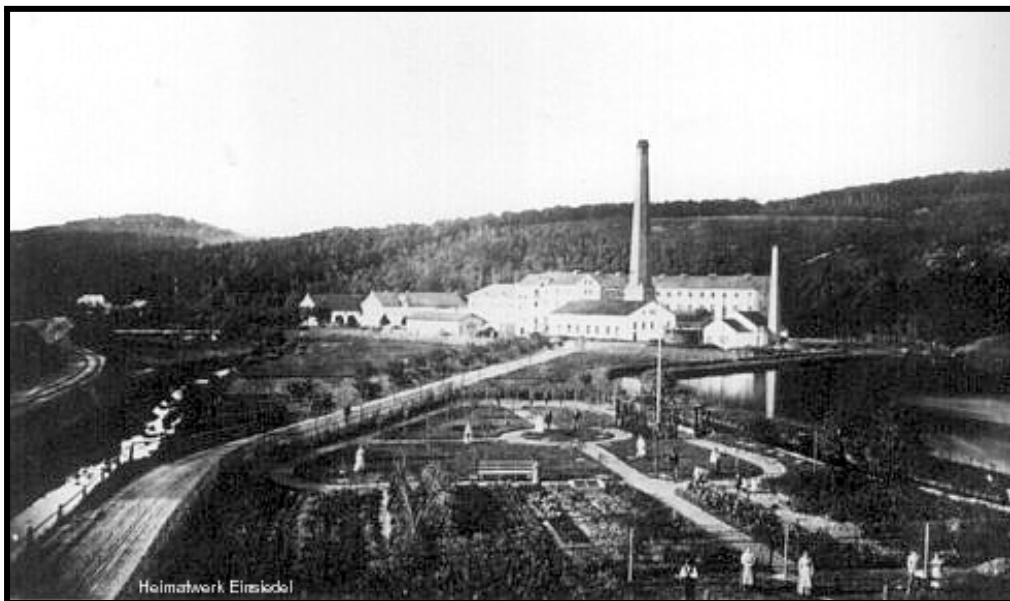
History of paper

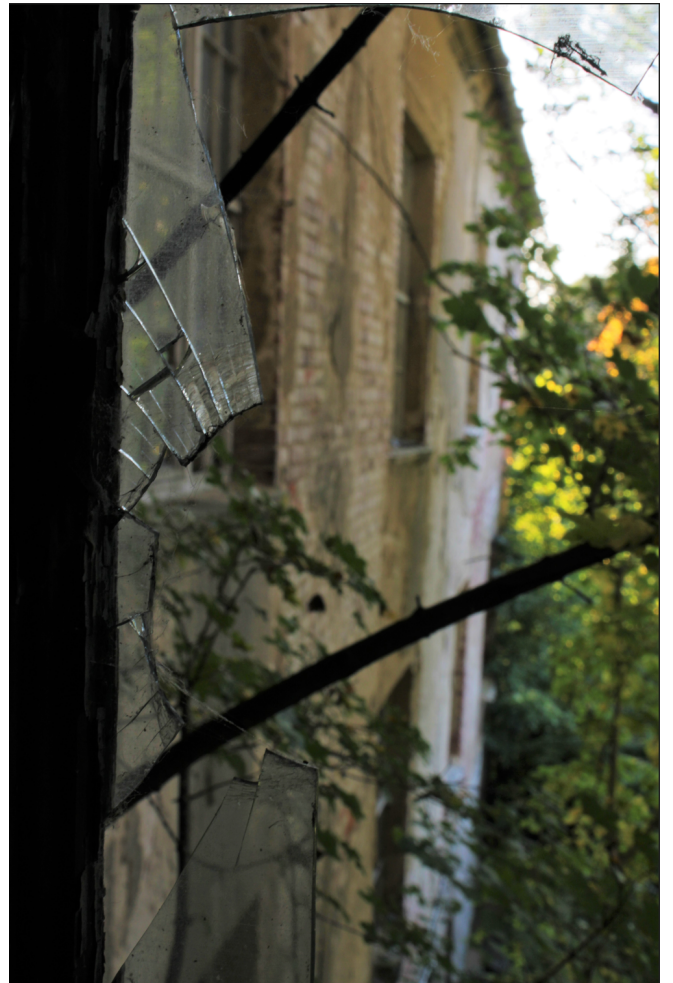
- 6th century AD thanks to the Buddhist monk Dam Jing to Japan
- 11th century in Europe, considered inferior material
- History of paper owes a great deal to the Italian papermakers of Fabriano who started making paper using linen and hemp in the 12th century
- They introduced the sizing of the leaves with animal gelatin, an unpopular addition to insects
- From 14th century paper making began to spread to other European countries
- Industrial paper production began in the 19th century with the development of high-volume newspapers
- In 1797, Louis-Nicolas Robert developed the first four paper machine capable of producing sheets with a length of 60 cm
- When paper making supplies ran out rags needed to replace wood derived pulp
- England paper production increased from 96,000 tons in 1861 to 648,000 tons in 1900



