This study of the types of wool fabrics used in women's apparel since 1900 has been made to determine what those fabrics were in name and description, to make a collection of fragments of those materials regarded as staple items, and to determine developments and changes in their manufacture during this particular era.

Wool fiber has unique and unrivaled properties which make it the most versatile among textile fibers adaptable to every kind of climate and every sort of activity.

There are two separate methods of manufacturing wool yarns, distinguished by the names "woolen" and "worsted." In the latter process the fibers are combed until they are all parallel and even, at which time they are spun. In the woolen process, the wool fibers felt together and interlock to strengthen the finished yarn.

Woolens and worsteds were made in early colonial days by the use of hand looms. By 1830 great strides had been made in using machinery in the manufacture of wool cloth. By 1870 factories were using power machinery for large-scale production.

The catalogue of fabrics incorporated in this study shows fragments of woolens and worsteds made by factory looms from the beginning of the century until the present day. The majority of these are staple items; a few of the current creations have been included.

The salient features of the period are noted. Many forces and influences affected the wool industry to the extent that consumption per capita was extremely low in some years and high in others. Advancement in the industry has been marked by: (1) the unifying of the wool growers, manufacturers and retailers; (2) the organizing of non-profit, non-political groups to devote their efforts to increasing use of wool through education and through dissemination of factual information; (3) The passage and enforcement of the Wool Products Labeling Act which proves to be an invaluable buying guide for consumers; (4) periods of prosperity enjoyed by consumers; and (5) active interest in the field of finishing by scientific research and invention.
TYPES OF WOOL FABRICS USED IN WOMEN'S APPAREL SINCE 1900

by

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TYPES OF WOOL FABRICS USED IN WOMEN'S APPAREL SINCE 1900

CHAPTER I

INTRODUCTION

Wool has been a favorite fabric for apparel in widely separated parts of the world for many centuries. The pathway leading from savagery to the civilization of modern times is strewn with evidences of man's efforts to use this fiber to clothe and protect himself from the elements and to mitigate the effects of temperature extremes.

Wool Fiber Characteristics

Wool, a most versatile fiber, is the natural covering of sheep, possessing unique characteristics, which, so far at least, have not been successfully reproduced in synthetic fibers, or found to the same extent in other animal or plant sources. Among these characteristics are its great tensile strength, elasticity, durability and heat retention. In addition to these qualities it also has lightness and its own natural luster. When qualities of such distinction are combined in one single fiber the latter achieves a position of high esteem among textile materials.
Explanation of Allied Animal Fibers

In close relationship but not strictly classifiable as wool are the hair fibers used in the animal fibers, known as specialty hair fibers used in the manufacture of clothing (55, p. 212). The most noticeable difference between wool and hair is that hair is straight, whereas wool is kinky or curly. The real difference is in the basic structure. Wool fiber is covered with overlapping scales; hair is a straight shaft with scales that are much less marked. Between hair and wool there is a wide variance in number of scales or serrations and the degree of projections. Among these are the fibers of the alpaca, vicuna, llama, Bactrian camel, Cashmere and Angora goats. Hair fibers may be used alone or in conjunction with wool to give different effects.

Methods Used in Making of Wool Cloth

Wool fibers themselves are of many types and kinds and even when similar in type can be processed so as to achieve very different results (62, p. 22). Methods used in making wool cloth are weaving, knitting, and felting. The latter is made directly from the unspun fibers by pressing masses of them together in an environment of moisture, heat, and friction. The first two—-weaving and
knitting—require that the fibers first be prepared and spun into yarns. It is with the first method that this paper is concerned.

In the manufacture of the woven cloth there are two main types—woolens and worsteds. "Worsteds are made in the loom, woolens in the finishing," (27, p. 8) is an old saying in the industry which means that the difference begins with the spinning of the yarns and ends with the finished appearance of the goods. Woolens are usually woven from shorter fibers which do not lie parallel in the yarn, the wool having been carded so that fibers run in many directions. They are not straightened out prior to spinning and so no formal arrangement of them exists (31, p. 50). The weave is indistinct regardless of whether it be plain or twill, and the surface is soft, fuzzy, and thick. Woolens are warmer than worsteds. Typical woolen fabrics are tweed, flannel, homespun, cassimere, and broadcloth.

The worsted yarns are made from long, straight fibers, combed and twisted for a fabric that has a well-defined pattern, chiefly twill weave, that is more closely woven than the woolens. The fabrics made from these yarns have a flat, firm, smooth finish which possesses crease and soil resistant qualities to a high degree. Worsteds,
usually considered more appropriate for tailored and dressy wear than woolens, appear in a number of common fabrics, such as, serge, gabardine, whipcord, and crepe.

