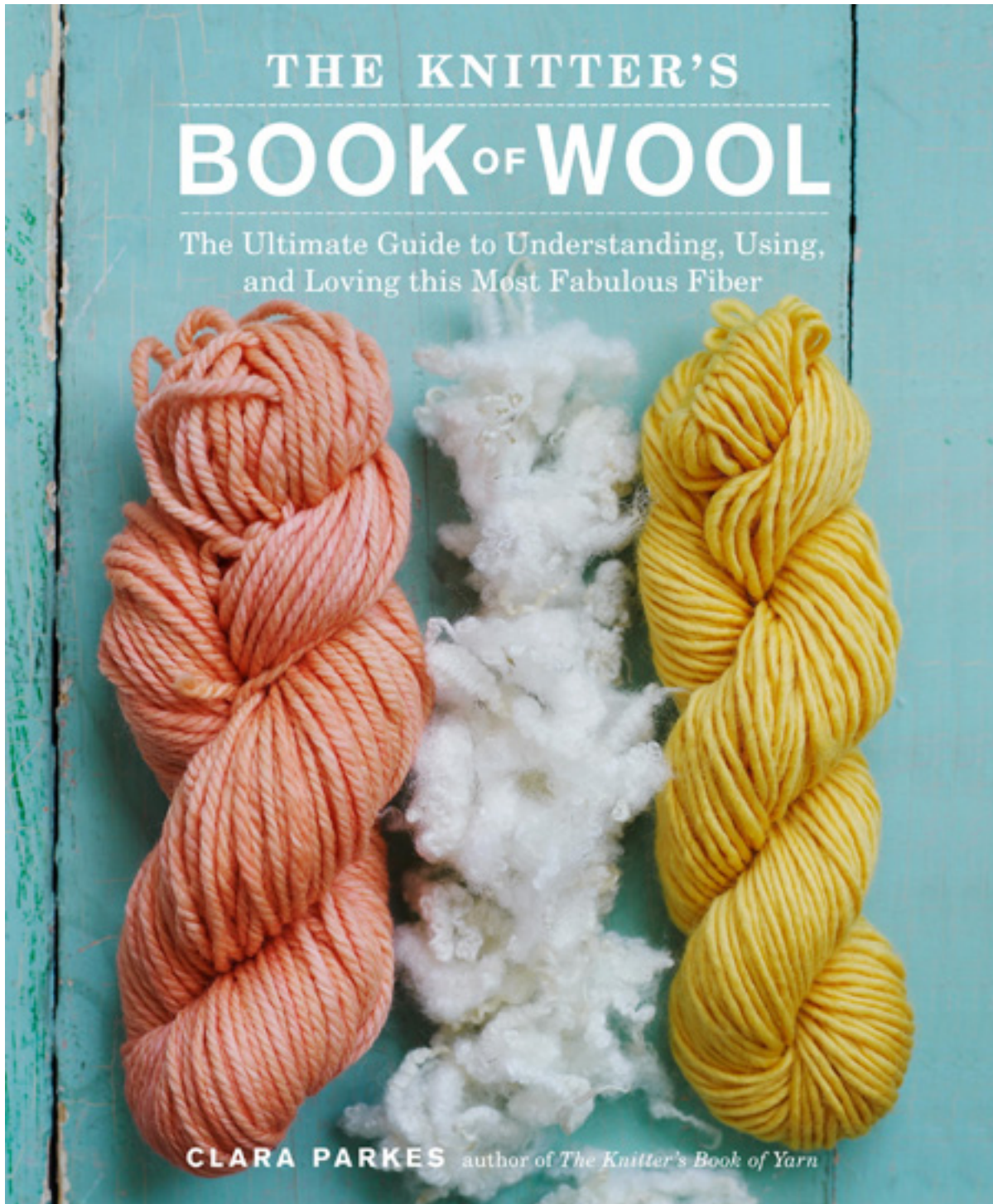


by Clara Parkes



The quality that matters to most knitters these days is touch. Specifically, soft touch. If we want to experience everything wool has to offer, we must begin by adjusting our expectations. In our quest for softness, most of us have been consuming a pretty substantial diet of the yarns in which all the fibers have been blended together into a rather standard, homogenous thing called “wool.” Any

fiber that doesn't qualify as super-soft has been discarded, and among those wools that have made it into the mix, any unique traits of specific breeds have likely been toned down for the greater good of the blend.

Our hands have been trained to embrace soft and reject everything else. When you start experiencing different breeds on their own, you'll immediately begin to feel a lot of the "everything else"—yarns with greater vibrancy, texture, visual appeal, and what I think of as "crunch." There's an important distinction between crunch (picture a freshly baked loaf of whole-grain bread) and scratch (that same loaf of bread left sitting out on the kitchen counter for a few days). Crunchy yarns are healthy and vibrant, with fibers that have persistence and personality. In a garment they stand their ground, keep you warm, and wear well.

The so-called "scratchy" wools, on the other hand, are often simply a reflection of a sheep's genetic traits. If the sheep originated in a culture that was more interested in meat and milk than in fiber for underwear, then the animals simply weren't bred for softness and their fiber is not suitable for handknitting yarn. Sometimes, like that stale loaf of bread, a yarn can also become scratchy by human intervention—in which case overzealous processors, and not the animals themselves, are often responsible for the dry, brittle, and lifeless wool yarns you may encounter.

Among those breeds that are suitable for handknitting, remember that each breed has its place and purpose among our projects. Not everything needs to be knit in the softest, most delicate wool. In fact, many projects prefer to be made out of something more durable. Take, for example, a sweater you know you'll wear over a turtleneck in winter. Or mittens or a hat that you need to keep you warm. Perhaps a felted doorstop, a tea cozy, or a heavier coat. These kinds of projects long to be made out of hearty, warm wools that are otherwise too robust for next-to-skin wear. In contrast, using superfine baby Merino on such projects would be like using embroidery scissors to cut heavy paper.