Einsiedel paper factory

- In 1821/22, Christian Gottlob Eismann set up a cotton spinning mill
- May 19, 1871 six shareholders founded the paper factory
- 1905 250 workers employed
- In order to have a supply of water power, a large pond was built
- 1900 Annual production approx. 3000 tons of paper
- 1902 great fire
- 1910/11 complete reconstruction of the machinery
- 1930 Production stopped due to the world economic crisis
- Renovated in 2005 and turned into a commercial center







Interviews with professionals in Finland:

Interview with Mika Sanio:

How has the paper making process changed over time?

Before industrialization the whole process was completed with the use of human workers, so the job required a lot of physical strength. Nowadays because of robots the paper making process can be completed with almost no human-workers at all.

What was produced and what is being produced?

The chemical industry started in the middle of the 19th century with the sawmill industry, and cellulose began to be made at the beginning of the 20th century and paper in 1955 (Stora Enso) and liners in 1971 (Metsä Group).

At the time, there were two larger sawmills in Kemi, one at Metsä Group in Karihaara and the other at Stora Enso. Metsä Groups sawmill closed in 2009, Stora Enso's is still active. Metsä Group currently manufactures liner/cardboard for the corrugated board industry as well as pulp for various end-use purposes, e.g. liner, paper, tissue paper, baking paper, etc.

What things have made producing (paper) more efficient?

The technology and the processes have developed significantly. All ingredients obtained from wood are used or recycled as efficiently as possible for other uses.

What kind of effects has industry had on Kemi's environment?

Tens of years ago, the effects on the environment and water bodies were to some extent harmful, but today's developed processes and technology have resulted in the fact that under normal circumstances there are no harmful effects. Nowadays there are very strict limit values for all possible emissions (land, air, water bodies), which are monitored, measured and reported continuously.

How have the working methods changed?

The work methods have changed significantly. It used to be very labor-intensive and heavy. After the advancement of technology and the rise in automation rates the work has become mostly control room work. The duties include monitoring, controlling and adjusting the flow of the process through various control systems and, in case of disturbances, addresses the situation as necessary.

How have the rules (security) for jobs changed?

In this day and age, security is always number 1. Accidents at work have decreased significantly and the goal is zero accidents.

For example at the metsä Kemi factories only a few accidents occur in a year that results in absences. 0 accidents are also monitored and stated. That is, if something milder hurts that does not lead to absence. All accidents are dealt with, reported and all possible corrective measures taken to prevent the accident from happening again.

How long has paper been made in Kemi?

The industry in Kemi began with a sawmill industry in the middle of the 19th century. The first cellulose bales were completed at Kemi Oy (now. Forest Group) in 1919. Kraft liner/carton at the factory began to be produced in 1971. Veitsiluoto began paper manufacturing in 1955.

How important is Kemi in the Finnish paper industry (especially before the decision to end the Veitsiluoto factory)?

Kemi as an individual location is of great importance in Finland and will grow significantly more when the new cellulose mill is launched in the summer of 2023. Cellulose production will increase twofold through the new cellulose mill.

How much of what is in Finland is going to foreign exports and how has it changed over the course of history?

Only a few per cent of the kraft liner of the Kemi factories remain domestic. For example, just over a third of the production goes to North America, Europe a large portion + the rest of the world. The vast majority of cellulose goes abroad as well, mainly to Europe.

This ratio has not significantly changed over the past few decades other than increased for North America. The vast majority of Kemi's products go to the world via the port of Ajos on ships. For driving, the products are transported by trucks.

Oulu university, interview with Kari Alenius, main points:

At the beginning of paper production, the price of paper was so great that it was only occupied by the rich/makers. Paper was made from the reed.

Paper influenced everything and in the 19th century paper mass production began.

