In Depth Study Permission and License

By signing and submitting this agreement, I grant Olds College the non-exclusive license to archive and make accessible my Master Spinner Program In Depth Study in whole or in part in all forms of media now or hereafter known for educational, research, and scientific nonprofit uses during the full term of copyright. I retain all other ownership rights to the copyright including the right to use in future works (such as articles or books) all or part of my work.

I represent that the submission is my original work, and that I have the right to grant rights contained in this license. I also represent that my submission does not, to the best of my knowledge, infringe on anyone's copyright and that I have obtained written permission from the owner(s) of any third party copyrighted matter included in the work.

I understand that my In Depth Study will be placed in the Olds College’s library for access to the public. I will understand that I will clearly be identified by name as the author of the submitted work and that Olds College will not make any alteration other than as allowed by this license to my submission.

Signed: [Signature]

Date: July 6, 2019
Comparative Study of Single Ply, Two Ply and Three Ply Shetland Yarn for Knitting Open Work

Indepth Study, Level VI, Master Spinner
Prepared for Ruth Blazenko, Olds College

Prepared by Margaret Sjostrom
July, 2002
Summary

This comparative study between single and two ply yarns in knitting open work was to determine differences in stability, drape, and handle. I have explored various knitting stitches as well as various finishing techniques on the single ply yarn. Subsequent to completing all the samples, I was unable to detect sufficient differences in the single ply samples to recommend a certain finishing technique. The single ply has a lighter, airy hand whereas the two ply has a heavier, flatter drape. My final exploration was in three ply, which resulted in a bouncier drape than the two ply. I completed a shawl using the three ply yarn, and am very pleased with it.
# Table of Contents

Summary .......................................................................................................................................... 2

Table of Contents ............................................................................................................................. 3

Introduction....................................................................................................................................... 4

Discussion:....................................................................................................................................... 6

Conclusion: ....................................................................................................................................... 8

Comparative Table of Results .......................................................................................................... 8

References: .................................................................................................................................... 10

Appendices: .................................................................................................................................... 11

  Background: ................................................................................................................................ 11

  Sample Reproduction: ................................................................................................................ 12

  Spinning to calculated (required) t.p.i.: ....................................................................................... 13

  Shetland Sheep .......................................................................................................................... 15

  Shetland Wool ............................................................................................................................. 15

  Old Shale Pattern........................................................................................................................ 16

  Long-Tail Cast On....................................................................................................................... 16

  Shetland Colour Chart ................................................................................................................ 17

  Map of the Shetland Islands ....................................................................................................... 18
Introduction

Shetland sheep are a small hardy member of the North Country shorttails native to the Shetland Islands. Shetland wool is soft, warm and strong enough to withstand the high twist necessary to spin only a few fibers together in order to accommodate the gossamer effect desired in Shetland lace. I have provided some information on Shetland Sheep, Shetland Sheep Colors and Markings as well as a brief history of Shetland Knitwear in the appendices. There is much information available on the Internet now, and so many excellent sites to visit, including the North American Shetland Sheep site.

While reference materials note that the heaviest yarn that should be used in knitting a shawl is a sports weight, fine handspun or commercial singles or soft-spun two ply yarns are preferred choices. Shetland lace may be knit with a single due to the extreme stretching during blocking, although most believe that true lace weight is two ply with a grist equal to a human hair. In addition, the traditional patterns use a garter stitch that provides balance rather than stocking stitch, which tends more to show bias. I have included a stocking stitch, knit two purl two rib and a garter stitch sample for a base of comparison. (Sample 1)

During my years of spinning, I have found that single ply yarn tends to unspin as soon as tension is removed. The open work of lace requires a stable strong yarn, and the desired drape requires a balanced knit. There are several ways of finishing yarn, and this comparative study will explore three; firstly, wound from a niddy noddy to a ball of yarn and knitting from the ball; secondly, winding onto a niddy noddy and thoroughly wetting the yarn, allowing it to dry under tension; and thirdly, knitting directly from the bobbin. All samples were then finished by washing in soapy water with two rinses, and then blocked with t-pins to dry. Subsequent to finishing, samples will be compared for stability, drape and handle. I experimented with a higher number of twists per inch, but my yarn kept breaking. All singles were spun on my Schacht wheel at 11 twists per inch. I attempted to draft as fine as I was able, and though the results are heavier than true shetland
Shetland Lace Comparative Study
Margaret Sjostrom

lace, for the purposes of this study I believe they will suffice. All singles samples were taken from a bobbin left to sit for six months, which in itself is a finishing technique, albeit a rather passive method.

