

Trowbridge Museum Cloth Manufacture Fact Sheets

Processing wool- Then and Now

Raw wool, freshly sheared from a sheep, had to undergo a great number of processes before it could be made into cloth. First it had to be sorted according to its type and quality. Then as much dirt and grease had to be removed as possible before the wool was ready for either bleaching or dyeing.

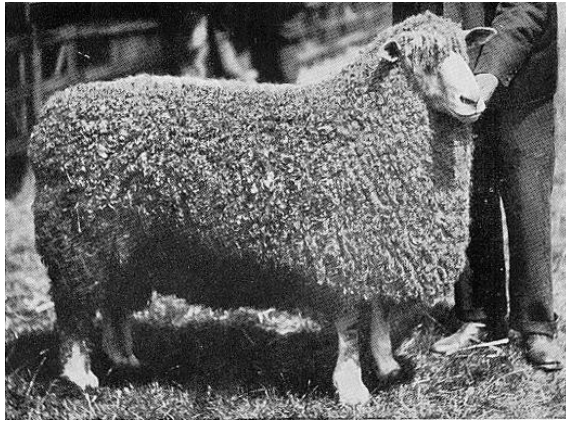
Lambswool was the first clip from the animal and its fibres were soft and elastic but broke easily. Yearling's wool came from the second clip and was stronger but most of the fleeces used today are from mature animals and therefore much tougher.

Sheep still have to be sheared by hand. In the past metal shears were used to clip the wool but today large electrically powered razors are used. The thick winter's growth of wool is trimmed from the sheep in a single piece and the most soiled parts are discarded.



Sheep's fleeces

In Eighteenth Century Trowbridge, clothiers purchased their raw wool from wool staplers, who had already sorted it according to type and quality. Some English wool was used but Spanish wool, particularly from merino sheep, was also popular. A clothier producing goods for the fine woollen trade would choose fleece with short-staple fibres, a manufacturer of worsteds would choose fleece with a long staple and one involved in the "low" woollen trade (such as a felt-maker) would use waste wool.



Above left, Lincoln ram; above right, Ryeland sheep- image courtesy of www.keirheadryelands.com

In woollen cloth, the wool fibres lie in different directions and the finished cloth has a fluffy appearance, as in woollen blankets. Worsted cloth is finer than woollen cloth; this is made with long staple wools, the fibres of which have been combed to lie in the same direction. By the time worsted cloth is finished, it has a smooth appearance.

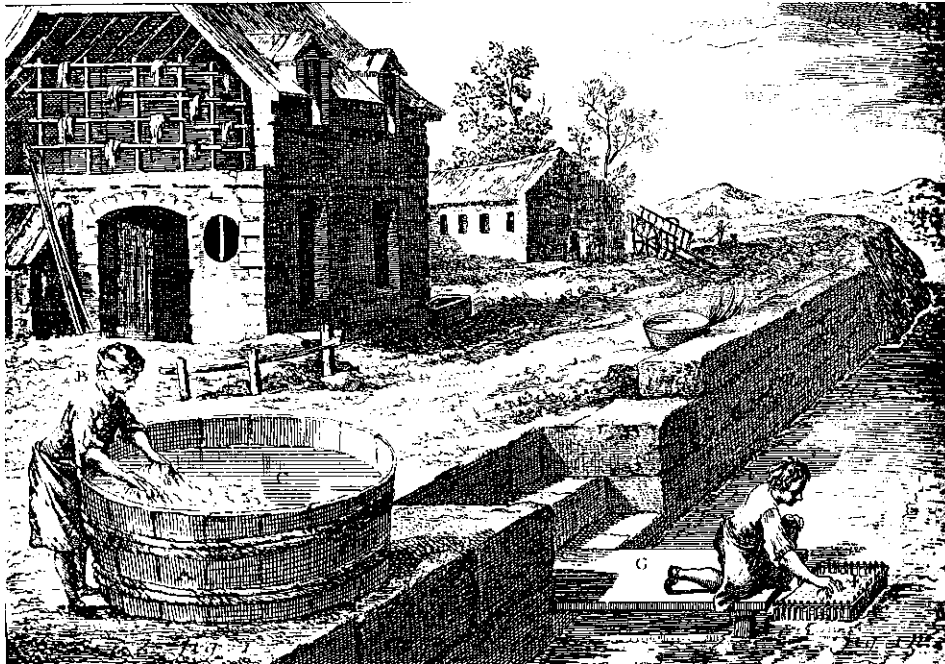
Once the wool had been purchased from the stapler it needed to be picked over by hand to remove impurities. After this it was spread out on large trays of mesh and beaten with willow wands so that burrs, grass, twigs and straw caught in the fleece could all fall through and be swept up from the floor. The person who did this job became known as a “willower”.