Woolens and Worsted of the Colonial Hand Looms

Although few in number, woolens and worsteds were products of the hand looms in early colonial homes. The fabric called homespun was a most important woolen fabric, well fulled, frequently dyed in the fleece, and of a distinct rough texture. Another similar cloth was "linsey-woolsey," a combination of coarse linen warp with wool filling. It was more popular and more durable than homespun; although not equal to the latter cloth in beauty, it sold for twice the price. It was in greatest demand during the Revolutionary War, disappearing soon after the Civil War. Kerseys and flannels were the only other woolens made at the time. Broadcloth was unknown previous to 1760. In the field of worsteds a greater variety existed. The making of these fabrications required more skill, but early English and Scotch weavers, who had defied English emigration laws, came to the new land prepared to practice and instruct in this craft. Among the worsteds, generally called "stuffs," produced by these craftsmen were serge, calimanco, drugget, and crepes. They were
usually made in imitation of foreign cloths. The only worsted of American origin was a light weight dress fabric called "tammies" (55, p. 4-5).

Period of Transition

The transition from the hand loom to the small factory system was gradual due to the vicissitudes of life in a new country. In the 1830's the factory era began—a period of expansion during which time the use of power machinery completely overshadowed household cloth-making. This era reached its maturity in 1870 in American mills. The period since that date has witnessed a broadening of the range of wools acceptable to the industry with a large-scale production of woolens and worsteds and a standardization of these cloths. Consumers' insistence upon the opportunity to buy materials with which they were familiar year after year was the prime factor leading to this standardization.

Staple and Novelty Wool Fabrics Explained

The annual output from our modern mills runs into thousands of yards of standard materials. In the industry they are called staples or staple items. Even these staples, whose names are household words, have unlimited variations, but generally speaking, every staple fabric
has certain characteristics by which it is known or identified. According to Darby, "The nature of even such staples varies greatly according to the kind of raw materials used, the manner in which the raw materials are blended, and the skill, care and equipment employed in the manufacturing processes." (16, p. 94).

Each season a number of fabrics appear on the market that are new in combination of weaves, yarns, colors, and finishing processes. They cannot be classified as staples, hence the terms, "novelties" or "current creations" are applied to them. Some novelties find a limited acceptance, others last more than one season, while a few win a permanent place and eventually become staples. (16, p. 94).

A Brief Statement of the Problem

The Textile Department of the Home Economics School of Oregon State College has long felt a need for an orderly compilation of the staple wool fabrics, together with developments and changes pertaining to them, that have gained a position of importance in women's wearing apparel in the last half century. It is to partially fulfill this need that the present study is being made.
CHAPTER II

REVIEW OF LITERATURE

Areas of Research in Wool

Research studies in the field of wool have been directed mainly to the study of the fiber itself. The physical structure and chemical composition, dimensional attributes, their relationships to the production and manufacture of yarn and fabric have been of particular interest. Experimentation with construction to determine weaves that increase warmth, dye fastness, insulation possibilities, and finishing processes continue to be given priority.

Nature of Studies Completed

Investigations concerned with a phase of any wool fabric after it has left the mill are few in number. A comparative study on the wearability of several qualities of one kind of worsted has been completed; another study determined the wearability and serviceability of certain wool fabrics used in every day apparel by women students.
CHAPTER III

THE PROBLEM OF THIS STUDY

Object of This Investigation

The objectives of this study on wool fabrics were:

1. To determine the wool fabrics, their name and description, used in women's apparel since 1900.

2. To determine the general tendencies in the development of wool fabrics used in women's apparel since 1900.

3. To make a collection of the fabrics which would be a fair representation of the actual cloth worn, and to include examples of significant finishing processes.

Limitations of the Study

The study was centered primarily on the staple wool fabrics for outer wear; the novelty fabrics were of secondary importance. No attempt was made to incorporate descriptions or examples of color, design, price, blends, felts, or wool substitutes. Only in parts where their inclusion warranted a clearer understanding in the examination of the particular swatch or trend was this done. Fashions in women's apparel were dealt with in similar manner.
Method of Procedure

The first step was to determine what wool fabrics were manufactured at the beginning of the century and during the succeeding years. Sources of this information were in the form of articles in periodicals written for technical readers, textile producers, and for those interested in the fashions and fabrics.

When the above information was gathered the actual fabrics were sought—fragments of the authentic staple textiles, some of which are now obsolete, others still meeting favor with the consumer. Communications were sent to: the foremost wool manufacturers of the nation, the organizations interested in the promotion of the wool industry, the textile divisions of museums and institutes, and finally to industrial firms organized for the finishing and testing of wool fabrics.

