

W is for Wool By Wendy Dennis

“Wool is wool, lady” said the customs officer to a travelling spinner. Sacrilege! With 1,000 breeds world wide, and at least 40 of those in Australia, wools for handcraft use can be as different as chalk from cheese. “And even within a breed flock,” the spinner indignantly said “every fleece spins up differently”.

Australia’s economy was **built** on sheep and wool. The first sheep in the colonies were small fat-tailed, hairy sheep imported from Bengal in 1788—some were eaten by dingos, some were later crossed with Merinos. Then in 1793 Captain Waterhouse imported 26 Spanish Merino sheep from Capetown (South Africa), of which Captain McArthur bought eight and successfully began breeding the first Australian Merino sheep (at Parramatta and later at Camden Park). By 1799 there were 2,457 sheep in Australia. In 1801 a further 6 Spanish Merinos (from the Royal flock of George VII) arrived.

Of the forty recognised breeds of sheep in Australia, the most recognised or popular ones for woolcraft fall in the categories below (the rule of thumb is, the lower the micron the finer, more crimped and shorter staple length the wool is):

Australian Merino	Crimps / 2.5cm	Micron	Length cm/year
Ultra fine (Sharlea)	15+	14 & finer	5 - 6
Superfine	14 – 15	19 & finer	5 - 6
Fine (Saxon)	12 – 13	21 – 22	7.5
Medium (Peppin)	10 – 11	23 – 24	8 - 11
Strong	7 – 9	25 – 26	9 – 12
Extra Strong	6 - 7	27 – 30	10 - 12
Australasian breed			
Polwarth	9 - 10	22 – 25	10 - 13
Corriedale	4 - 7	25 – 32	15 - 18
Perendale	4 - 5	28 – 32	10 - 13
Coopworth.	2 - 4	32 – 36	20 - 24
British long wool			
Lincoln	2	38 +	20 +
Border Leicester	2	30 – 36	20 +
English Leicester	2 - 3	33 +	20 +
Romney		31 – 35	15 - 20
British Short Wools			
Dorset Horn	4 - 7	25 – 30	8 - 10
Southdown	7 - 8	23 – 25	6
Suffolk	5 - 8	24 – 27	5 - 8

1. Crimps per 25mm—is the number of waves in each fibre.
2. The diameter is measured in microns (one micron is 100 millionth of a cm).
3. The length of the fibre in the fleece (the staple) is measured in cm over a 12 month growing period.

So let’s look at the wool *factory*—the sheep. At any time in the country while sheep quietly graze, a fibre worker contemplates ways to spin and weave their wool. Sheep

are selective grazers who prefer the green grass tips but don’t mind oats, barley and hay in times of drought. Merinos, the choice of selective woolcrafters, can travel 4km for water in a day. They graze into the wind but not on hot days. They grow wool 24 hours a day from up to 9,600 wool follicles per square centimetre of skin. A fine Merino fleece produces 100 million fibres. That’s 8,800 km of wool fibre per year and joined end to end would tie a bow around the world. In 1988 Australia had 160 million sheep producing quarter of the world’s supply of wool.

As production costs continue to rise, new technologies are being experimented with, such as robotic shearing & chemical de-fleecing (where shearers become *pluckers*). Some sheep wear specially designed woven coats. These coats assist in producing soft wool free from dirt, grass seeds, vegetable matter and sunburnt tip, yielding up to 3.5% more wool, with a longer staple. Remarkably, water comprises 60% to 70% of sheep weight, and a fleece is nine parts air, to one part fibre.

As any non-agrophobe will know, anything moving beyond the flyscreen on the back door in Australia becomes ground zero for 15,000 flies on standby. Unfortunately, sheep go without flyscreens on their backdoors and loose skinned sheep such as merinos become prone to the often fatal *flystrike*. Mulesing, which is removing some loose skin, was a way of preventing flystrike and has become a much discussed topic worldwide. Most Australian plain bodied sheep are not mulesed and every effort is being made to prevent flystrike by breeding programmes and well-timed husbandry over several generations.

Wool is an amazing and complex structure with great spinning capacity, but as a living fibre, it is influenced by climate & nutrition. The secret of wool lies in the structure of its fibres. Can we mention keratin, peptide chains, primary & secondary follicles, medulla and chemical composition of carbon, hydrogen, nitrogen, oxygen, sulphur, phosphorous, iodine, cholesterol? All these elements contributed in preserving the oldest woollen carpet in the world, as discovered inside the frozen tomb of a nomadic tribal chief at Pazyryk in southern Siberia, dating back to the fifth century B.C.

That’s wool.