The purpose of this report is to explore various methods of stabilizing a one ply yarn for knitting shetland lace shawls. A two ply sample will be used as a base of comparison for handle, drape, strength, stability, and suitability for use. The various comparisons should assist another spinner who wishes to knit a one ply lace with satisfactory results. I chose our own Shetland sliver to spin my samples. As I grouped coloured fleeces including moorit, mioget, faun, and shaela together, the result is a very lively yarn, rather inviting bounce. The fiber has good staple length to accommodate the open work of the lace and has a pleasing soft handle. A sample of the fiber has been included as Sample 2.

To control the number of variables, all samples were knit on 5.5 mm knitting needles from Old Shale pattern as provided in Traditional Knitted Lace Shawls by Martha Waterman and using a long tail cast on method. While Mabel Ross notes on page 58 of 'the essentials of yarn design for handspinners', the singles are spun with 18 – 26 tpi, 70 wpi, 17 degrees, and appear to have a z twist. Spinning Worsted Yarn for Fine Shetland Lace by Judith Storey notes the average details of Island spun yarn are spun with 5 to 6 fibers, singles at 38 to 42 tpi and plyed at 36 to 40 tpi, 70 to 80 wpi, producing a 2 ply yarn about the thickness of a human hair. Very kindly, she then notes that a suggested aim for beginner's fine yarn is spun with about 12 fibers, singles at 14 to 18 tpi and plyed at 12 to 14 tpi with 40 wpi the end result. On page 12, Ms Storey notes that it is not easy to count tpi in very fine yarn, and the easiest method is to count the number of treadles for each inch spun. The yarn spun for the purposes of this comparative study were spun at 11 tpi, 36 wpi with an angle of 17 degrees. While I was unable to achieve the fineness desired for a true shetland lace weight, Ms Ross notes that given the same angle, threads of all thicknesses will have a similar 'handle' (p.45), therefore the results of this study should apply to finer yarns.
Discussion:

The desired properties for knitting lace are strength to accommodate the open work pattern, softness for comfort against the skin, good handle to provide the drape desired. Yarns for knitting have similarities to yarns for warp. Any kind of fancy pattern knitting puts stress on single strands for the lifetime of the piece, especially at "yarn over" openings. The interlacings of a knit aren't as dense as those of a woven fabric where the multiple crossings meld the yarns together; knitting doesn't strengthen its component yarns the way weaving does. A yarn for knitting, whether smooth and dense or light and fluffy, has to have inherent strength.

The twist and ply of the yarn, besides contributing strength, influence the texture of the knit. A tight single will tend to make a very tight, elastic and stretchy fabric. A plied yarn will give textures closest to the standard wool knitting yarns. A loose single will tend to mesh down into a flat, texturally smooth surface. This surface could be made fluffy with the fiber displayed rather than the knit, for example brushed into a soft shag.

A tightly twisted yarn, single or plied, is usually preferred if the weave or knit is loose and open. Otherwise the texture of the weave/knit is lost in the loose, opened out yarn. Besides, loosely incorporated fibers invite catching, pulling and breaking, all disastrous to a loose weave or knit.

