

Dictionary of Textile Terms.

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Wild Silk: Silk from the cocoon of a silkworm raised in its native or wild state. Like true silk, the wild silks are found to consist of a double thread when magnified, but the threads, instead of being structureless, are composed of individual fibrils, recognizable by decided, parallel, longitudinal striations. Again, they are more quadrangular and less circular in section, each bundle of fibres being of paralleloiped form, and each pair of such bundles attached together on their narrow side. Only very few of the wild silkworms produce cocoons of the same regularity as those of the true silkworm. On the contrary, they are more given to interrupt the spinning of the envelope, and thus produce several threads, which get mixed together; many of them plait leaves and twigs in with the cocoon, on which account the majority of wild silks are difficult or impossible to wind. On the other hand, they are highly suitable for spinning into yarn after the manner which is used with spun silk. The advantages of wild silk are: (1) Greater durability, by reason of the thicker condition of the threads; (2) productivity and cheapness of preparation, the larvæ not being necessarily grown in breeding stations, but thriving in the open and yielding two to eight crops of larger cocoons in the year; (3) absence of waste in dyeing, the wild silks not being encumbered with sericine, and consequently not requiring to be scoured. Against the undeniable advantages of wild silks, which have founded and called into existence one of the most promising branches of the textile industry, must be set the following drawbacks: (1) Darker color which cannot be removed by any means short of a powerful bleaching agent; (2) inferior lustre; (3) inferior softness; (4) defective elasticity; and (5) coarseness (average diameter, 0.050 mm.).

The most important varieties of the wild silk of commerce are: (a) Tussah silk, (b) Eria silk, (c) Fagara silk, and (d) Yamamay silk. Of these Tussah is the most valuable, *i. e.*, the one most extensively used.

Under the microscope the fibre is seen to be very broad, while the cross-section appears wedge shaped. (Distinction from cultivated silk.) Longitudinal striations running obliquely across the fibre are plainly visible. Irregularly occurring coarser striations due to bundles of circular threads may also be noticed. The sericine cannot readily be distinguished from the fibroin. The narrow side of the fibre appears dark gray with pink or light green spots, while the broad side is irregular in thickness, the thinner parts appearing bluish white or light brown.

Tussah Silk is the fibre spun by the Tussah moth (*Antheræa mylitta*), a large and beautifully-marked nocturnal moth, measuring about 8 inches across the wings, and widely distributed throughout India and Southern China. The cocoons, of

large size and brown color, are suspended by stem-like supports from convenient twigs on the trees harboring the larvæ. The somewhat hard cocoons can be unwound with ease, after the agglutinant sticking the threads together has been dissolved by an alkali. Nevertheless the majority of Tussah cocoons are dealt with in the same manner as employed in spinning chappe silk. Tussah silk is of a light brown color, with a vitreous lustre and somewhat stiff, the fibres being not over regular, and measuring on the average 0.005 mm. across. It is mostly used in the manufacture of velvets, plushes and draperies.

Eria Silk is produced by the East Indian ricinus moth. Attempts made in Europe to reel Eria cocoons have not proved very successful, and consequently they are usually spun in the same way as spun silk. Morphologically and in chemical behavior this silk greatly resembles Tussah.

Fagara Silk comes from the Atlas moth, the largest nocturnal moth known, since it measures over 8 inches across the wings. It is common throughout Eastern Asia, and feeds on various plants; attempts have also been made to breed it in Europe. The light brown cocoon measuring nearly 5 inches in length, is open at both ends, so that the moth can escape without injuring the cocoon. This silk is also like Tussah.

Yamamay Silk comes from the Yamamay or Japanese oakleaf moth and most nearly resembles true silk, though somewhat coarser, the average diameter being about 0.027 mm. The larva spins an unusually regular cocoon of a beautiful pale green color, of which the silk can be readily unwound, and is preferred in Japan for use in figured fabrics along with true silk.

Willesden Canvas: Plain woven cotton fabric, rendered waterproof by treating it with solution of ammoniacal copper oxide and pressing it between hot calenders.

Willeying: The English term for a process known in Huddersfield as *teasing*; in Bradford as *devilhole* or *devilling work*, and in the United States as *shoddy picking*. It is performed by a machine which tears (opens) the material asunder.

Willow: The class of heavy machines used in cleaning and opening wools, low-grade cottons, and other fibres, known in the United States as "Duster." The machines used for these different materials vary in size, but are essentially alike, and consist of a revolving cylinder, armed with spikes, in a cylindrical casing also armed with spikes. A part of the casing forms a grid or sieve, through which the waste falls by gravity or is drawn by a suction blast.

Willow Fibre: Obtained from the bast of young willow rods by steeping the bark in strong lye solution; used for twine and bags in Central Europe.

Willow'ng: The shaking out of the material by means of the willow, in order to open the fibres and remove sand, dust, vegetable, etc., impurities present in wool, waste or other fibres.

