

Marcus Lepola, November 2, 2017

Among the larger iron works in Finland the Strömfors Bruk Iron Works and Forge is one of the least known to a larger public. The iron works had a 250 year old history when the production was finally halted in 1950. Today the area with all its buildings remain as a protected heritage site and the mill village is among the most visually attractive in Finland. Strömfors is a mere 1 and half hour drive away from the Finnish capital of Helsinki (Swe. Helsingfors). Strömfors used to be an independent municipality until it was incorporated in to the larger municipality of Lovisa, a neighboring coastal town.



1. Strömfors is a beautiful place to visit in summer.

The iron works was founded as part of a larger strategy by the Swedish crown to increase the production of iron and steel within the kingdom. By the end of the 16<sup>th</sup> century the Swedish rulers had realized that iron production had to be modernized as bar iron became the new standard of trade, replacing the medieval Osmund Iron, which was an wrought iron ball of irregular shape. Expertise and finance from foreign countries was required to achieve the change over, also steelworks at the time worked with water wheels and iron works had to be placed at suitable locations along waterways that powered the wheels and provided means to transport goods



2. Map of Strömfors from 1802. At the time the iron works only had a bar hammer and a forge indicated by nr 2. in the map.

Iron works and forges were also dependent on an ample access of wood and by the 17<sup>th</sup> century, the high demand for coal had resulted in the disappearance of forested lands in the vicinity of many Swedish iron works. These factors prompted the crown to establish new forges in the outskirts of the kingdom and many forges were established in Finland. Some Finnish forges were also able to use local, less rich sources for iron, but for the most part the steel mills in Finland were processing iron ore originating from mines in Sweden.



3. A photograph of blacksmiths working with bar hammers in the Upper Forge at Strömfors in the beginning of the century.

The nobleman Johan Creutz founded a bar iron mill in Petjärvi village in Pyttis parish in 1695. The forge was established in prime location by the Kymmene River rapids, which remained unfrozen during the whole year. Also the site was surrounded by large forested areas. Conflicts between Russia in Sweden resulted in a new border being drawn in the peace treaty of 1743. The border divided the parish of Pyttis in to two halves along the western branch of the Kymmene River. The western part which remained in Swedish possession was called Swedish Pyttis, in Finnish Ruotsinpyhtää, which is the Finnish name for Strömfors.



4. Jacob af Forselles, one of the founders of Strömfors Bruk.

The part of the iron bar mill which remained on the Swedish side of the border was purchased by Anders Nohrström and Jakob Forsell in 1744. The iron bar mill was also renamed Strömfors (Eng. Stream Rapid), which was taken from the surnames of the new owners. In 1817 the Pyttis parish was also the name of the Steel mill. In 1750 the population of Strömfors was about 1 300 and 10% were included in the Strömfors Forge workforce.



5. The product board displays everything that was made by Strömfors Bruk. This display stand won first price at the agricultural fair in Kuopio in 1906.

During this time a forge, a saw and a mill were erected at the site. Virginia af Forselles, the widow of the late Henrik Johan af Forselles, took possession of Strömfors in 1781. She was only 31 at the time but proved to be a strong-minded leader. She added a lot more buildings to the site, such as the landmark building of Strömfors, the high red timbered house which she erected by the river. The af Forselles family remained in possession of Strömfors until 1876. In 1886 Antti Ahlström purchased Strömfors along with adjacent lands. Ahström was mainly focused on developing the sawmill. He did not attempt to modernize the forge and the manufacturing process. The technical development of the forge had been on a stand-still until it finally closed in 1950. The same simple water driven hammers were in use for over 250 years.





6. Demonstration of the water powered bar hammer at the Upper Forge in Strömfors.

### **The Blacksmiths at Strömfors**

The Strömfors iron works mostly produced iron bars and nails. The work was organized in two 12 hour shifts. The work only halted on Saturdays at 18:00 and would resume at the same time on Sunday. Often the workteam was made up by two master blacksmiths and two journeymen. In the bar and nail forge there were up to 4 or 6 blacksmiths.