The two ply sample was spun at 3 tpi, 17 wpi, with an angle of 17 degrees, with a balanced twist set at zzS (Sample 3). The sample was washed and blocked with t-pins, and forms the base for comparison with the single ply samples. I found that this two ply provided sufficient strength to accommodate the open work pattern, softness for comfort against the skin, and good handle to provide the drape desired. In addition, the light plays pleasingly on the variations of colour in the fiber.
The first one ply sample was taken from the bobbin after six months sitting and wound onto a niddy noddy. This was done to establish the number of yards likely required to knit three samples and to provide a small yarn sample as well. The sample was then taken from the niddy noddy and wound into balls for knitting. As I knit the samples, the little ball would bob in the air, and untwist periodically. The samples are quite uneven as a result. (Sample 4)

The second one ply sample was wound from the same bobbin onto a niddy noddy, and soaked in warm water for ½ hour. The sample was allowed to dry on the niddy noddy under tension. When dry, I carefully slid the yarn off the niddy noddy, and draped the loop over my lap, knitting from the beginning end. This seemed to be the most stable for knitting, and little unspinning occurred during knitting. (Sample 5).

The third one ply sample was knit directly from the bobbin. I found that casting on stitches caused spin to untwist more so than the other two samples, particularly in the beginning. A different type of cast on might alleviate this. Knitting the sample subsequently seemed to be quite stable. (Sample 6)

In the spinning for this study, I had many bobbins of fine singles. I spun these into six skeins of three ply yarn for an additional source of comparison. I was so pleased with the result that I knit a lovely warm shawl (Fan Stitch Half-Circle from Traditional Knitted Lace Shawls, page 90). I enclose a photograph of the finished shawl, and a small sample of the three ply yarn used to create it, and have included a knitted sample in the Old Shale Pattern for ease of comparison. In my opinion, this would be the preferred choice for a shawl with this lively yarn as the three ply provides more bounce in the drape. (Sample 7)

After knitting, all samples were washed in soapy water, with two rinses, and blocked to dry with T-pins.
Conclusion:

In my opinion, there are insufficient differences in the singles samples to strongly recommend a finishing technique. It would seem most efficient to knit singles straight from the bobbin, blocking carefully after the shawl is completed. I prefer the lacy, delicate look of the single ply to the two ply sample. However, as noted prior, the three ply has a similar drape, with more bounce that the single or two ply samples.

Comparative Table of Results

<table>
<thead>
<tr>
<th></th>
<th>Single Ply Sample 4</th>
<th>Single Ply Sample 5</th>
<th>Single Ply Sample 6</th>
<th>Two Ply Sample 3</th>
<th>Three Ply Sample 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handle</td>
<td>Light Airy</td>
<td>Light, Airy</td>
<td>Light, Airy</td>
<td>Heavier</td>
<td>Heaviest</td>
</tr>
<tr>
<td>Drape</td>
<td>Light, floating</td>
<td>Light, floating</td>
<td>Light, floating</td>
<td>Soft, even</td>
<td>More bounce</td>
</tr>
<tr>
<td>Strength</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Better</td>
<td>Best</td>
</tr>
<tr>
<td>Stability</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Better</td>
<td>Best</td>
</tr>
<tr>
<td>Suitability for end use</td>
<td>Light, delicate Shawl</td>
<td>Light, delicate Shawl</td>
<td>Light, delicate Shawl</td>
<td>Warm every day shawl or scarf</td>
<td>Very Warm every day shawl or scarf</td>
</tr>
</tbody>
</table>
Sample Summary:

Sample 1: Comparison of Two Ply and Single Ply in Garter Stitch, Rib and Stocking Stitch.

Notice that the garter stitch is the same, but the rib in the two ply pulls in whereas the one ply does not. Also, the stocking stitch in the singles results in a definite bias pull to the right.

Sample 2: Fiber Sample.

This shetland fleece is from our own flock, and is the blending of several coloured fleeces including moorit, mioget, faun and shaela. The fleece was processed at Rocky Mountain Exotic Fibers in Innisfail into sliver.

Sample 3: Two Ply Sample:

This sample was knit with a balanced yarn to be used as a comparative standard for the single and three ply samples. The light plays on this sample more than on the single ply samples.

Sample 4: Single Ply Wound Onto Niddy Noddy, Then Wound Into a Ball.

While knitting this seemed to be the most unstable, however, the end result seems to be as stable as the other methods.

Sample 5: Single Ply Dried Under Tension.

Knitting this sample seemed to be the most stable method, but the end result seems to be no different that the other two samples.