Wilton: Heavy machine-made carpets and rugs, with a cut warp pile. The number of colors used in a pattern is limited, each color having an extra warp. There are three binding picks to each row of pile.

Wilton Carpet: A velvet pile-warp carpet, resembling Brussels in its construction, but with the looped pile cut; so named from being made originally at Wilton, England.

Wilt Sheep: A variety of English sheep peculiar to Wiltshire regarded as a hybrid race of English sheep.

Wimberly: Commercial variety of late maturing upland cotton, the long staple forming large bolls

Wince: A corrupt form of winch. In dyeing, a simple apparatus for changing a fabric from one dye-vat to another. It consists of a reel placed over the division between the vats. The fabric, placed over it and turned either way, is by means of turning this reel transferred from one dye to another. When several vats are placed in line, and contain dyes, mordants, soap-suds, water, etc.; a wince or reel is placed between each two, and the combined apparatus becomes then a wincing-machine. In such a machine the vats are called wince-pots, or wince-pits.

Wincey: A strong fabric composed of cotton warp and woolen filling, woven plain or twilled and made in different weights; used for men's wear.

Winder: A machine for winding thread, etc., being named according to the work they are designed for, like bobbin winder, cop winder, etc.

Winders Knot: A knot frequently made at winding but which knot will not stand challing of reed and heddles; it will slip, since one of the ends is simply passed through the knot formed on the other thread. To distinguish from a weavers knot and which will not slip while passing heddles and reed.

Winding: The operation of winding yarn, whether hanks or cheeses, onto bobbins preparatory to weaving.

Windsor Brilliant: A washable English cotton dress goods, finished with a high lustre.

Windsor Duck: Printed duck, made in England for summer dresses.

Windsor Louisine: Fine English washable, printed cotton dress goods.

Winter Laces: Laces of close and firm texture, as Alençon, macrame, etc., irrespective of make or design.

Winter Stain: A dingy brown color of the fleece of wool, which is an indication that the wool is not in a thoroughly sound state. Such fleeces are thrown out by the wool-sorter, being suitable only for goods that are to be dyed black or other dark colors.

Wiper: The English term for tappet or cam.

Wiry Wool: Wool that is thick, straight and hard in fibre. This characteristic indicates a very objectionable type of badly-bred wool.

Witch: See Dobby.

Witch-loom: A loom containing a witch or dobbie for its shedding motion. Also called *Dobby-loom*.

Witch-stitch: Herring bone embroidery stitch.

Woad: This dyeing matter, *Isatis tinctoria*, which was employed from the most ancient times, is now nearly unknown in this country. It is yet cultivated in some parts of Europe, where it goes under the name of *pastel*. The coloring-matter it contains is chemically and practically the same as indigo; it is still used in setting the indigo vats for dyeing wools, but always in conjunction with indigo. It appears that the woad plant, as sold to the indigo dyer, readily enters into fermentation, and in that state is useful in deoxidizing or reducing the indigo to the soluble condition; but it contains very little coloring-matter itself, so that it was hardly possible to dye a deep blue with it.

Woaded Colors: This term implies that the wool has been dyed in the indigo vat. A woaded blue should be dyed with indigo alone, but in the case of woaded blacks, greens, and browns, the indigo is necessarily combined with other dyes. The term has lost most of its significance since the introduction of the alizarin and other fast dyes.

Wonderful: A cotton plant originated by J. H. Jones, the originator of several other varieties bearing his name. This is similar to the Jones Long Staple, but has a larger boll and a smaller seed, with a longer and finer staple. Lint 28 to 30 per cent, staple 35 to 40 mm.

Wongshy: The pods of a species of *Gardenia* (*G. grandiflora*) grown in China and yielding a large quantity of yellow dyestuff, which colors silk and wool without mordants.

Wood Fibre Lace: Applied to all laces made of wood silk (artificial silk).

Wood-pulp Silk: A form of artificial silk resulting from the action of sulphuric and nitric acid upon cellulose or woody fibres.

Wool: A term sometimes applied to the bar-trees (hand-warping stand) upon which warps are made, but more frequently a term (now almost obsolete) synonymous with weft or filling.

Wool: The fine, soft, curly hair which forms the fleece or fleecy coat of the sheep and some other animals, as the angora goat, the llama, alpaca, vicuña, and the camel. The wool or fleece of the sheep furnishes the most important material for clothing in all cold and temperate climates. It is softer than the actual hair; also more flexible and elastic, besides having a wavy character.

Chemically wool consists of keratine, a substance composed of carbon, hydrogen, nitrogen, oxygen and sulphur. It differs from hair in its physical structure, the exterior scale structure of wool being most marked while that of hair is only faintly indicated; it is naturally less lustrous and more flexible than hair. Its length, as placed on the market, varies from about an inch up to sixteen inches, but if allowed to grow without restraint, the fibres may attain a length of something like forty inches. In diameter of fibre it ranges from about one five-hundredth part of an inch up to one eighteen-hundredth of an inch. The curls or waves upon it vary from one per inch to thirty per inch. There are naturally many types varying in length, fineness, softness, color,

lustre, elasticity, and felting properties according to the conditions under which the wool has been grown.

