

Have You Any Wool (Part Two)

by Ava Coleman

Editor's Note: The initial article of the series was published in the August – October 2008 issue of Cast On. In “How It All Began,” Ava Coleman provided a concise historical overview of the invention of knitting. Find additional historical items online at www.TKGA.com under the Education tab. Part One was published in the May – July 2009 issue of Cast On.

It's important to know where we have been and how things were done, so we can appreciate where we are today. Wool fleece processing has changed little since the Babylonians. Many people throughout the world still process single fleeces or small numbers of fleeces using the techniques developed in pre-historic times. From small mills here in America to the single knitter in Mongolia, everyone shears, cleans, cards and prepares their fibers by hand in basically the same manner. Large commercial mills worldwide may use advanced technology and sophisticated industrial equipment, but the steps to create wool yarn are still much the same. This time honored process seems to be one place where the reasoning “if it ain't broke, don't fix it” has prevailed.

Growing: Sheep are considered one of the most efficient animals on earth. They are able to graze where cattle, swine, deer and elk are not able to survive. Hence they convert to protein (wool, milk and meat) the natural resources not used by other animals. Some countries also use animals to fertilize the land for corn and other food crops.

Shearing: Usually done in the springtime, before lambing (birth of new animals), this is the removal of the fleece. A good shearer will remove it in one piece without damaging the skin of the animal. Once an animal is shorn, new wool begins growing immediately.

Classing/Grading: Until the 1980's, the measuring of fiber fineness, length, diameter, crimp and dirt/vegetable matter in a fleece was determined completely by touch and visual inspection. This is still how it is done for most individual animals or small flocks throughout the world today. Large commercial flock wool is still hand and visually inspected. Sometimes it is then evaluated using handheld micron counters. The fleeces are baled together by class (similar characteristics). Core samples are extracted from the bales for more exact laboratory testing. The finer fibers fetch the highest prices.

Scouring: Washing the wool removes the grease (unrefined lanolin), vegetable matter and other impurities. These impurities account for 30-70% of a fleece weight. Single fleeces and small batches are soaked in hot, soapy water, rinsed and spun in a centrifuge to remove excess water. The wool is then allowed to air dry. Commercially, the fleeces transfer through the wash and rinse cycles on conveyers and then

are air blown dry. The unrefined lanolin is extracted from the wash water to be sold as a by-product of the commercial production.

Carding: Often compared to combing one's hair, this straightens the fibers. This also allows for any remaining vegetable matter to fall out as the fibers are separated. With single fleece and small batch this is usually performed with a pair of wool hand carders (curved paddles with sharp-toothed fabric) or a tabletop drum carder (a device where the wool is fed through two rotating rollers covered in sharp-toothed fabric). Commercially, one carding machine may accept 100 or more pounds of wool at a time. The rollers vary in diameter and move at variable speeds. Instead of the sharp-toothed fabric used on the hand devices, the rollers have built in steel teeth. The advantage to commercial carding is that because of the equipment design, the straightened fibers can transition directly into continuous ropes of fiber. Depending upon diameter, these are referred to as “slivers” or “roving”.

Spinning: In very simple terms, this is drawing out the fibers while supplying enough weight and twist to maintain a finished continuous, uniform product. Since pre-historic times yarn has been created using a “spindle” (a stick and a weight). Today, hand spinners everywhere still use some form of this simple tool. Spinning wheels, using the same weighted stick principles, came into use somewhere around 1200. Commercial spinning equipment traces its roots to drawings done by Leonardo DiVinci. This design allows the yarn to automatically wind onto the bobbin as the product is spun.

The properties of wool make it the near perfect fiber. The presence of keratin (a natural protein) makes it flame resistant. It has an elastic recovery, so garments retain shape. It provides warmth, even when wet. Because water swells the fibers it prevents wind chill. It is strong and resists breakage. Although completely biodegradable, if treated with respect a knitted wool garment will last a lifetime or more.

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