Sample 6: Single Ply Knit Directly from Bobbin.

Casting on the stitches seemed to cause more untwisting that the other two methods, but again the final result seems to be no different that the other two samples. As this is the least amount of effort, I would suggest that it is most appropriate to simply knit directly from the bobbin.

Sample 7: Three Ply Sample with photo of finished shawl.

This sample was added to the study as I had completed a shawl with three ply, and was very pleased with the result. There is lots of stitch definition with three ply, and the result is a warm practical shawl with lots of bounce to the drape.
Fiber Sample

Shetland Sliver

Colour Blend
- Moonit
- Mijoet
- Fann
- Shaela
Two Fly Sample

Pattern: 'Old Shale'
on 3.5 mm

Spun: 22 S
3 ply
17 wpi
20°
Single Fly - Wound from Bobbin to
Niddy Noddy, Then
Wound into a Ball.

Pattern: 'Old Shade on 5.5 mm

Spun: 2
11 tpi
36 wpi
170

Sample 4
Single Ply - Dried under Tension

Pattern: 'Old Shale' on 5.5 mm

Spin: 2
   11 tpi
   36 wpi
   17°
Single Ply: Knit directly from Bobbin

Pattern: 'Old Shale' on 5.5 mm.

Spun: 2
11 tpi
36 wpi
170

Sample 6
Fan Stitch
Half Circle Shawl
Traditional Knitted Lace Shawls
(Page 40)
on 8.0mm

Spun Z22 S
34pi
13 wpi
170
Three Ply Sample - 'Old Shale' Pattern

Spun: 222 S
34pi
13 wpi
170

Sample 7
References:

Ligon, Linda, Homespun Handknit Interweave Press, 201 East Fourth Street, Loveland, Colorado 80537 USA., 1987

Ross, Mabel. the Essentials of Yarn Design for Handspinners: Mabel Ross, Spinningdale, Crook of Devon, Kinross, KY13 7UU, Scotland. Distributed in USA and Canada by Robin and Russ Handweavers, 533 North Adams Street, McMinnville, Oregon, 97128, USA.


Waterman, Martha. Traditional Knitted Lace Shawls: Interweave Press, 201 East Fourth Street, Loveland, Colorado 80537 USA., 1998

Appendices:

Background:

We have been raising Shetland Sheep since 1989. These delightful little sheep are the perfect spinner’s flock, and fit nicely on our nine acres of ‘farm’.

I have been spinning and knitting for more years than I wish to count, and have fallen in love with our little Shetlands and their fleeces. Each Shetland fleece has its own personality, and prefers to be spun in a certain way. As a primitive breed, the variations in fineness, crimp and double coats make shearing and sorting interesting.

Having Shetland Sheep causes a person to read as much as possible about the sheep and wool history. The Fair Isle patterns with natural or dyed Shetland fleece began long ago and have many variations of thought on the how or why of the development of the intricate designs. I prefer to follow the thought that utilizing the many colours in an attractive pattern was the result of having varied coloured sheep. Shetland’s have 36 natural graded colours. Other projects may have evolved from bits left from other projects knitted for gentry. The Shetland people were poor - they could only keep the small thrifty Shetland, who survived in no small part on seaweed and bits of grass between the rocks of the hills. The Vikings were frequent visitors to the Shetland Islands, and one can see the physical relationship between Shetland Sheep and other North Country Shorttails such as Icelandic, Soay, Black Welsh Mountain and Finns as well as the Nordic influence in the designs. The finest wool from these North Country Shorttails comes from the smallest of the group - the Shetlands.

One of the Shetland Islands, “Fair Isle”, so christened, tongue in cheek, like Iceland or Greenland, is an inhospitable rocky island whose few inhabitants eked a living from the sea. The women and children were the crofters and as word spread of the fine wool and knitting, Shetland fine spun became popular with royalty and gentry. No doubt this meant the best, most uniform wool was used for commissioned work, while the tags, breech and bellywool were left over. The stained bits of wool were not to be wasted by this thrifty group of spinners, and the unsightly discoloured wool was dyed - no doubt with local flora and fauna including the many lichens prevalent on their rocky landscape.

