

UP FRONT



MEADOWCROFT

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Turning Flax into Linen

Flax is the common name for a very versatile plant, various parts of which have been used to make cloth, food, oils, medicine, dye, paper, fishing nets, hair gels, and soap. One product, linen cloth, has provided people with numerous indispensable items from clothing to bed sheets. Its Latin name, *Linum usitatissimum*, literally means “most useful flax.”

The flax stalk is a woody cylinder surrounded by strong silky fibers and encased in a tough outer bark. Once the fibers are

cleaned and softened in a labor-intensive process, they can be spun and woven into linen.¹ Meadowcroft Rockshelter and Historic Village celebrates this most useful plant and its contributions to Pennsylvania by growing and scutching flax on its Frontier Farmstead.

Plant fibers were used by prehistoric hunter-gatherers to make cords for hafting (attaching a handle to) stone tools, weaving baskets, or sewing garments.² Examples of cordage dating to the woodland period and the late woodland/historic period, as well as cord marks on recovered pottery sherds dating to 3065 BP, have been excavated from Meadowcroft Rockshelter.

The earliest known flax fibers are approximately 30,000 years old, discovered in a cave in the Caucasus Mountains in the Republic of Georgia.³ Dr. Ferdinand Keller of Zurich wrote in the 19th century that:

The use of flax reaches back to the very earliest periods of civilization, and it was most extensively and variously applied in the lake-dwellings, even in those of

the stone period. But of the mode in which it was planted, steeped, heckled, cleansed, and generally prepared for us, we can form no idea any more than we can of the mode or tools employed by the settlers in its cultivation.... Flax was the material for making lines and nets for fishing and catching wild animals, cords for carrying the earthenware vessels and other heavy objects.⁴

Each immigrant group that came to the Americas from Europe brought flax. Though the Native Americans did not have flax, they certainly used similar fibrous plants [such as dogbane and milkweed, which still grow at Meadowcroft] for thread, rope, mats, and other purposes.⁵

In the Pennsylvania colony, German settlers were the first major flax producers. Families cultivated on average two acres of flax to meet their linen requirements. All family members were involved in sowing, harvesting, processing, spinning, and weaving.⁶



Flax Scutching Bee
by Linton Park, 1885.

Courtesy Meadowcroft Rockshelter
and Historic Village.



A field of flax at Meadowcroft's Frontier Farmstead.
John Boback

For early Pennsylvania settlers, flax was a very important crop. In 1691, a flax plant in full bloom was displayed on the Germantown seal. This prevalence of flax and linen in colonial life prompted Benjamin Franklin to pen the metaphor, "We are like the separate Filaments of Flax before the thread is formed, without strength, because without connection, but union would make us strong, even formidable."⁷

Immigrants settling in Western Pennsylvania brought the skills to grow and process flax into fibers that were spun into yarn, then woven into linen cloth. This process involved retting, braking, scutching, hackling, and spinning—steps still used. The linen industry was based in the farm household, where most families made linen for their own use. A family grew and processed its own flax and then spun and wove the linen. Flax crops provided linen for clothing, bedding, book bindings, grain sacks, and a number of other uses.⁸

Meadowcroft Rockshelter and Historic Village is recreating this frontier experience by growing flax just as our Western Pennsylvania ancestors did. In the early spring, flax seeds are broadcast in our newly recreated Frontier Farmstead. When the flax blooms mid-season, our visitors enjoy a field of beautiful, delicate

blue blossoms. The flax crop matures in mid-September. Harvesting requires pulling each stalk out of the ground by hand, then painstakingly hanging the flax bundles to dry.

Explore the magic of processing flax into linen at Meadowcroft Rockshelter and Historic Village and learn more about Western Pennsylvania folk life and historic trades and traditions. The museum will open on weekends in May, then Wednesday–Sunday until the end of August. In September and October, Meadowcroft is again only open weekends until the season concludes October 30.

¹ Merrimack Valley Textile Museum. *Linen Making in New England 1640-1860*. (North Andover, Mass.: Merrimack Valley Textile Museum, 1980).

² Chase, Mary A., "Flax from seed to fiber." *Spin-off Magazine*, Summer 1992, Vol. XVI.

³ Kvavadze, Eliso, Bar-Yosef, Ofer, Belfer-Cohen, Anna, Boaretto, Elisabetta, Jakeli, Nino, Matskevich, Zinovi. Meshveliani, Tengiz, "30,000-year-old wild flax fibers." *Science*, September 11, 2009: Vol. 325 no. 5946, p. 1359.

⁴ Christian and Johannes Zinzendorf. *The Big Book of Flax*. (Arglen, Pa.: Schiffer Books, 2011).

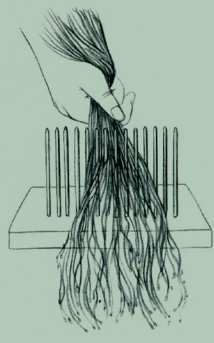
⁵ Ibid.

⁶ Linda Heinrich. *The Magic of Linen Flax Seed to Woven Cloth*. (Victoria B.C., Canada: Orca Book Publishers, 1992).

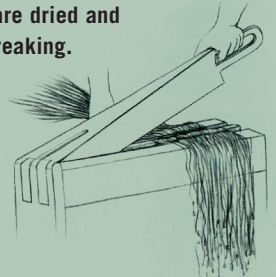
⁷ Zinzendorf, *Big Book*.

⁸ Ibid.

1 Once harvested, bundled flax stalks are "retted" by keeping the stems moist with dew or rain, or by immersing them in water. This encourages mold and bacteria growth, whose action dissolves the pectins that bind the fiber bundles. Seeds are removed by rippling, as shown in diagram.

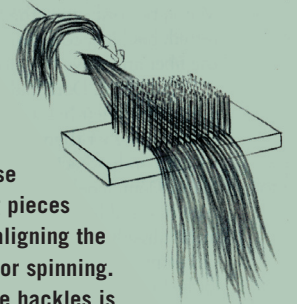


2 The retted stems are dried and flax is ready for breaking. A large wooden bar is used to crush, bend, or crimp the outer woody core. This leaves just the long, flexible fibers found inside each stalk.

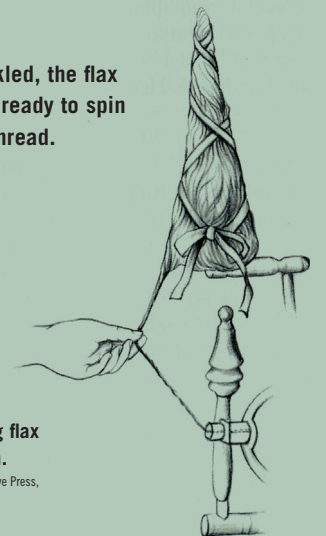


3 A blunt wooden blade called a scutching knife is used to "scutch" or "swingle" (gently scrape away) as much of the clinging woody core as possible without damaging the fibers.

4 The bundles of fiber are drawn over hackles or combs consisting of several rows of long metal tines. These remove the remaining pieces of woody core while aligning the fibers in preparation for spinning. The waste found in the hackles is called "tow."



5 Once hackled, the flax fibers are ready to spin into fine linen thread.



The steps of preparing flax to be woven into linen.

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