At the other end of the spectrum are things like scarves, sleeveless shells, form-fitting sweaters, and baby booties—the kinds of high-touch, low-abrasion garments we want to be as soft as possible because they'll be sitting directly against our bare skin. Finewools such as Merino thrive in these kinds of projects, whereas a sturdier farm wool would be overkill—like using a power saw to cut that same piece of paper.



Lillia Hyrna

Shawl by Shelia January, from *The Knitters Book of Wool*

But the ultimate decision on softness lies in the hands of the beholder. When it comes to touch, each person's perception of crunchy and scratchy varies dramatically. I know some knitters who break out in hives if they touch anything but the finest, purest Merino, whereas others will happily wear socks that could double as pot scrubbers. My advice would be not to discount anything until you actually sit down and work with it for a while. Each new breed brings a new knitting experience. Adjust your expectations and you can start to have fun sampling the nuances of each breed, enjoying the nutrients they bring to your fiber diet. Yes, wools from other breeds may feel different than what you're used to—and that's the whole point.

### **The Dance of Diameter and Softness**

Over the years, people have come up with many units of measurement to help make the intangible notion of softness, or fineness, more tangible. The problem is that until recently, we relied on our fingers to determine fineness, and nobody could agree on one common measurable unit. Several systems determined a fiber's fineness by the number of hanks you could theoretically spin from 1 pound of clean fiber—one system was based on 300-yard (274-m) hanks, another on 560-yard (512-m) hanks, and yet another on 1,600-yard (1463-m) hanks. Other systems relied on yet more vocabulary and seemingly random numbers, like the Denier and Grex systems, the latter of which includes wraps of 700,000 yards (64008m), 1/7,000-yard (0.0001m) wraplets, and 1/700-pound (0.0648g) grains. Whew!

The advent of high-powered microscopes brought order to the chaos, and the micron became the most common international unit of measurement for fiber fineness. One micron is one millionth (0.000001) of a meter, or 1/25,400 of an inch, and it is often represented with the Greek letter mu ( $\mu$ ). You'll see more about micron counts when we reach the breeds section (page 37). For now, just remember that the smaller the fiber diameter, or micron count, the finer the fiber. The higher the micron count, the rougher the fiber.

How do they measure the actual diameter of a fiber, anyway? Perhaps with an extremely tiny measuring tape? Nope. They use electro-optical and image analysis machines, which allow technicians to measure 2,000 fibers from a fleece and generate accurate diameter calculations in a matter of minutes. A newer machine called the Optical Fiber Diameter Analyzer (OFDA) can analyze 4,000 fibers in 30 seconds and includes a portable unit that can be set up right in a shearing pen. If you've been to a major fiber festival, gone to the fleece competition area, and seen people in white lab coats standing next to impressive-looking machines, those people were no doubt measuring the microns of different fleeces.

While the micron reigns supreme in the handspinning world, the older systems haven't completely gone away. The Bradford count system—also called the English worsted yarn count system or spinning count—is still widely used. A truly subjective measure of fineness, the Bradford count is based on the number of 560-yard (512-m) hanks theoretically spun from 1 pound (.54kg) of clean wool roving, and the resulting number has an "s" after it. The idea behind the Bradford count

system is that the finer the wool, the more fibers per pound, which means that more yarn can be spun from that pound of fiber. The rougher the wool, the thicker each fiber, and the fewer fibers per pound, which means less yarn can be spun from that pound of fiber. For example, a fine Merino might be graded anywhere from 80s to 64s, meaning one could spin between 80 and 64 hanks of yarn, each with 560 yards (512m), from 1 pound (.54kg) of clean fiber. Much of the standard generic wool on the market falls in the 62s to 56s range.

Developed before technology existed to evaluate fiber diameter, the Bradford count system was based partly on the notion that there was a direct correlation between a fiber's fineness and its crimp pattern, a theory that has since been disproved. Rarely, if ever, were fibers actually spun at their optimal Bradford count; it is mostly a theoretical measure.

To ground this theory in reality and make it more objective, the U.S. Department of Agriculture (USDA) has assigned specific micron ranges to those Bradford wool grades, resulting in the USDA wool grades. These numbers get more precise. The average fiber diameter of an 80s wool, for example, is 17.70–19.14 microns, while that of a 56s wool corresponds to an average fiber diameter of 26.40–27.84 microns. But even these numbers still refuse to be pinned down too precisely—the USDA rating allows for a standard fiber diameter deviation of 7.59 microns within any fleece.



*Risti Mittens*

by Nancy Bush, from **The Knitter's Books of Wool**

Most of us probably won't be measuring our yarn down to the tenth of a micron anytime soon. But understanding the language of softness, as interpreted through the Bradford and USDA wool count systems, can help us set appropriate expectations for how a particular kind of wool is going to feel and what it is most eager to become. Every wool has an ideal purpose, and not every purpose can be met by the same wool. That's what makes wool so much fun.

### **Variety is the Spice of Life**

Nature has its own checks and balances system that relies on genetic variety. Our focus on softness, whiteness, staple length, and strength has put many older breeds at risk of extinction. What remains—highly bred finewool Merinos—has an increasingly limited genetic base lacking untold traits for everything from disease resistance to adaptability to changing climate conditions. As with heirloom versus genetically modified seeds, we risk not knowing what we've lost until it's too late. Knitters can slow the trend by seeking out and supporting other breeds. If we keep going for the white flour, we'll lose the other grains entirely. But if we open our minds and hands to variety, who knows where it may lead us?

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