

These waves, or bends, are called the "crimp" of the wool. When the waves are very close together, the crimp is said to be fine, so that fine wool has fine crimp, and coarse wool has coarse crimp.

But there is another difference between wool and hair. If you get a single fibre of wool, and take hold of the end that grew next to the body of the sheep, and then draw the fibre between the finger and thumb of the other hand, you will find that it slips through very smoothly. But if you take hold of the other end of the fibre, and then draw it between the finger and thumb as before, you will find that it seems to catch, and does not slip between the fingers nearly so easily. Why is this? It is because every wool fibre has hundreds of very, very small scales on it, something like the scales on a fish, only so small that they cannot be seen without looking at the wool with a microscope, which makes the wool fibre appear many times larger than it really is.



Fig. 92. Wool fibre, showing scales.

These tiny scales all point towards the outer end of the wool fibre, so that when you took hold of the outer end of the fibre and tried to draw it between the fingers of the other hand, the points of these little scales caught on your fingers and made it hard to pull. The picture, Fig. 92, shows how these scales grow on the wool fibre, but the fibre and scales are made to appear very much larger than their natural size. Hair also has scales upon it, but the points of the scales on the hair are rounded, and they lie so close to the hair that they do not catch hold of anything they rub against; while the scales on the wool fibre have sharp points and rough edges, so that they catch and cling to everything they touch. This difference in the kind of scales, is the most important difference between wool and hair.

Now, when the weather grows warm in the spring, the sheep does not need its warm winter coat and so the farmer clips it all off, or shears the sheep, as we say. The wool is then sold, and is sent to the large factories where it is made into all sorts of clothing, blankets, yarn, and other goods.

Before it is made into cloth, the wool is twisted, or spun into yarn. If the wool fibres had no crimp, they would not stay tightly twisted together, and the yarn would be of very poor quality. Then the yarn is woven into cloth by machines, and the way the wool is handled in spinning and weaving causes the little scales, which we have described, to catch into one another, and the wool fibres become all tightly matted, or felted together, making a firm, strong piece of cloth. From what has been said, you will see the use of the crimp and the scales of the wool. The crimp makes it possible to twist the wool into yarn which will not easily untwist again, and the scales cause the wool fibres to stick together, or felt.

It would take too long to describe all the different things that can be made out of wool; so we shall mention only a few of the principal classes