

**Woolen and Worsted Yarn for an Elizabethan Knitted
Suite**

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Introduction

This is the spinning part of an Elizabethan Knitted Suite project to recreate a full knitted suite of undergarments for an English woman out materials that would have been available at the time.

The yarns are as follows:

- Scoggers: two ply, fingering weight, worsted, 14 wraps per inch, Clun Forest wool
- Hat: two ply, fingering weight, woolen, 15 wraps per inch, Merino wool
- Socks: two ply, fingering weight, worsted, 15 wraps per inch, Merino wool

Materials

Wool from two different breeds of sheep were used during the course of this project.

Clun Forest

To be able to start quickly, the yarn for the scoggers was spun from Clun Forest wool. This is a post period breed of sheep but I had already washed and prepared the wool for spinning. The wool is cream in color and has a very tight wave (crimp). It is a soft wool compared to most sheep breeds.

Clun Forest is not a period breed of sheep. It's a modern breed derived from a Cotswold and Ryeland sheep. (Ryder) The Cotswold sheep would have been a period breed. As an aside, it is difficult to find genetically pure sheep breeds from the Middle Ages.

Merino

I purchase a Merino fleece for the rest of the project. The Merino breed of sheep produces white, very soft fleece with a tight crimp.

Just how accurate was the choice of Merino wool for a knitted item of the late 1500s, in England?

The basic trait of the Merino sheep was established by the 1300s. (Ryder, 426) That trait was a very fine quality to the wool. So the fleece of the Merino was close to the quality of a medieval fleece but not exactly the same. We got as close as we could.

Up until the 1400's English wool dominated the market at which point the development of Merino sheep in Spain brought a new standard in wool quality. Spanish and English wool competed with each other from the 1400s on protected by the economic policies of the respective countries.

Despite all of the incentives for buying locally, some foreign goods and materials were imported. It is likely that initial spinning happened in Spain and was then exported to other nations.

Types of Yarn

Woolen yarn is spun from wool that has been prepared to spin using hand cards. Hand carding produces wool that is open, fluffy with the fibers going every which way. The yarn is not spun tightly to allow the yarn to fluff up when finished. The finished yarn is fuzzy and very stretchy. The yarn for the hat is woolen. Additionally, woolen yarn is better for fulling, because of the available strands to interlock and create new connections across the surface of the knitted product.

Worsted yarn is spun from combed wool where the fibers are all parallel to each other. The method for spinning worsted yarn is very controlled. The fibers are smoothed down as they are spun together tightly using a high twist. The finished yarn is relatively smooth, shiny, and is not as stretchy as woolen yarn. The yarn for the scoggers and the yarn intended for the socks are worsted. Worsted yarn, having the harder skin is more commonly used for items that are going to see hard use or for the preparation of fine quality fabrics. The scoggers found in the Mary Rose are worsted. (Rutt, 59)

Fiber Preparation

Sorting

A sheep's wool has differing quality and length depending on where on the sheep that part of the fleece came from. The wool from the leg and the belly of the sheep is usually considered the worst. Wool from the back and shoulders is usually of a better quality and longer fiber (Lee, 108).

Although I sorted the fleece before washing, it became apparent further into the project that the sorting was not done very well. There wasn't any noticeable difference while spinning the wool but it did have an effect on dyeing the finished yarn.

Washing

During the late Middle Ages, wool was often washed by sending the sheep through a creek or into a pond before shearing. I did find one reference to large tubs being used but that appears to have been an uncommon method. (Ryder)

The fleece needs to be washed to remove vegetable matter (seeds, leaves, etc.), dirt, and the lanolin also called grease. The wool was not spun "in the grease" because the knitter was picky and the grease makes subsequent processing, carding and combing, more

difficult if not impossible. This Merino fleece had the highest amount of grease in it that I had experienced. To be able to comb some of the wool, it was necessary to wash it a second time to remove more of the grease.

Since I bought the fleece already sheared off of the sheep and Merino wool is extremely prone to felting, I used the following method from “Hands on Spinning” (pp 110-111) for washing the wool.

The wool was washed by soaking it in five consecutive containers of hot water. Water as hot as the washers could stand was used to help the grease melt. Cold water was not used in any of the washes or the rinses because large temperature change can cause the wool to felt.

1. A plain hot water soak start melting the grease.
2. A soapy water soak, using Ivory dishwashing soap, to remove dirt and grease.
3. A second soapy water soak to remove yet more dirt and grease.
4. rinse water with some vinegar to balance the pH of the wool and help cut the excess soap.
5. A plain hot water rinse to finish rinsing out the detergent.