The Smithsonian Institution of the United States National Museum supplied eighty-four swatches representing the typical wool fabrics used between the years 1912 and 1930. Wool manufacturers, friends, and acquaintances furnished others which, with few exceptions, completed the group of samples necessary to show the staple materials used in women's apparel.

From the collection fifty-one staple fabrics were selected for a catalogue. These were arranged
alphabetically with descriptive and informative points regarding each one. Such a collection did not exhaust the number of materials that gained a lasting position in the costumes of the years, but viewed collectively it does, quite adequately, represent the wool materials women have selected for their apparel.

Six novelties, products of French and American looms were included. The final group is made up of samples representative of the functional finishes used on wool.

The next section is a running accompaniment to the catalogue; it gives a brief account of the part that wool fabrics played in wearing apparel since 1900 and also, some of the forces and influences which affected the wool industry.
Explanation of Terms

Apparel: A general term covering garments and other articles of clothing.

Apparel wools: Any wool that is manufactured into cloth for use as clothing.

Artificial silk: See Rayon.

Botany: A term applied to some goods made from fine wool and also applied to fine wool from Australia.

Calimanco: (Also spelled Callimanco) This fabric was popular during Colonial times. It was described as a fashionable woolen material with a high gloss.

Converting: A step in the production of fabrics, wherein they are changed from grey goods to finished fabrics.

Couture: A French word meaning the art of sewing or stitching.

Couturière: A French word meaning an artist in dressmaking, a needle-woman.

Dobby: A loom on which small figure weaves may be produced.

Drugget: A word which formerly meant a woolen or mixed stuff for clothing.

Fabric: A widely used term meaning cloth, material, goods or stuff.

Felted fabric: This is a woven material that has been processed to give it a thick, compact finish. The weave construction of the cloth is covered up and not seen when the cloth is examined.

Float: Warp or filling yarns which lie free on the surface of the cloth.

Fulling: A process in the finishing of woolen cloth. The cloth is dampened and beaten under heat which causes shrinkage, weight increase, and weave obscurity in the cloth.
Finishing: The art and science of making materials presentable to the consuming buying public. Cloth is converted from the grey goods state, as it comes from the loom, into a fair, medium, good or excellent cloth ready for usage. Textile fabrics are made in the finishing.

Hand, handle: May be defined as a certain quality expressed through the sense of touch. The "feel" of goods as soft, slick, sharp, woolly, smooth or silky; poor handle may be expressed as harsh, greasy, gummy, sticky, boardy and dry.

Kasha cloth: Fabric made from the hair fibers of the Tibet goat. Very soft in feel, and napped with a slight crosswise streaked effect in the darker hairs used in the cloth. A Rodier product.

Jacquard: (Fr. pr. zha-kar; Eng. pr. jak-ard). Damasks and brocades and all cloths with elaborate figures require the Jacquard loom.

Kemp: A name given to the coarse, brittle hairs which appear in some fleeces. They are dead white or opaque.

Laine: Fr. word, for wool, or woolen or worsted cloth.

Leno: A weave, incorrectly called gauze, in which the warp yarns are arranged in pairs twisting around one another between picks of filling yarn, as in marquisette.

Mungo: The term refers to a class of fibers reclaimed from woolen fabrics that have been heavily fulled or felted. See Shoddy.

Nap: The downy or fuzzy appearance of cloth produced by raising the fibers to the surface; not to be confused with pile.

Noils: Short fibers which come from the combing process in preparing yarns as for worsted. Short wool fibers are wool noils.

Piece-dyed: Cloth dyed after weaving.

Pile: Fabric having a surface made of upright ends as in fur.
Plain weave: The simplest of the fundamental weaves. Each filling yarn passes alternately under and over each warp yarn. Same as tabby.

Rayon: (Fr. for "ray of light"). Name adopted in 1924 for artificial silk. Lustrous textile fiber, made by converting cellulose into a filament by means of chemical and mechanical processes.

Rodier Frères, Paris: Designers of distinctive fabrics in wool or wool combined with silk, cotton, or rayon. Noted for exclusive patterns and color effects. There are no Rodier power mills. The fabrics are woven on hand looms in hundreds of homes in and around the little town of Bohain.

Reprocessed wool: This comprises scraps and clips of woven, and felted fabrics made of previously unused wool. These remnants are "garnetted"—that is, shredded—back into a fibrous state and used in the manufacture of woolens. (61, p. 2).

Reused wool: It is also called shoddy. It is made from old wool which has actually been worn or used—including the rags and miscellaneous old clothing collected by rag dealers. These are cleaned and shredded into fibers again, and then blended to make utility fabrics (61, p. 2).

Shoddy: See Reused wool above. Shoddy includes fibers obtained from cloth that has been felted but slightly, such as worsteds and knitted goods (25, p. 206).

