ENCYCLOPEDIA OF TEXTILES

JUDITH JERDE

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Encyclopedia of Textiles

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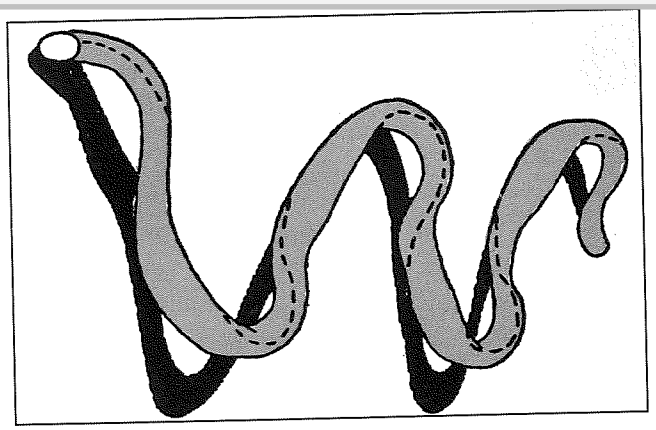
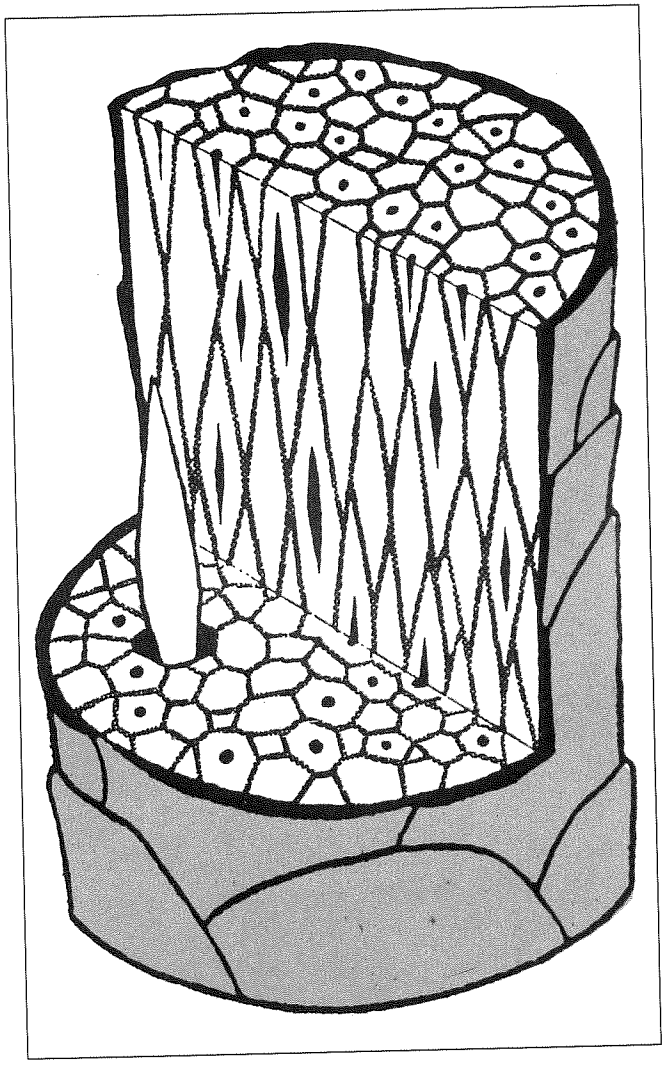
as keratin are composed of carbon, hydrogen, oxygen, nitrogen and sulfur, whereas the cellulosic fibers from which many textiles are made do not contain the latter two elements. When viewed through a microscope, wool fiber looks like a rod that gently tapers from root to tip, and is unmistakably characterized by scales, which are called epithelial scales. The scales are important, because they act as a protective covering for the fiber, which causes wool to be very resistant to wear. The scales are covered with two membranes: the epicuticle and the exocuticle, which greatly affect the manner in which dyes are received by wool. Until the advent of the scanning electron microscope, the presence of these two very thin membranes was unknown. Now, as a result of their discovery, much progress has been made in the washing and dyeing procedures that are possible with wool.



Crimp The Wool Bureau, Inc.



Wool cross section The Wool Bureau, Inc.

In contrast to cotton and other cellulosic fibers, wool is distinguished also by crimps in the fiber, sometimes as many as 30 per inch of length. These crimps create many tiny air pockets which impart to wool a resilient, spongy texture. This in turn gives wool a great degree of thermal insulation per weight of fabric. It also gives wool the ability to absorb a great deal of water before it becomes saturated. This is a source of additional warmth in a garment, since the wearer remains dry until the fabric reaches saturation.

Wool has been valued for centuries because of its unique characteristics that set it apart from other fibers. It resists dirt, it is flame resistant, and because of its absorptive qualities for water it resists the build-up of static electricity. Further, it resists both tearing and abrading, as well as snagging, pilling and crocking.

History

There is historical evidence that wool is one of the first fibers to have been made into textiles. It is well known that wool existed in Babylonia as early as 4000 B.C. Indeed, it is interesting to note that the word Babylonia means Land of Wool. Sheep were raised and sold in ancient Mesopotamia to such a large extent that wool making could be described as a major industry. Also of note is the fact that the Sumerians sold wool throughout the known world in these early times. Around 2000 B.C., the Phoenicians not only traded wool but also introduced the art of weaving in the Mediterranean area.

In A.D. 45, the Romans are credited with having bred a new strain of sheep that would come to have great and