First- Plain water soak



Second – Soapy water



Third – Soapy water



Fourth – rinse with vinegar in water



Fifth – Plain water rinse

The vinegar in the first rinse is to help get rid of the soap and balance the pH of the wool. If the wool becomes too alkaline it can be damaged leaving it feeling harsher to the touch and less durable (Raven, 110).

Combing and Carding

Cards

Hand cards were mentioned being used in France and Flanders in the late thirteenth century (Gies, 176).

The Merino was carded by a novice. I demonstrated the process to her and she processed the rest of the wool to be spun into woolen yarn.

Not all of the wool was carded enough and some of it was over carded. The over carding caused bumps in the yarn, called neps or noils, . These tangled knots of wool can be caused by overly vigerous carding or using incomplete card strokes. Under carding the wool allows clumps of it to stick together and cause thick spots in the yarn.

Combs

Wool combs were used through out the SCA time period to prepare wool for spinning. Existing combs were found in the Osberg ship, a Viking burial ship excavated in 1904. These had a single row of metal tines.

In sixteenth century England, large wool combs with five rows of tines were used to process wool. The combs were heated to straighten the wool fibers allowing a smoother yarn. (Ryder)

The combs I used are Viking style combs with two rows of tine. These are very similar to the Osberg wool combs with the main difference being the second row of tines. Help was provided by Cecily of Courtlandtslot.



Combing the Wool

Spinning the Yarn

Spinning wheel

The spinning wheel first arrived in Europe in the late thirteenth century as spindle wheels, otherwise known as great wheels. The wheel was rotated by the spinner's hand while the other hand controlled the wool.



In the late fifteenth century a treadle was added to spinning wheels allowing the spinner to use both hands to control the wool resulting in a better quality yarn. Fliers, Y shaped pieces of wood that spin around the spindle, were added to spinning wheels to give the yarn extra twist. The flyer was probably borrowed and adapted from the silk industry. (Geis, 269).



Treadle



Flyer

I used my Ashford Traditional spinning wheel for this project. It has the characteristics of a 1500s spinning wheel described above. My understanding from the description on page 269 of “Cathedral, Forge, and Waterwheel” is that the early flyer wheels used a double drive mechanism that controlled the flyer and the spindle separately from the

large wheel. My spinning wheel has a bobbin and uses scotch tension, a brake band around the bobbin to make its speed different from the flyer's speed.



Spinning Woolen Yarn

Since the woolen yarn is intended to be fuzzier and less compact, the yarn was spun without smoothing the fiber as it went through my fingers.

After spinning enough of the yarn in singles, I plied two singles together. Plying strengthens the yarn, evens out twist irregularities, and “balances” the yarn. Single ply yarn has a tendency to try to untwist or twist back upon itself and from experience I found that single ply yarns will cause a knitted garment to slant in one direction. Balancing the yarn takes the singles and twists them together so that the twist energy that is causing the slant is cancelled out.

Plying is recognized as a pre-1600 practice because many of the extant objects are two ply. Specifically, the Monmouth Cap (Rutt) and Scoggers (Rutt, 59).



Plying on the wheel.

Spinning Worsted Yarn

I spun the worsted yarn using a high amount of twist. I hold the wool loosely in one hand and draft it out a couple of inches. The other hand pinches the yarn then slides back to the other hand, smoothing and compacting the fibers before they are twisted together.

The worsted yarn did not turn out as smooth as I had hoped partly due to my inexperience and partly due to the tight crimp of the wool. A less crimp (wavy) wool would produce a smoother, glossier yarn.



During the plying process, the yarn was also smoothed down between my fingers to keep the fibers in place as the single plys untwisted a little.

I had some minor problems getting the plying correct with both the woolen and worsted yarns that caused the finished skeins to not hang perfectly straight.

Finishing the Yarn

The yarn was finished by washing it in hot soapy water and rinsing it with plain hot water.

The skeins of yarn were hung to dry with a light weight of a small coffee cup hanging from the bottom to keep the slight problems with the plying from causing any problems

for the knitters. The weight on the skeins made them dry straight. I don't think the weight was heavy enough to affect the loft of the yarn.

Notes on Handspun Yarn

The yarn was spun in many different sittings, usually two to three hours at a time. I counted my number of treadles per draft to keep the twist in the yarn even and kept a sample piece of yarn tied to the spinning wheel to keep a consistent yarn thickness.

Even with that care, my mood and energy level would influence my spinning and cause differences in the yarn from one sitting to the next. The differences were not obvious until the yarn was used in knitting the scoggers. Using the exact same pattern but two different skeins of the yarn, one scogger came out shorter than the other.

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