Staple: Trade term concerned with the length of cotton or wool fiber. Also refers to fabrics as serge or satin, sold year after year, in contrast to novelties. "The term 'staple' originally meant a mart or market. These established market towns were recognized and licensed by the king. For many centuries it was illegal to trade in wool and other commodities at any place other than in such licensed towns or 'staples.' In time the word came to be applied to the commodity (at first wool, and later cotton) as well as to the market place." (32, p. 481).

Suiting: A general term which applies to a variety of weaves and finishes. Many novelties are introduced from time to time.
Tissue: Any light weight open fabric.

Tops: The longer wool fibers which are separated from the shorter ones (noils) by combing. Used for worsted yarns.

Twill: A fundamental weave admitting of many variations. Found in serge, denim. Intersection of yarns form lines running to the right or left diagonally across the fabric.

Virgin wool: "'Virgin wool' is wool that has never been processed in any way, before its complete manufacture into the finished product," (61, p. 2).

Wool: "'Wool' must refer to fleece wool being used for the first time in the complete manufacture of a wool product. It may include new fleece wool that has previously been processed up to, but not including, weaving or felting" (61, p. 2).

Warp: Set of yarns which run lengthwise in a piece of cloth.

Weave: The interlacing of warp and filling yarns with each other to form a cloth.

Weft: The crosswise or filling yarns used in weaving.

Weight of fabric: "In the woolen trade, the weight of the cloth is of more interest than the actual construction of the cloth. The weight of a woolen or worsted cloth is given in terms of ounces per running yard, 56 inches wide, as contrasted with the term of square yard."

Woolen: See page 3.

Worsted: See page 3.
A Catalogue of Some Wool Fabrics Used In Women's Apparel Since 1900

Name: Albatross
Weave: Plain

Name: Alpaca
Weave: Plain

Name: Alpaca (fleece)
Weave: Twill
Description: The newest development in this fabric; result of effort to make a cloth that would be very warm and lightweight. Used during World War II and since. Uses: women's coats.
Name: Batiste
Weave: Plain
Description: A light weight, fine, smooth fabric similar to nun's veiling, only finer. Lends itself to draping effects and shirring. Named for Jean Baptiste, French linen weaver. Uses: dresses, blouses, negliges. Width, 40", 44".

Name: Bedford Cord
Weave: Fancy
Description: A smooth, corded fabric with cords running lengthwise. May be made of worsted, silk, cotton or combinations. Wearing quality excellent, unless weave is loose with weak filling yarns. First name was Bedford cloth and was first made at New Bedford, Massachusetts and so obtained its name. Uses: dresses, light weight coats, riding habits. Width, 44", 50", 54".

Name: Bolivia Cloth
Weave: Pile
Description: a woolen or worsted weft pile fabric. It has a soft and velvet like feel. The tufts of pile usually appear in diagonal or vertical rows. Yarn or piece-dyed. Excellent wearing quality in good grades. The fragment opposite was one of the year 1922, width 56", and was $3.99 a yard. Uses: Women's coats and suits.
**Name:** Bouclé Cloth  
**Weave:** Pile  
**Description:** Knitted or woven woolens with yarns that have a twist or curl in them. In women's coat fabrics the bouclé yarn is used in both directions. Usually all wool for this purpose. Named for the French verb meaning to buckle or curl into ringlets.

**Name:** Brilliantine  
**Weave:** Plain or twill  
**Description:** A smooth, wiry material the same as alpaca or mohair. A heavier quality is called Sicilian Cloth. Warp, cotton; filling, lustrous wool or mohair with little twist. Sheds dust, does not wrinkle. Not used for dresses unless stiff fabrics are in vogue. Excellent wearing quality. Uses: dresses, linings, dusters, bathing suits.  
*Width, 44", 50", 52", 54".*

**Name:** Broadcloth  
**Weave:** Plain or twill  
**Description:** A smooth, rich looking lustrous woolen fabric. The nap lies in one direction. Cloth is fulled after weaving, napped, sheared, polished with high luster. Stock-dyed or piece. Good quality wears very well. Uses: dresses, suits, coats.  
*Width, 50", 54", maybe wider.*
Name: Camel's Hair
Weave: Twill (usually)
Description: A soft, thick, napped coating made in natural camel's hair color. Value depends upon quality of fibers. Good grade very soft and light in weight. May be knitted or loom made, light weight, smooth finish.

Name: Cashmere
Weave: Twill, filling on the face.
Description: Fine, soft, light weight fabric, made from hair from cashmere goat, but modern practice (both in England and America) is to use soft, native wools. It is similar to Henrietta, but not as closely woven or as highly finished. Piece-dyed. Wears well. Uses: dresses, Width, 42". Modern cashmere is a napped fabric, exceedingly soft. Uses: coats.