Another of the Shetland Islands, Unst, the most northerly of the islands is the site of the finely spun and knitted delicate lace. As an industry, hand spun lace was replaced by the need for warm vests and socks for the troops during the First World War, but is continued today as a craft on a small scale. Mary Jane Peterson of Muness is the only remaining spinner of the very fine lace yarn, and she has won many prizes for her work. In former days, most crofts had a spinning wheel on which the day to day spinning for socks and work clothes was completed. The spinners of the fine lace yarn had a second wheel kept solely for the purpose of spinning lace weight wool. Generally, the fine yarn was spun in the south of Unst, and the lace knitting done in the north.
Sample Reproduction:

To reproduce these samples the following areas of consideration should be made:

♦ Handle - this will give ideas of what the possible fiber was so a similar fiber can be used. Handle can be ultra soft, silky, scratchy etc. Feel between fingers and test on a tender body part like under the chin.

♦ Staple length - will give information about the possible fiber used as well as help to give the same finished look and determine if woolen or worsted. Fuzz out an end and gently remove fibers to measure - a magnifying glass is useful to establish tpi on ply.

♦ Strength - pulling on a length will give an idea as the strength. Fibers that are very tender could be damaged in some way - for example finishing with chemicals.

♦ Luster - this will give clues to the original fiber used; for example high luster wool would likely be from a wool breed.

♦ Ply - two or three ply or single ply - untwisting an end will determine the number of ply.

♦ Direction of twist: s twist in single and z twist in ply or the other way around.

♦ Twist angle - use a protractor to measure angle. This will give information as to how to reproduce the spinning.

♦ Wraps per inch - this is done by wrapping the yarn around a ruler for 1" and counting the wraps. The grist of the yarn can be reproduced with this information.

♦ Twists per inch - Hold yarn against a ruler and count the number of bumps over 1" then divide by 2 for a 2 ply and 3 for a 3 ply.

♦ Woolen or Worsted- use a magnifying glass to determine how the fibers twist around each other. Worsted will lay parallel. Most important is the uniformity of the fibers length. Short and long fibers together is woolen. All the same length of fibers is worsted and somewhere in between is a semi worsted. Fuzz out fibers well to avoid breakage in removal to get an accurate read.
Spinning to calculated (required) t.p.i.:

To spin with controlled twist a consistent length of yarn must be drafted and fed towards the orifice for each treadle; the length depending on the degree of twist required and the twist-ratio of one’s spinning wheel.

To spin at any stated number of twists per inch, the number of inches of yarn to be fed towards the orifice each treadle is given by the number of inches per treadle equals the Twist-ratio of the Spinning Wheel divided by the Required Twists Per Inch

For spinning wheels with a multi-ratio whorl one can choose that Twist-ratio appropriate to the thread to be spun. If spinning a thin or high-twist thread, use a high Twist-ratio (i.e. smaller diameter of whorl). Aim for a comfortable feed-in rate. Having the Twist-ratio as near as possible to the required number of twists per inch will always mean a feed-in rate nearest one inch per treadle. If a thick (or low-twist) thread is wanted or there is a tendency to overt twist) use a low Twist-ratio (i.e. a larger whorl).

Most handspun yarns are plied. The spinning process sets up tensions in the yarn which then has a bias or tendency to try to untwist itself. Singles twist, termed 'spinning twist', is the twist imparted to the fibers, while twist inserted during plying or folding is termed 'folding twist'. The degree of folding twist relative to spinning twist is another factor in yarn design. For many purposes folded yarn should be a neutral or 'balanced' yarn. By this is meant a yarn with no residual tendency left to twist in either direction.

In the following it is assumed that singles are Z-spun while two yarns folded will be S-twisted, using the usual convention.