In judging wool on the sheep's back or the fleece on the sorters' bench, always look at the shoulders first. Always assuming that the wool to be inspected is really fine, first examine the shoulders as a part where the finest wool is to be found. Take this as a standard and compare it with the wool from the ribs, the thigh, the rump and shoulder parts, and the nearer the wool from the various portions of the animal approaches the standard the better. First scrutinize the fineness, and if the result is satisfactory the fleece in respect to fineness is pronounced *very even*. Next scrutinize the length of the staple, and if the wool on the ribs, thigh and back approximates reasonably in length to that of the standard the fleece as regards length and staple it is then *true and even*. Next satisfy yourself as to the density of the fleece by closing the hand upon a portion of the rump and loin wool, these points being usually the thinnest and the most faulty. If this again gives satisfaction, the wool is then *even to density*. Now, to summarize these separate examinations. If the fleece is of nearly equal length on shoulder, ribs and back, and density on shoulder and across the loins, you then deal with a perfect sheep for producing valuable wool, *i. e.*, a perfect fleece.

TERMS USED IN THE WOOLEN INDUSTRY.

Full-blood Wool: Wool from a pure-blooded sheep (Merino is the standard).

Half-blood Wool: Wool from cross-bred merino and English sheep.

Quarter-blood Wool: Wool from sheep only quarter merino in stock.

Cross-bred Wool: The wool of cross-bred sheep (usually the cross breeding is English and merino).

Mexico Wool: South American wool from cross-bred sheep.

Wool Research

The British Research Association for the Woollen and Worsted Industries has recently published the Report of the Council for 1920. The report describes the property at Torridon, Headingley, Leeds, which has been purchased for adoption as laboratories and experimental workshops. The principal appointments to the senior staff have been made, and further assistants will be appointed as required.

The Association has arranged with the British Cotton Industry Research Association to exchange its confidential publications for those of that body. During the year the Association has published four confidential papers as follows: Periodic faults in yarn; their effect in a cloth, with special reference to yarns wound on cheeses and spools; Note on scratch-fluted rollers, roller pressure, and life of leathers for Noble combs and gill boxes; Some observations on milling; A critical review of scouring.

A large number of other researches are in hand, and some are well forward. Part of the useful work being done by the Association is an endeavor to create greater interest in the science of sheep breeding, with the view of im-

proving the quality and value of home grown wool. The report goes on to refer to "grey" hairs, so common in some British breeds, a serious fault from the wool user's point of view, as also are kemps which will not dye.

The subject of quality is also discussed, and it is recognised that the farmer will ask initiating new cotton fields, for the development of such is necessarily a slow and difficult process.

In Mesopotamia, it is interesting to learn, the prospects are good, provided it remains so far within British control that peaceful existence can be secured. Experimentally, a cotton suitable to Lancashire has been grown there, giving better value, both to the grower and to spinner, than it gave either in America, where it originated, or in India, whence the planting seed actually came. Mr. McConnell then went on to outline the plans now in preparation by the Empire Cotton Growing Committee for the carrying out of the recommendations in the Empire.

By the British cotton industry's levy and the prospective Parliamentary grant the sum of £150,000 a year is to be on a petition by the president of the Board of Trade. There is on cut-and-available, and there are other sources from which additional money may be expected if it should be required. This fund is to be administered by the Empire Cotton Growing Corporation, which is being embodied under royal charter dried scheme to be followed out. Some openings for increased cotton growing are already known.

It will be the duty of the central office to examine the Empire, area by area, and gradually to find out all possible openings. In each case it will be the further duty of the Corporation to secure that the opening is used to the best advantage. Generally, the aim will be to bring about the growing of cotton by and for the benefit of the resident population.

There are at least five urgent necessities: (1) To enlarge the agricultural staffs, and it will be the business of the Corporation to find the men, and, if necessary, to supply the pay for large numbers of the men to work directly or indirectly on cotton; (2) to increase by research the knowledge of the science of cotton growing; (3) to train men specially for practical agricultural work in the cotton field; (4) to study the commerce of cotton, so that infant industries may be assisted over the critical periods until they become economically self-supporting; (5) the important question of travelling commissioners.

The committee realize that though the Corporation may supply funds, and even men, and though the central office may give the inspiration required, yet real progress can only be made if the local government in each place is itself not merely willing, but eager, to see cotton growing increase. The committee have, therefore, designed that there should be a small and select staff of specially qualified men who will practically spend their time travelling round the cotton districts of the Empire.

These men will visit each country and district in turn, and they will personally investigate conditions and personally discuss difficulties and opportunities with the local government and its agricultural department, and with individual growers.