Name: Challie or Challis (pr. shal-ly).
Weave: Plain
Description: A light weight dress fabric of wool or cotton and wool. Similar to old-fashioned muslin de laine. Soft, smooth yarns. Always printed (direct or discharge). Wears and launders well. Uses: scarves, dresses, blouses. One of the softest fabrics made, and named from the Anglo-Indian term "shales" meaning soft. Width, 27", 36", 54".
Name: Cheviot (pr. shev-i-ot).
Weave: Twill
Description: A rough-surfaced wool fabric similar to serge, only heavier and rougher. Usually worsted. Stock or piece-dyed. Somewhat fulled and napped. Does not wear shiny as readily as serge. Originally made of wool from the sheep that grazed in the Cheviot Hills which separate England from Scotland. Uses: suits and coats. Width, 56", 58".

Name: Chinchilla
Weave: Twill (double cloth)
Description: Distinguished from fur of the same name; no resemblance. Heavy coating with napped surface rolled into little tufts or nubs. Often the fabric is double faced with a woven plaid or knitted back. Uses: overcoats. Width, 54".

Name: Covert Cloth
Weave: Twill or satin
Description: A medium weight suitting of woolen or worsted yarns. Warp is formed of two-ply yarns, one of which is white (slightly twisted). This gives a speckled effect in color. The white is often cotton. Hard or soft finished, yarn-dyed. Excellent for wear. Uses: overcoats, riding habits, suits, raincoats (waterproofed). Width, 54".
Name: Crepe or crepon (wool)
Weave: Plain
Description: Rather wiry fabric with crepy surface. Surface effect due to treatment of yarns (difference in the degree of twist, or left or right hand twist in same fabric) or having some warp yarns slacker than others. Good wearing qualities. Uses: dresses. Width, 36", 40", 50", 54".

Name: Diagonal (English)
Weave: Twill
Description: General term meaning a broad or conspicuous twill. Used for women's suits and slacks.

Name: Double Cloth
Weave: Twill, satin, Jacquard, combined in various ways with various finishes.
Description: Cloths woven with two warps and one filling, one warp and two fillings, two fillings and two warps or with a fifth set of bindery yarns to unite the two cloths. This can be varied with different colors on each side, or with patterns that are reversed. Uses: suits, coats, ribbons.
Name: Flannel
Weave: Plain or twill
Description: An all-wool fabric woven of woolen yarns, with a softly napped surface. Name derived from a Welsh term "gwlamen" which means allied to wool. There are several kinds of flannel. The fragment at the left is "Botany Sport Flannel." It is very fine, light weight, twill weave fabric, printed in wide stripe pattern. Width, 27".

Name: French Flannel
Weave: Twill
Description: A double width, twill weave all wool fabric made from fine, French spun yarn. Width, 27". Piece-dyed worsted dress goods.

Name: Shaker Flannel
Weave: Plain or twill
Description: Cotton or cotton and wool fabric well napped on both sides. Sometimes all wool. Usually gray. Bleached or unbleached or dyed. May be softer, looser yarns and thicker cloth than outing flannel. Also called domet. Originally made by communities of Shakers. Uses: interlinings. Width, 26", 30", 36".
Name: Fleece  
Weave: Plain  
Description: A name used for a fabric that has a deep fleece-like napped surface. Used for overcoats.

Name: Gabardine: 
Weave: Twill  
Description: A tightly woven steep twilled material, Spanish in origin, and named from the Spanish word meaning "protection against the elements." May be hard, smooth, finish like worsted, or dull, soft finish like woolens. Piece-dyed. Excellent for tailored suits and dresses. Width, 54".

Name: Henrietta  
Weave: Twill  
Name: Homespun
Weave: Plain
Description: A loose, rough, woolen fabric of coarse wool fibers. Formerly made on hand looms at home from hand-spun yarns. It is now imitated by machine. Revived from time to time. The fabric resembles a tweed in general character. Uses: sports clothing, suits. Width, 48" 54".

Name: Jersey Heather Mixture
A knitted fabric

Name: Jersey
A knitted fabric
Description: A plain-knitted, elastic fabric with a faint rib on one side. Wool jersey may be smooth or napped, and tends to cling to the figure and stretches badly. Does not wrinkle. Name taken from Island of Jersey off the French coast, and used for fisherman's clothing. Uses: dresses, suits, coats. Knitted in tubular form any width.
Name: Kasha
Weave: Twill

Name: Kersey
Weave: Plain or twill
Description: A heavy pure wool similar to wool broadcloths. It is well fulled with a nap and close sheared surface. Uses: uniforms, overcoats. Width, 50", 54".

