

From FLAX TO LINEN - a brief summary of the Processes involved before Industrialisation

Introduction

Historically, the production of linen was widespread throughout much of Britain, though the major areas of production were the North of England, the Scottish Lowlands and Ireland.

Flax cultivation and linen production were of considerable economic importance by 1700, due to encouragement from Parliament and the skills and techniques introduced by Huguenots from Europe.

The eighteenth century saw dramatic expansion of this industry, helped by specially developed machinery, which speeded up production of this highly labour-intensive domestic activity. This summary will concentrate on the cottage industry processes.

Examples of linen clothing products include HUGGABACKE, a coarse linen cloth, with a raised pattern, used for Napkins (towels) and for absorbent shirting. William Hobson, weaver, of Cartmel, was employed by Sarah Fell at Swarthmoor Hall, 1674-5, to weave this product. Ambleside was well known for the production of a cloth called LINSEY-WOLSEY, made up from both linen and wool, a strong and warm cloth, with linen warp and woollen weft.

Flax to linen

The conversion of flax fibres to linen cloth is long and complex, involving a large number of processes.



Flax plants planted very close together

Thanks are due to Sebastian Graham of the National Trust, currently an excellent Guide at the Wellbrook Beetling Mill, County Tyrone, Northern Ireland. (Beetling is a type of fulling). Sebastian kindly demonstrated the processes involved and helped with the photography and text.

1) SOWING

Seeds are sown April/May by hand, in water retentive soil, free of stones. Plants grow close together, to maximise the height of the plants.

2) PULLING

The whole plant is pulled up, including its roots, again to maximise the length of fibre.



Flax ready for the dressing process

3) RIPPLING

The process of removing seeds from the flax by drawing the upper part of the bundle of flax through a comb. The seeds are saved for linseed and linseed oil.



Rippling through a comb to remove seeds

4) RETTING

Usually took place in a man-made pond in which the green flax was immersed for 10-14 days, Sebastian's research indicates that clean water, lacking minerals, is required, as this allows bacteria to attack and soften the tough stems, which protect the fibres. The retting pond is also known as a STEEPING DUB (High Newton), and also a lint-hole.



Probable retting pond, Newton-in-Bowland, now converted to duck pond

5) DRYING

The retted flax was dried, often in the open air, by the side of the pond.

Once dry, the flax can be stored, ready for DRESSING, 6) to 8)

6) BREAKING or BRAKEING

Involves beating with a mallet or bat, to break up the outer stems.



Mallet to break up the outer stem

7) SCUTCHING or SWINGLEING

A secondary breaking down process, often performed by women using a wooden board with a slot in it. A handful of flax is held by the roots and the fibres are beaten down against the board with a wooden stick or scutching knife or blade. The outer stem drops off. This is known as SHOWS, a term dating from the 1680's after some Huguenots came over. The shows can be used to fill pillow cases.



Scutching, to remove the outer stem. SHOWS on the floor.

8) HACKLING or HECKLING

The final process in dressing flax. the bundle is held by the roots and drawn through a comb to remove the short fibres. The finer the yarn required, the more times this has to be done, using a finer toothed comb each time. The short fibres are known as TOW and the long fibres are called LINE. ("The girl with the flaxen hair" comes to mind when looking at LINE)

TOW could be used to produce a poor quality cloth, known as poor man's cloth, hence TOW-RAG is a resulting derogatory term.

"Raising the hackles" is another term associated with this process.

The LINE is made into bundles, ready for spinning.



Hackling or Heckling is the final process before the LINE appears



"The Girl with the Flaxen Hair" comes to mind

9) SPINNING

This involves drawing out the fibres from the bundle, twisting them into continuous yarn, then winding onto a bobbin to stop it untwisting. Sebastian recommends that the spinner's hands be wet, as this releases pectin from the LINE, a type of glue.

After Sebastian had spun a length of yarn, it was not possible to break it by pulling apart, testimony to the strength of the fibres.



Fairly standard spinning machine, note the cup of water to keep the fingers wet

10) BOIL THE BOBBIN

The yarn was sometimes boiled to remove the impurities that accumulated on the yarn. This made the yarn finer and purer.

11) REELING or CLOCKING

This measures the length of yarn on a bobbin, using a device called a weasel. After 120 turns, the device makes a popping sound, hence the term, "pop goes the weasel".

In Northern Ireland, 120 turns is the equivalent of 300 yards of yarn, called a CUT.
Twelve CUTS = One HANK
Four HANKS = One SPANGLE

200 CUTS = One BUNDLE



Measuring the length of yarn



The weasel which goes pop

12) WEAVING

Simple hand-loom used for other textiles can be used to weave linen.

The cloth when woven has to be finished. BLEACHING has four stages.

13) STEEPING

14) BUCKING

Boiling in lye, where lye is alkalis water. Lye possibly made from ashes resulting from burning bracken in a potash kiln. There were several of these kilns in High Newton.

15) GRASSING or CROFTING

Laying the cloth out on grass, a practice which continued until the 1930's.

16) SOURING

Soaking in weak acid

After BLEACHING, the cloth is BEETLED.

17) BEETLING

Beetling Mills used water power, so this process was slightly industrialised. This process was used in Northern Ireland, so may differ from the North-west of England. Mike Davies-Shiel did not mention this finishing process in his notes, though the first mention of beating hemp and linen was 1561 in Stamford, Lincolnshire.

The bleached linen cloth was wound on to large rollers, which were turned very slowly, as wooden hammers pounded down on them. The hammers were long pieces of wood, usually beech, which had an end square section profile of approx. 6" by 6". The wooden hammers were raised, then dropped, so that the ends of the pieces of wood, hit the linen. The linen had to be kept wet, a job undertaken by children, to soften the linen and stop fires.

After 4 hours, the cloth is turned over. The whole process lasted up to 2 weeks, and flattened the fibres, spreading them together, giving a shiny finish and also strengthening the fabric.

Blackout curtains were made "lightproof" by this process.



The linen on the left after weaving, the linen on the right after beetling

18) DRYING

The beetled linen is hung on creels in the upper floor to dry out. The windows in the drying area were louvred wooden shutters.



Creel, hung from the rafters.



Finished linen drying on a creel

19) DYEING



Flax grown in 2016 (photo Sebastian Graham)



Flax flower (photo-Sebastian Graham)

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