7. Old masters and young apprentices at work making oak nails in Strömfors, ca 1910.

Among the first blacksmiths to arrive at Strömfors was master hammer smith Hans Fernelius from Västmanland in Sweden in 1745 and a year later master hammer smith Olof Hierpe from Svartå Forge. The occupation of blacksmith was passed down from father to son. The craft was mastered through an arduous and long process in which a young apprentice would gradually advance to the position of a journeyman and beyond. A hammer smith was a title indicating that the blacksmith was skilled in using the water driven hammer. The office of a hammer smith was regulated.

The Hammer Smith Regulations of 1766 (Swe. Hammarsmedsordningen) stipulated that the office should include an elder, a master, a master journeyman and a labourer. After several years working side by side with the master a journeyman was finally given the opportunity to prove his skills to the elder in an official “journeyman test”. After a successful test he could call himself master hammer smith. Ordinary people held the Strömfors blacksmiths in high esteem, perceiving them to be close to nobility. The blacksmiths also had a special bench reserved for them at church. The blacksmiths guild remained a strong, independent and visible group within the social landscape of Strömfors.



8. Senior workers at Strömfors Bruk ca 1920. The first three sitting from the left are blacksmiths.

There are two separate forges at Strömfors, the Lower- and the Upper Forge. The “Upper Forge” was built in 1859. The large facility fitted 10 furnaces, four water-powered nail hammers and two bar hammers. Long oak nails were made at the forge intended for use in at shipwrights or by

the railway. The bar hammer was used to shape the iron ingot to a long slender iron bar. One of the original nail hammers have been moved to the Lowe Forge which is now a museum.



9. Farming and forestry-equipment made by Strömfors bruk.

Axes, shovels, scythe blades and other farming equipment was also manufactured at the Upper Forge. After WW1 focus shifted on the manufacture of forestry equipment. The forge also experienced a small boom during the 1940s as iron became scarce and the blacksmiths at the forge would transform scrap iron brought by customers in to whatever tool or item they needed. The old technique used at the forge was versatile and the skill level of the blacksmiths was high due to the versatile manufacturing tasks they had to master as well as the knowledge they had accumulated over the generations. Production at the forge came to an end in 1950. The last order carried out by the forge was the production of specialty nails needed for the restoration work at the fortress of Sveaborg at Helsinki.



10. A Bila axe made by Strömfors marked with a "1" and the official brand stamp.

### **The branding controversy between the Billnäs and Strömfors companies**

The Strömfors Bruk Product Catalog of 1904 includes 17 axe models of which many are very similar to popular models made by the Billnäs Bruk Company. Strömfors bruk did have a few models of its own such as the number 8 and the number 16. Some of the other models were so similar that this created tension between the companies, especially around the turn of the 20<sup>th</sup> century. Billnäs had stepped up production with a more industrialized process with American made machine hammers, producing as much as 2000 axes per day. Finland was at the time an autonomous duchy within the Russian empire and many Billnäs axes were exported to the growing Russian market. Strömfors Bruk was only 100 km from the Russian border and had a geographical advantage to Billnäs Bruk which was situated in Southwest Finland. Strömfors bruk, with its 200 year old technology could not match the volumes of axes produced by Billnäs but still tensions mounted and in 1902 the Billnäs Bruk Company accused Strömfors Bruk of plagiarism.





