Ever Use a Hatchel?

By Inga Milbauer

Every now and then we find an object in the collection of the Boylston Historical Society & Museum and it is not immediately clear what it is. You, too, may wonder "what is this?"

Flax Comb – Front View

BHSM Collection

The object in this photograph is a hatchel, also known as hackle or flax comb. This tool was used to remove the fibrous core and impurities from the flax fibers. Flax is a stalky plant with blue flowers. The flax fiber was drawn through the bed of iron "nails" to clean and straighten the fibers. After heckling, the flax could be spun to prepare it to weave into linen. The flax comb in the collection of the Boylston Historical Society & Museum is believed to be from circa 1790. It was donated by Mrs. Janet Bradford in 1995.

Flax Comb - Back View

BHSM Collection

Flax Comb – View of Nails

BHSM Collection

Flax, or *Linum usitatissimum*, is the oldest cultivated fiber plant, with evidence of its growth and use dating back to the fifth millennium BC in both Mesopotamia and Egypt. Egyptians turned the coarser, low-grade flax into rope and string; and used the finest quality for cloth. Linen fabric served as a medium of exchange and a measure of wealth. *L. usitatissimum* is believed by many historians to have been introduced into England by the Romans.[1] The colonists introduced this crop to northern America. The Scotch-Irish settlers, in particular, rejuvenated the textile industry in New England as they were accustomed to grow and spun flax.[2] The National Park Service describes the process of farming, preparing and spinning flax in the 17th and 18th centuries in the article *Flax Production in the Seventeenth Century* as follows:

> "After plowing in November, February and March, the ground was harrowed and raked fine. The small, oily flaxseeds were sown broadcast in April and a final harrowing took place. The closer the seeds were spaced, the less branching took place in the resultant plants and the higher the quality of the crop. If flax is sown properly, weeding is unnecessary because there is no space for unwanted plants.
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> Flax takes about a hundred days to mature. When the leaves yellow and the seed turn brown, the flax is pulled from the ground by the roots, spread to dry for a few days, and, if time was not a factor, stored until the next year to age.
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> Processing flax is an extremely labor-intensive process, providing skilled and unskilled employment for both adults and children. First, the upper part of the flax bundles are drawn through coarse combs to remove seed in a process called rippling.
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> After the seeds are removed, it is necessary to separate the long, silky inner fibers which constitute the end product from the straw and inner pitch. Retting, in which the unwanted fibers are loosened and decomposed, can be achieved in several ways. The flax can be left out in the field, where the exposure to the elements, particularly the moisture in the air, can do the work. A pond or through can be used to achieve the same effect in much less time, but with a prodigious odor. The ideal way to ret flax is to expose it to constantly running water, such as a stream. The amount to time this step requires depends on the quality of the flax, the temperature and numerous other variables
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> When the straw comes away easily from the few bent fibers, it is time to grass the flax. The bundles are untied and laid in a field for a few days until they are dried on one side, then turned so the other side can be dried. When the crop is thoroughly moisture free, it is stacked inside to age for a few more weeks.

Next, a series of steps free the linen fiber from the boon (unwanted plant material). The brake, a large wooden machine, is used to break down the trash material and loosen it further from the end product. Then the flax is scutched (beaten against a board with a blunt wooden knife). The final process is hackling, in which the fiber is drawn through a series of metal combs to remove the last of the boon and shorter fibers. The end result is a strick, a half-pound bundle of long, light grey fibers which resemble human hair. Over 85% of the plant has been removed before the strick is produced. Some of the shorter fibers removed during hackling can be used as tow for sacking or inferior cloth.

Brake Board in Use -Breaking flax during Anttila Harvest Market in Tuusula, Finland

Photograph Courtesy Anneli Salo, Wikipedia Commons, August 2004

Since flax is such a long fiber, special care must be given before spinning to keep it from tangling. A distaff is a tool which keeps the fibers separated and properly aligned during spinning. Thread is produced using the small wheel often called a flax wheel. An experienced spinner has little difficulty creating a fine, strong thread with flax. In order to produce a smooth yarn, however, she must also be able to moisten the flax continuously as she is spinning.

After the thread is spun, it must be stretched and boiled to set the twist put into it by spinning. Bleaching can be done either before or after weaving, by exposing the fiber to sunlight for prolonged periods or using such chemical treatments as chloride of lime, soap and soda or lye water."[3]

Different sized heckling combs are used to prepare the fibers for spinning, from coarser combs with only a few prongs or nails per inch, to finer combs. The finer the final heckling comb, the finer the yarn spun from that flax can be. As Alice Morse Earle describes in *Home Life in Colonial Days*: "It was one of the surprises to see how little good fiber would be left after all this heckling, even from a large mass of raw material, but it was equally surprising how much linen thread could be made from this small amount of fine flax."[4] She mentions that flaxseed, used for making oil, was a lucrative product of flax. Flax would be harvested for spinning when the base of the stalk began to turn yellow, which was usually the first of July in New Hampshire. "Usually the upper chambers of country stores were filled a foot deep with flaxseed in the autumn, waiting for good sleighing to convey the seed to town."[5] Nowadays, flax is primarily grown in North America for its seeds. In the last decade, there is renewed interest in flax as a food source due to findings suggesting that it can provide a variety of health benefits.

Flax, Flax Seeds, Linseed Oil, Linseed Cake

Photograph Courtesy of Wikipedia

Acknowledgements:

[1] https://www.nps.gov/jame/learn/historyculture/flax-production-in-the-seventeenth-century.htm
[2] https://worcesterhistorical.com/2018/07/11/flax-farming-and-food-how-scotch-irish-immigrants-contributed-to-new-england-society-in-the-18th-century/
[3] https://www.nps.gov/jame/learn/historyculture/flax-production-in-the-seventeenth-century.htm
[4] Home Life in Colonial Days by Alice Morse Earle, 1898, E-book, page 173
[5] Home Life in Colonial Days by Alice Morse Earle, 1898, E-book, page 176

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