Suppose that two bobbins of thread are spun with Z-Twist of 12 tpi Z. If these threads are folded together with twist of 8 tpi S, this S-twisting partially 'undoes' the original twist of both constituent threads, removing 8 tpi Z from each, but leaving 4 tpi Z in each, or a total of 8 tpi Z in the combination. At the same time the plying has put 8 tpi S into the folded yarn. These two, being exactly equal and opposite leave the final thread with no residual twist in either direction -- a "Balanced Thread". A short way of expressing this formula is to say that for a Balanced Yarn:

Folding Twist = 2/3 of Spinning Twist. (8 is 2/3 of 12)

and the formula for balanced Yarn when plying 3 singles together would be:

Folding Twist (3-ply) = 3/4 of the Spinning Twist.

It is appropriate to mention in passing that the diameter of a 3-ply thread is approximately twice the diameter of the singles contributing to it.
Whorl ratio: determining the ratio of your wheel:

When spinning yarn on a spinning wheel, each time the flyer completes one revolution, it imparts one twist to the fibres. Each time the treadle is operated it rotates the driving wheel once but this rotates the flyer (and twists the thread several times). One can establish the number of times by sticking a marker on both driving wheel and flyer, and turning the wheel by hand, count the number of times the flyer turns for one complete turn of the driving wheel.

If for example, one turn of the wheel results in the flyer turning 7 times, the ratio of that wheel would be 7:1. The ratio of my Schaacht wheel is 9:1, 11:1, 13:1 and 15:1 on the small whorl. Therefore my wheel would twist each inch of fleece 11 times for each treadle. If my draft were 5 inches, and I wished to produce 11TPI, I would treadle five times for each draft. The Twists per inch divided by the Ratio of the wheel equals the number of treadles to obtain the required TPI. To calculate this accurately, the length of your usual draft must be established as one does not usually spin in one inch drafts.

To measure the Twists per Inch on plied yarn, count the number of "hills" over two inches; divide this number by 2 for the ply and divide by 2 again for the number of inches. A balanced plied yarn is 2/3 of the original twists per inch of the singles as the S ply untwists about 1/3 of the original z twist.

High Ratio Wheels:

Spinning high twist yarns results in a harder, stronger, smoother product. When a high twist yarn is required, a high ratio wheel is a definite advantage. You must be able to work quickly and evenly on a high ratio wheel, and control is very important. A high twist yarn can be heavier, depending on grist. It will be less warm as it has fewer air pockets. High twist yarns are less flexible and resist abrasion better - they are not as likely to pill. It should be noted that grist is very important as there is less coverage, especially in weaving. High twist yarns are very slow to absorb moisture. It will result in a strong yarn suitable for lace knitting. It will make a pattern show up better by giving light reflection effects to the finished project.

Some problems may occur: The spun yarn may become very thin and can break. They must be dried with tension on the yarn, as they can be kinky. Overtwisting can result in a snarled kinky defective yarn that is not pleasing. Variations in grist will be highlighted by the light reflection on the grist. If the ratio of your wheel is too low, a high twist will require lots of treadling on a very consistent draft.

A high twist yarn should be spun with a good quality fiber. Preparation is very important as you will have to work quickly, depending on how high the ratio of the wheel is. To make good progression, you have to relax, your tension should be set at just enough to draw in, and enjoy the reduction in the amount of treadling that you are required to count out! A high ratio wheel is excellent for high twist yarns, and to spin low twist yarns you must carefully treadle and work very, very slowly.
Shetland Sheep

The Shetland's roots go back over a thousand years, probably to sheep brought to the Shetland Islands by Viking settlers. They belong to the Northern European short-tailed group which also contains the Finnsheep, Norwegian Spaelsau, Icelandics, Romanovs, Jacob, Soay and others.

Today they are considered a primitive or "unimproved" breed. This means that although they are small and relatively slow-growing, they maintain natural hardiness, thriftiness, easy lambing, adaptability and longevity. Shetlands survived for centuries under harsh conditions and on a meager diet, although they do very well under less rigorous conditions. Having retained most of their primitive survival instincts, they are easier to care for than many of today's "improved" breeds.

Shetlands are one of the smallest of the British sheep. Rams usually weigh 90 to 125 pounds and ewes about 75 to 100 pounds. Rams usually have beautiful spiral horns whereas the ewes are typically polled. They are fine-boned and agile and their naturally short, fluke-shaped tails do not require docking.