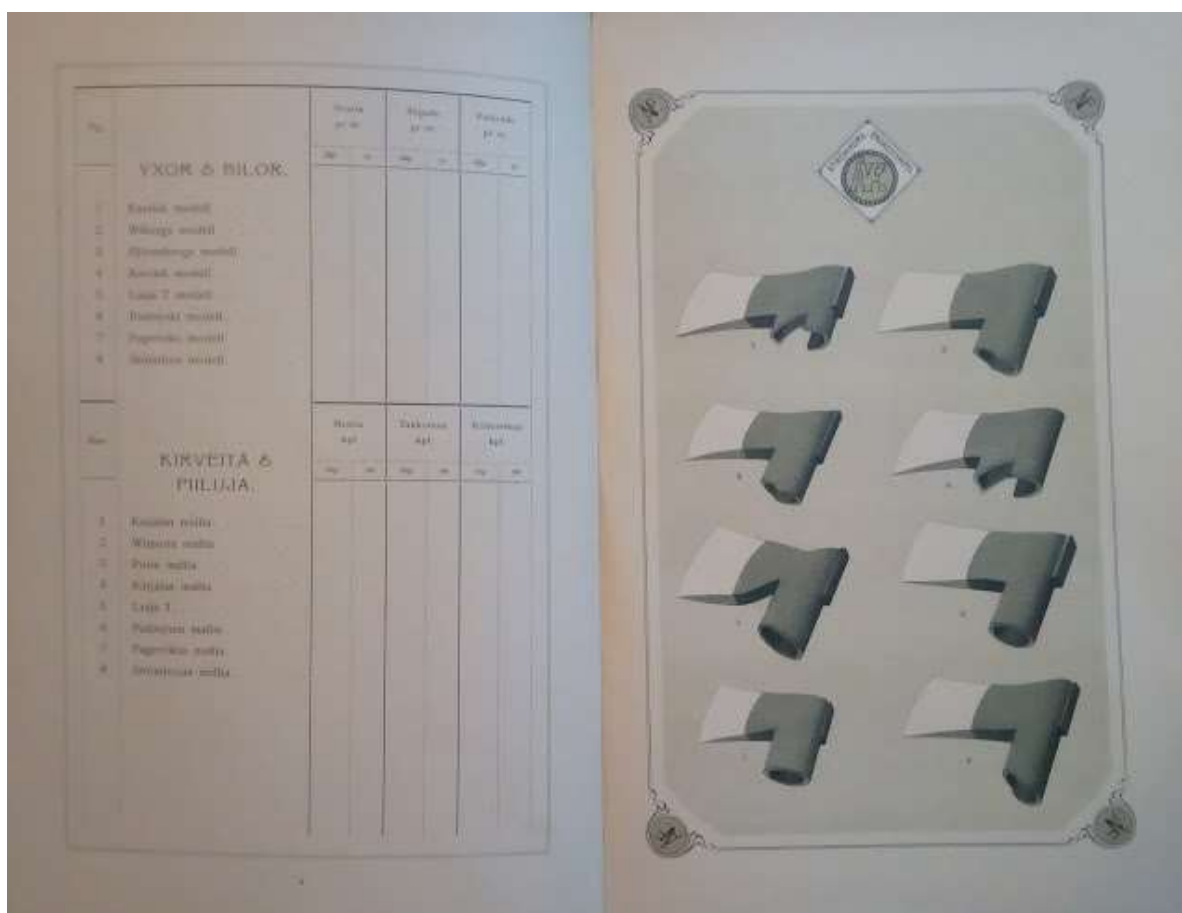
11. The Billnäs brand label from 1900.

Billnäs Bruk claimed that the shape of the Strömfors axes and even the company label attached on the heads were too similar to the Billnäs labeled axes. As proof of the claim two axes from both companies were presented to the court and the judge concluded that the size, shape as well as the label of the two were very similar. The defendant, the widow Ahlström claimed that the Strömfors label used on the axes predated the registered Billnäs stamp and she was unaware that the label was used. She claimed that the manager of the forge, Wallin, had introduced the label without her knowledge or consent. She maintained also that there was little resemblance between the two labels.



## 12. The controversial Strömfors Bruk label which was still in use in 1904.

The accusations of plagiarism were finally resolved in the Turku High Court in 1904. According to the verdict Strömfors Bruk had to remove the controversial label from all its produce and pay all legal costs of the Billnäs representatives. The court ruled that the use of the label was not intentional and the widow Ahlström was not charged. Billnäs Forge had used its trademark label since 1895, but formally registered it in 1900. Strömfors introduced their label in 1900 but failed to register it.