Name: Mackinaw
Weave: Twill or double construction
Description: Heavy woolen fabric. The two sides may differ in color and design. Filled or napped. Usually contains large percentage of reclaimed wool. May have cotton warp or cotton mixed in yarns. Yarn-dyed. Very durable. Uses: coats, jackets. Width, 54", 56".
Name: Mohair
Weave: Plain, twill or pile
Description: A smooth, glossy, wiry fabric, same as brilliantine, also called alpaca. It is made from the long, silky hair of the Angora goat. This fabric sheds dust and is cool. Uses: women's wear—summer suits.

Name: Palm Beach Cloth
Weave: Plain
Description: So named because originally made for wear at Palm Beach resorts. A light weight, cool fabric, yarn-dyed, often striped. Launderes well, warp, cotton; filling, mohair or wiry wool. Excellent wearing quality. Uses: for summer suits. Width, 36".

Name: Poiret Twill
Weave: Twill
Description: a fine worsted material with a soft or hard finish. It is similar to gabardine only finer and smoother. Uses: same as gabardine. Width, 54".
Name: Poplin (wool)
Weave: Plain or cabled
Description: The cabled effect produced by heavy filling yarn. Also made in silk and wool, in silk and cotton and all cotton. Piece-dyed. Excellent wearing quality. It was named from "papeline" a fifteenth century fabric woven at Avignon, France in compliment to the reigning pope. Originally made in silk for church vestments and hangings. Now made of worsted yarns. Uses: dresses, skirts, suits. Width, 44", 48", 54".

Name: Prunelle
Weave: Twill or Satin
Description: A strong, smooth finished worsted cloth, yarn-dyed. Plain or striped; the latter is used for sports wear. Formerly used for scholastic and ecclesiastical gowns. A fabric similar to prunella is called moleskin. Uses: dress goods, heavy grade—women's shoe tops. Width, 42", 54". No longer in vogue.

Name: Ratiné (wool) (pr. ra-tee-nay)
Weave: Plain
Description: A loosely woven, rough appearing fabric of plain weave. Ratiné effect produced by specially prepared yarns. One yarn is twisted loosely about another so that it kinks up and looks nubby or knotty. Uses: dresses, coats. Width, 54".
Name: Rep  
Weave: Plain  
Description: Closely resembles poplin. Rep has a heavier cord (filling yarn) and is a wider fabric. Piece or yarn-dyed. Silk or wool may be used in combination or with cotton. Uses: skirts, suits. Width, 27", 36", 50".

Name: Satin (wool and rayon)  
Weave: Satin  
Description: The name of a basic weave and a large class of silk fabrics. It is also employed in linen (satin damask) in mercerized cotton sateens and some wool fabrics. The warp yarns are arranged to completely conceal the filling, thus making a smooth, shiny surface. The fragment (opposite) has a wool filling which is entirely covered by the rayon warp yarns forming the face of the cloth. Width, 43".

Name: Serge  
Weave: Twill  
Description: A hard or soft finished worsted material of light, medium or heavy weight. Most universally used of all wool fabrics. It appears the same on wrong and right sides except for the direction of the twill. Worsted yarns are used. Yarn or piece dyed. Uses: dresses, suits, coats. The fragment (opposite) is French serge. It is very fine and smooth and always wears shiny.
Name: Serge (storm)
Weave: Twill
Description: This fabric is a coarse wiry and more or less heavy variety.

Name: Shepherd's Plaid or Check
Weave: Twill (serge) sometimes plain or basket.
Description: Name of all fabrics with small even checks in black and white. Made in wool, cotton, and various combinations of wool and cotton. Uses: women's suits, dresses. Width, 36", 40", 52", 54".

Name: Soleil (satin)
Weave: Fancy
Description: A soleil weave may be plain or ribbed. The plain is formed from sateen weaves which are doubled and trebled, giving a very close intersection of threads and producing very strong fabrics. The ribbed ones are made by adding a plain weave to a warp rib weave. A bolder size of rib is called ottoman. Uses: suits, coats. (34, p. 278)
Name: Taffeta (wool)
Weave: Plain
Description: A fine, smooth, closely woven, lightweight fabric, much lighter and finer than Panama. Similar to nun's veiling, but has a smoother surface and harder twisted yarns. Washes and wears excellently. Plain color or light stripes. Uses: women's dresses. Width, 40", 52". The word Taffeta is taken from the Persian "taftah" to spin.

Name: Tricotine
Weave: Twill
Description: Worsted dress goods, resembling gabardine but woven with a double twill. Wears well but grows shiny. Very fine tricotine appears to be knitted. Uses: suits, dresses. Width, 54". Practically off the market.