Calf belly leather was used as money instead of paper.



Interview with Taisto Saari:

Veitsiluoto was founded in 1932 Kemi's last paper machine in Veitsiluoto was shut down on September 29. 2021.

People from all over the Nordic countries moved to Kemi to work. Work safety was poor in the beginning, especially during winter. Due to winter and the bad weather more workers were needed to work and to repair broken machines.

Many large foreign companies ordered various papers, e.g. as packaging material for their own products. Around the 1960s, Veitsiluoto was the biggest newsprint paper producer in the whole of Europe (helped with globalization and the spread of culture).

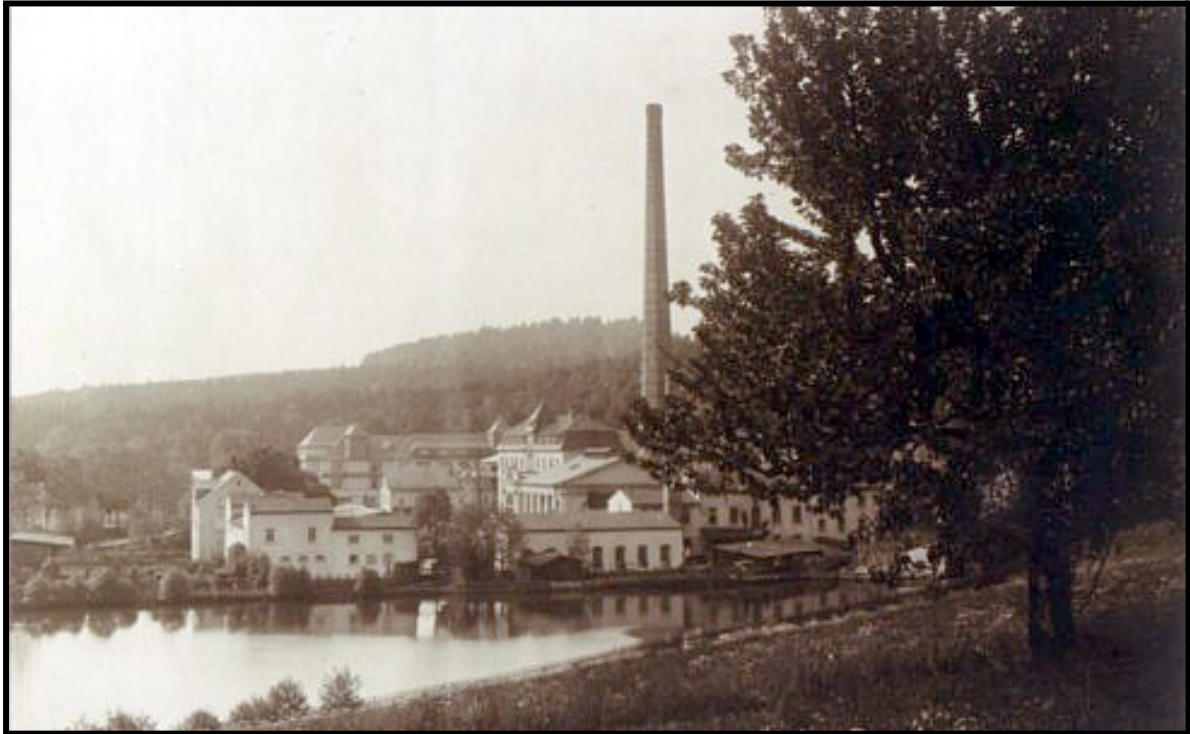
Veitsiluoto discontinued making newsprint mainly due to the popularity of social media and the internet.

Before, the work was much more physical, which is why the employees were often men (the paper industry is a male-dominated industry). With mechanization, it has been possible to reduce the number of employees considerably. Due to the termination of Veitsiluoto, approximately 500-600 people were removed, leaving only around 50 people working at the sawmill.

In the 1950s, PK1 (the paper machine in Kemi) was the largest paper machine in Europe with an annual production capacity of 30,000 tons. When the machine was closed in 2014, its capacity had to be increased to 180,000 tons per year. During the factory's most successful years, approximately 4,000 employees worked in the factory (around 1976).

There was a lot of population living near the factory, who were mostly the workers' families. The workers' families were assisted in various ways, such as daycare, food, etc. In this way, it was also possible to increase the number of people working in the factory.

Einsiedel paper factory



Veitsiluoto paper factory