13. Some of the axes featured in the only known Strömfors catalog of 1904.

The court battle seemed to cast a long shadow on the marketing strategy of Strömfors. Billnäs Bruk and Kellokoski ads promoting axes are seen among the pages in many early 20<sup>th</sup> century Finnish newspapers and journals but Strömfors ads are scarce. It would appear that Strömfors axes were produced on a relatively small scale, often preordered by local clients or exported to Russia. Strömfors Bruk mainly marketed its produce in fairs and other events in the east and

northeast region of Finland. There are also indications that single orders for axes were accepted by the blacksmiths.



13. Strömfors wide axe model nr 18.

### **Strömfors axes**

Today surviving Strömfors axes are very hard to find outside of Eastern Finland. They are often mistaken for Billnäs or Kellokoski axes. The level of quality of these axes does not seem to be any less than that achieved by the other forges, but there are no official tests or other documentation that includes Strömfors made axes. The few axes which I have come across and have been able to positively identify as Strömfors produce show normal signs of wear with no visible cracks or other quality issues. The level of workmanship is impressive, given the fact that these axes were crafted by hand using old blacksmithing techniques.



14. A rusty Strömfors model felling axe. The corrosion has completely eaten away the stamp on the left side of the blade.

The axes on display in the Strömfors museum exhibit in the “Lower Forge” seem very well made with clean and straight lines. I have not been able to find any pictures of the axemaking process at Strömfors, but the process of forging an axe in Strömfors must have been more or less identical to processes in other forges.



15. Official Strömfors brand stamp.



All the stages of blacksmithing an collar axe is documented in an old film from the Swedish Wira Bruk in 1923 and can be considered analogous to how axes were made in the Upper Forge at Strömfors Bruk. The long history of the forge at Strömfors enabled blacksmiths to hone their profession across the generations and the accumulated level of craftsmanship attained by the 1950s must have been at a very high level.



16. The Strömfors Pori model nr 3 also has a counterpart in nr 11 in the Billnäs catalog.

Axes made at Strömfors were available in three different finishes; blackened, polished or as grinded. The general style of the axes made at Strömfors reflect the forges location in Eastern Finland and many of their models were unique to the forge, such as the Vyborg model nr2, the Padasjoki model nr 6, the Strömfors model nr 16 and the Carelian model nr 17. There seems to be some variations in crafting the axes and accommodating customer preferences.



17. The wide model T-axe nr 5 is a heavy duty felling axe.

A photo of a special order axe presented as gift to a Finnish commandant by his workcrew in 1943 is a variation of the nr 17 with a wider blade and a different collar than usual. Also there is only one hewing axe featured in the catalog of 1904, but the two hewing axes in the museum do have some differences in blade angle as well as in the shape of the lower part of the collar. This does suggest that individual blacksmiths had considerable influence on the appearance of the axe and variations did occur more commonly in Strömfors. The catalog of 1904 does not reflect the full range of axe models produced at Strömfors. One Bila-axe marked with nr 1 instead of 13 suggests that the models varied over time.



18. The axe head to the left is a Carelian model nr 17 by Strömfors, the Bila axe is also likely to have been made at Strömfors.

The Strömfors axes are unique in a sense that they were crafted using a virtually unchanged production technology for more than 250 years. Anyone lucky enough to come across a Strömfors Bruks axe can appreciate the legacy of generations of blacksmiths working at Strömfors.



19. An axe fit for a general. This one was given as a gift by the workers at Rukajärvi during the war with the Sovjet Union in 1943. Special order axe by Strömfors bruk.

### **Acknowledgements**

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### **Sources and further reading**

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## Images

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3. Strömfors museum exhibit. Marcus Lepola 2017.
4. Painting in the museum exhibit in Strömfors. Marcus Lepola 2017.
5. The museum exhibit in Strömfors. Marcus Lepola 2017.
6. Strömfors bruk. Marcus Lepola 2017.
7. Photograph in the museum exhibit in Strömfors. Marcus Lepola 2017.
8. Photograph in the museum exhibit in Strömfors. Marcus Lepola 2017.
9. Strömfors museum exhibit. Marcus Lepola 2017.
10. Strömfors museum exhibit. Marcus Lepola 2017.
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