Name: Tweed
Weave: Plain, twill, or herringbone twill or small figures
Description: A rough, coarse cloth made from heavy worsted yarns containing wiry and heavy wools. Stock or yarn-dyed. Very durable. Uses: coats, suitings, sports wear. Width 54". Originally an all-wool homespun made in Scotland. The fragment (opposite) is called Scotch Tweed.
Name: Venetian Cloth  
Weave: Twill or warp satin  
Description: A fine, soft wool dress fabric, resembling prunella only softer. Somewhat fulled but weave is apparent. Uses: dresses, suits. Width, 52", 54". Practically off the market.

Name: Vigoreaux Suiting  
Weave: Twill  
Description: A process of printing worsted fibers before spinning to give a mixed color effect. Now used as name of fabric which shows a dark and light effect produced by vigorous yarns. The process was named for the inventor.

Name: Viyella (flannel)  
Weave: Twill  
Description: A flannel. It is a trade named fabric made in England. It is woven of cotton and wool mixed in the yarn. Made in different weights and widths. Uses: dresses, sports wear. Width, 31", 46".
Name: Voile  
Weave: Plain  
Description: A thin, transparent, clinging fabric. Dainty and durable. In wool it is thin, smooth and wiry. Made from worsted yarns very tightly twisted. Piece-dyed. Wool voile does not wrinkle, sheds dust. When in vogue used for dresses. Width, 42", 50".

Name: Worsted dress goods  
Weave: Jacquard  
Description: This is a brocaded fabric for dressy wear. The fragment opposite was worn in 1913. The warp is cotton and the weft is wool.

Name: Zibeline  
Weave: Twill  
Description: A heavy woolen fabric having a long hairy nap laid down on the surface. Stock or yarn-dyed; fulled, napped, brushed; hairs tend to wear off the surface. Uses: coats and suits. Width, 54". The fragment opposite is called Zibeline Cheviot. It is a fancy diagonal in white and black. All zibelines are practically off the market.
Name: A wool sheer  
Weave: Plain  
Description: A Rodier fabric of 1948. It is extremely light in weight with a colored design printed on the surface. A novelty in wool.

Name: Porosa  
Weave: Plain  
Description: A Forstmann current creation of 1937. It was especially constructed of worsted yarns to be crease resistant.

Name: A novelty wool blend  
Weave: Fancy  
Description: A Rodier fabric of 1942. Wool yarns have been blended with hair fibers to develop a very soft material.
Name: A Novelty wool
Weave: Fancy
Description: A Rodier fabric of 1929. Machine made embroidery designs appear at intervals over the surface.

Name: "Am-Wo-Cool"
Weave: Plain

Name: A novelty wool
Weave: Plain
Description: A Rodier fabric of 1934. Little nubs of yarn appear on the surface of the cloth.
Name of Finish: "Cravenette", a water-repellent.
Explanation: The fragment opposite represents one of the first products in "Cravenette", a water repellent process. The fabric is stiff with a "rubberized" hand.

Name of Finish: "Cravenette", a water-repellent.
Explanation: The second "Cravenette" fragment represents the new and improved water repellent fabric developed by the Company of the same name. The fabric has a soft and flexible hand.

Name of Finish: Zelan
Explanation: The fragment opposite has been treated with Du Pont Zelan - a durable repellent finish.
Name: A Lanaset-Resin Treated All Wool Plaid
Explanation: Lanaset is the trade mark of American Cyanamid Company covering its harmless melamine resin for controlling wool shrinkage. Its application is confined to woolen mills, cannot be applied in the home. See following section.

Name: A Resloom-Treated Woolen Fabric
Explanation: Through the use of a melamine formaldehyde type resin, developed by the Monsanto Chemical Company, certain effects are imparted to textile fibers and fabrics. See following section.

Name: A Moth Proofed All Wool Crepe
Explanation: A twill novelty crepe effect, all wool fabric. "Prevmo" is the trade name of the moth proofed process used.
A Word Picture of Wool Fabrics Since 1900

Wool fabrics worn during the first decade of the century were characterized as an assortment of rough cloths for general wear and smooth-surfaced ones for dress occasions (26, p. 42).

In woolen goods many small, unobtrusive mixtures were used, ranging from the tiniest invisible plaids to large, broken-up irregular designs, but always of subdued shade of coloring. Some of these, in both smooth and slightly rough surfaces, were goods of loosely woven mesh, like hopsacking and homespun. In popularity, broadcloth easily ranked first. The surface of this cloth was indicative of its cost—the higher the gloss or luster the higher the price.