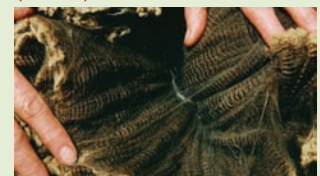
Wool is hydrophilic. It has the power to absorb, retain and release up to 30% of its weight in moisture. “And it was so: for he rose up early on the morrow, and thrust the fleece together, and wringed the dew out of the fleece, a bowl full of water” Judges 6:38

Wool fibres are covered with tiny outer scales pointing

English Leicester Assoc. (below)



Polwarth (below)



upwards and overlapping like fish scales, imparting **felted power** when rubbed together. Modern day technology can shrinkproof wool by coating the scales. St Clement is said to have discovered felt after putting loose wool in his sandals for comfort on a long journey. The moisture, movement and warmth transformed the wool into felt.

Crimp (those waves in the staple) grows closer together in winter, then relaxes in summer, giving your yarn elasticity or bounce. The British short wools have the most elasticity, which is great for socks. The crimp in wool also helps to absorb odours and noise in heavy machinery and stereo speakers. Fibre can be stretched up to 20% of its length, and return to its original length without damage. Hand spinners strive for plied yarn where the twist corresponds to the crimp of the fleece. You can bend wool 20,000 times without it breaking (silk breaks after 1,800 bends) and it has a low degree of **static electricity**.

Sheep are often misunderstood when they stand in full sun on a 37°C day with shade just four hooves away. But wool **insulates** against heat & cold even when the wool is wet. Air is trapped between the fibres, so you don't feel hot & clammy during summer and it helps to hold in heat during winter.

Staple length can be from 5cm – 25cm depending on breed, pasture and from what part of the body. Wool can also contain other fibres, such as kemp and gare (both are short, thick, chalky white fibres) which spin and dye poorly.

Softness, silkiness or the feel of the fibre is known as *handle*. The finer or lower the micron of the fleece, the softer the wool will be. Lambs wool is beautifully soft but it will be short.

To test the **strength** in wool for handspinning one only needs to gently draw a pencil-sized staple over a single hand carder, opening individual fibres without any break occurring. Here's the test for soundness in full as described by Henry B. Smith in 1926 for commercial use: "Take the extreme tip of the top end of the staple between the thumb & forefinger of the right hand, letting the middle finger rest on top of the forefinger; then take the other end of the staple between the thumb and forefinger of the left hand and smartly draw the third finger across the centre of the staple."

Consider **colour**. Traditional white fleeces are white and bright, but since the early 1970's naturally pigmented wool, from pale silver grey, through to black and dark chocolate and cinnamon have been bred primarily for the woolcraft market. "Oh, for the golden fleece" one

overhears among the coloured sheep breeders.

The **lustre** of British long wools is famous—fantastic for hand dyeing effects. Lincolns, English & Border Leicesters are the choice for handcraft use. "I softly spin washed English Leicester with such lustrous long locks, with plenty of air for a very soft and silky yarn" says Dorothy Robb of Melbourne. And renowned English Leicester sheep breeder Ethel Stephenson adds "It has luxurious handle and lustre. Put it in a dye pot—sheer brilliance. It's the 12 inch length, ideal hair for traditional, modern and country dolls."

It is amazing to think that wool only accounts for 5% of all textile fibres used in the world. Let's hope the **International Year of Natural Fibres** alerts the public mind. Australia produced 1,232,084 tonnes of wool in 2007, worth \$2,709,296,448 in export dollars.

One thing for sure, **wool isn't made from oil**. We can pass Peakoil and still keep warm. Woolgrowers are conscious of the effect they have on global warming and climate change with methane producing sheep, that leave carbon in our atmosphere. Sheep are run to maximise the efficiency of the land and climate, leaving as little carbon as possible. Woolcraft is the perfect way to help our climate for future generations by either buying local wool or running a few *lawn mowers* and hand spinning or felting their natural colours.

Select the appropriate type of wool and consider the softness, warmth, wearability and bulkiness of the fleece. Look through the fleece. Look for any vegetable matter, staining, colour, variability of fibre diameter, felting ability, weathered tips, age, breed, medullated fibre content. Consider the staple length and strength, the type, style, character, handle, density, cohesiveness, crimp/elasticity or bounce and lustre of the fleece.

Today, all wool crafters need is a CD and a chop stick to create yarn on a drop spindle. With global warming and climate change, increased leisure and a rise of enthusiasm in grassroots living what better way to help the world than create and wear a natural hand-created woollen garment. Wool in handcraft is fun. It's feasible. You can create fabulous, fantastic, favourite, fashion fabrics from a fleecy flock for sure and feel the freedom of the future.

Wool for all beginners, All Wool for all spinners.

Further Reading

Morris, L. (1994) *The Handspinners Companion*, PenFolk Publishing, Melbourne; Proceedings of the 5th World Congress on Coloured Sheep, BCSBAA (Vic) 1999; Proceedings of the World Congress on Coloured Sheep, U.S.A. 1989, Black Sheep Press; *The World of Coloured Sheep*, 6th World Congress on Coloured Sheep, New Zealand 2004; Hawkesworth, A. (1910) *Australasian Sheep & Wool*; National Geographic Vol 173, No.5 May 1988

Romney (below)



Polwarth (below)



Lincoln sheep (below)