By the end of the Eighteenth Century a water-driven machine had been invented to carry out willowing, known as a “willey” or “whaum” but as it consisted of iron spikes it tended to rip roughly through the fibres. Later, the preferred method of removing vegetable matter from wool was by carbonisation, which virtually burnt the impurities out.



Willowing in the 18th Century

After picking, the wool had to be “scoured” to get rid of the natural greases. These consisted of “suint” (perspiration) and “lanolin”, produced by the sheep to maintain its fleece in good condition and keep it waterproof. The best substance for scouring was ammonia. Before the production of ammonia on an industrial scale, stale human urine, known locally as “sig” was used. The fleece would be mixed with ammonia and water and then suspended in baskets in swift flowing water to rinse out the scouring agent and the grease. This process was often carried out in dyehouses because they were positioned with easy access to the river.

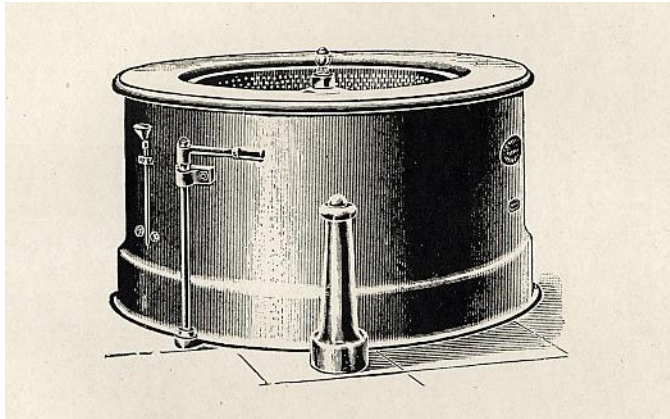


Washing wool

The machines used for scouring wool nowadays consist of a series of bowls containing the hot scouring liquor. The wool is drawn through these bowls with metal forks or rakes. The scouring agents consist of various mixes of soap, soda and ammonia. Whilst coarse wool can be cleansed without using soap, this is essential for fine, long stapled wools. Naturally soft or artificially softened water gives the best end product in that the clean wool is soft and easy to handle.

When scouring is completed, the wool is drawn through a further rinsing bowl or put in a special rinsing machine with a copious supply of water.

In modern times, the job of “picking” or removing vegetable matter from the wool is done after the scouring. This is done through a process of carbonisation. First the wool is soaked in sulphuric acid for a limited period of time. Then it is drained and put into a hydroextractor after which it is heated in an oven. By this time the sulphuric acid has concentrated the impurities which are charred by the heat. Once carbonisation has taken place, the wool is washed with soda so the remaining acid is neutralised and then a secondary washing takes place to remove the soda. If any chemicals are left in the cleaned wool, they could adversely affect the dyeing process.

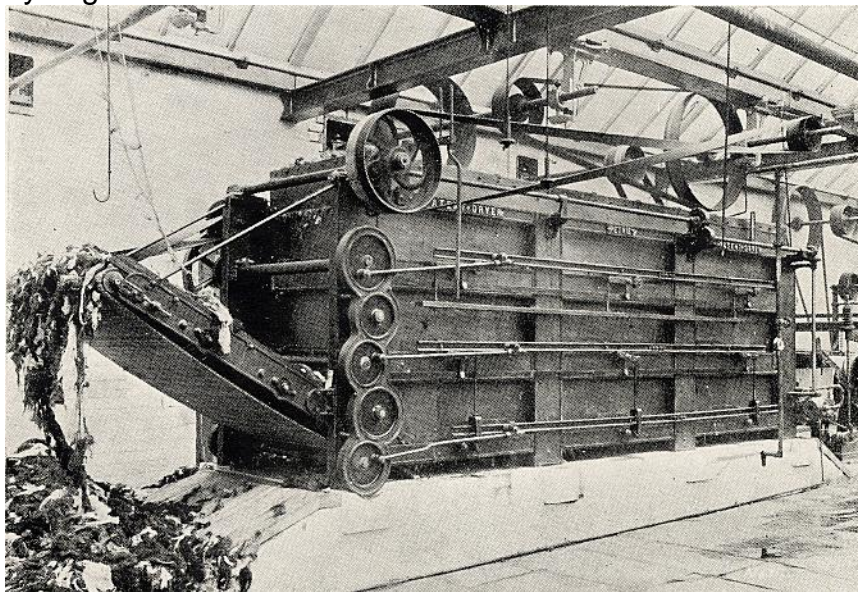


Hydroextractor

It is not normally necessary to bleach wool because its natural yellow tinge can be concealed by dyeing. However, if a very pale colour or white are required then bleaching must take place first.

One method is to oxidise the yellow colouring, producing a more permanent white. This uses hydrogen peroxide in a bath of water made slightly alkaline with silicate of soda or ammonia. The other method involves reducing the discolouration in a stove containing sulphur dioxide gas.

Once the wool has its grease removed and is clear of impurities, it is ready for dyeing.



Petrie's Drying Machine