They are a calm, docile and easy-to-manage breed. Most respond well to attention and some even wag their tails when petted! In addition, the rams are usually safe to be around.

Classified as endangered by the Rare Breeds Survival Trust (RBST) in 1977, Shetlands are now enjoying renewed favor and numbers.

With the assistance of the RBST, Col. Dailley of the African Lion Safari in Cambridge, Ontario, Canada, imported 28 ewes and 4 rams from the Shetland Islands in 1980. This is the only importation of Shetlands into North America documented by the RBST. Due to tightened importation restrictions, it is unlikely that any more can be brought in during the near future.

Unrecorded by RBST, but equally important, was Jean Flett's grandfather importing 8 ewes and 4 rams when he emigrated to Canada in the 1940's. The Flett flock is now recognized by the North American Shetland Sheep registry as purebred and registerable.

Tut and Linda Doane of Vermont brought the first Shetlands into the U.S. from the Dailley flock when the 5 year old offspring of the original imports were finally released from quarantine in 1986.

Shetland Wool

A very important characteristic of the Shetlands is their beautiful wool, upon which the world-renowned Shetland woolen industry is based. Shetland wool is one of the finest and softest of any British breed, with a Bradford count usually in the upper 50's to lower 60's and an average fiber diameter of 23 microns.

This soft, yet strong and durable wool is a delight to spin and is ideal for knitting. It was traditionally used in Shetland Shawls so fine they could be drawn through a wedding ring!

Fleeces usually weigh between 2 and 4 pounds and have a staple length of 2 - 4.5 inches. Occasionally, the wool will shed in the late spring as it did generations ago when it was "rooed" or pulled off by hand.

Shetland wool comes in one of the widest ranges of colors of any breed. Besides the white, which dyes very well, other colors include light grey, grey emsket (dusky bluish-grey), shaela (dark steely-grey resembling black frost), musket (pale greyish-brown), fawn, moorit (shades between fawn and dark reddish-brown), moiget (light moorit), dark brown and pure black. There are these 11 main colours as well as 30 markings, may still bearing their Shetland dialect names. A chart of Shetland colourings follows overleaf.
Old Shale Pattern

Multiple of 12 stitches.

Note: Row 4 can be knitted or purled, depending on whether or not you want a ridge of garter stitch. A garter ridge is often worked in old Shetland knitting, but other traditional knitters prefer to work this row in stockinette stitch.

Row 1: Knit
Row 2: Purl
Row 3: (knit 2 together) twice, (yarn over, knit one) four times, (knit 2 together) twice.
Row 4: Knit or Purl – see note above.

Wavy-edged stitch patterns are often used for plain-knit, everyday shawls and hap scarves. In the Shetland Isles, these are usually plain garter stitch combined with openwork borders. Of all the wavy-edged patterns used for haps, Old Shale is certainly the most common. The shale patterns are named for the way the waves look as they wash up upon a shale shoreline. Hap scarves and stoles are rather sturdily made. No edging is used – the wavy pattern itself creates the scallops along the cast-on or bind-off edges. To prevent the cast-on edge from looking different from the bind-off edge, some scarf makers knit two 'ends' and graft them in the middle. Both ends are then cast on edges and thus uniform in appearance.

Long-Tail Cast On

Measure off a length of yarn three or four times as long as your cast-on edge is to be., make a slip knot and place it on your needle. Hold the needle in your right hand, and the two yarn ends in the left as shown. Insert the point of the needle in the thumb loop, pick up the thread on your index finger, and draw it through the thumb loop. Drop the thumb loop and tighten the cast-on stitch on the needle. Repeat.
Shetland Lace Comparative Study
Margaret Sjostrom

Shetland Colour Chart
Main whole colours: Based on the main colour pigments, eumelanin and phaeomelanin and the three primary colours, blue, yellow and red.

Shetland Dialect
Shaela
Emsket
Musket
Mioget
Moorit

English equivalent
Dark Steely-grey
Dusky bluish-grey
Light greyish-brown
Light moorit (yellowish-brown)
Light to dark reddish-brown