By 1904 serge, a worsted fabric and second to broadcloth in popularity, appeared in the finest of surfaces. It was closely twilled and possessed a softness of finish and texture which was new in this fabric. Serge was considered indispensable for general utility purposes, finding its greatest use in coats, "skirt suits" and whole dresses.

A fashion of interest to develop between 1892 and 1908 was the tailor made suit (57, p. 302). Various types of suits sprang from this creation—the dressy suit of
broadcloth; the street suit of serge; the traveling suit of mohair, tweed, homespun, hopsacking, serge or etamine.

Women's apparel included the odd skirt and separate waist. The latter made of light-weight materials, such as cashmere, albatross, viyella, Scotch and French flannels was worn with a skirt of serge, Henrietta, Poplin, granite, soleil, Eudora, cheviot or camel's hair. If the skirt was of "walking length" such a laconism meant that it was very full at the bottom and escaped the ground by one to two inches.

Plain, severe styles were chosen for mourning costumes; the fabrics were dull-finished ones—tradition forbade the use of those with shiny surfaces.

The storm coat was an absolute necessity and economy. It was made from regular waterproof materials or from plain cloths that had been well sponged. Scotch and Irish tweeds made excellent rain coats as they shed the water and did not absorb the dampness (40, p. 49).

As for the novelties, few existed. They were of persistent nature and reappeared in successive seasons. Mohair, one of the sturdier fabrics, gained in popular demand thereby establishing itself as a staple. In white, mohair became a rival of serge for the separate skirt. It was more adapted to the skirt and coat suit than to a gown, as it was preeminently a material for hard wear.
The year 1909 represented one of the most prosperous years in textiles in the United States, particularly in the woolen and worsted trade. At that time there were produced six and one half yards of women's woolen and worsted dress goods per person in this country (19, p. 575).

From 1911 to 1920 was the period in which serge reigned. It appeared in several weights, textures, and designs. In an article entitled, "How to Recognize and Select Best Serges," which appeared in a 1913 issue of The Country Gentleman, the author wrote "we can confidently say that it (serge) always will be the leader in dress goods" (60, p. 49). The lighter weight, seven or eight ounces to the yard, was appropriate for gowns or costumes that required draping; the ten or twelve ounce quality was recommended for the tailored suit worn for shopping or visiting. One could differentiate between yarn-dyed and piece-dyed serge by the quality of a white thread through the selvage. The best qualities in serges came from 50-56 inches wide. Narrow widths were cheaper in grade and price.

In the years 1911 to 1913 the standard items - cheviot, homespun, serge, whipcord, and wool ratine were excellent for everyday wear. A "new material" called
Gabardine of fine quality made its appearance. Wool crepe came to the fore for the dressy tailored suit while broadcloth had a few seasons of disuse (8, p. 1619). Most of these materials were from 42-44 inches wide, though occasionally serge, whipcord and Bedford cord were available in 50-54 inch widths.

In the spring of 1917, wool fabrics fell into certain definite classifications. Perhaps it was because of the curtailment of shipments of foreign novelties, perhaps it was fashion's whim. In any event, the fabrics with soft velvety surfaces gained in favor. They became known as duvetyn, peau de peche (skin of a peach), glove-skin finish and velours de laine (8, p. 31). Rodier invented duvetyn for wear in the winter of 1913. The first ones of the glove-skin finish to appear on the market were considered quite impractical but with careful selection of wools and dyes the manufacturers had succeeded in making these fabrics durable without spoiling their gloveskin.

At the beginning of the present century and on into the second decade women wore wool or cotton dresses and wool under garments. Silk was a luxury and rayon was unknown. Then came the first World War, along with it the flapper, the short skirt. Less weight was becoming a characteristic of women's clothing. When silk and
later artificial silk (later called rayon) became available for more users, wool suffered from an economic as well as from an esthetic disadvantage. "The woman who wore 6.4 yards of wool in 1909 wore only .58 yards in 1929" (3, p. 71).

Not only was there a loss, resulting from the decreased sale of wool fabrics, but the wool industry suffered from a change in the type of fabric. In the days prior to World War I a few sturdy staples were made up in large quantities, furnishing the revenue for the industry. Prime example was blue serge, which wool mills, especially the larger ones, turned out in tremendous number of yards. Blue serge had been popular since the Civil War. When the "boys in blue" returned home they retained the color in their civilian clothing. For generations afterward, blue serge was the standard best attire of the male apparel (3, p. 72).

The popularity and availability of this fabric proved a detriment as many manufacturers desiring to share in serge profits made cheap grades and eventually made this cloth less desirable. Then too, as World War I days became in the past and the automobile was removing the barrier between town and country, style consciousness removed serge from the scene. The demand dropped in 1923 and has never remotely regained its former popularity.
In this period the twill weaves particularly had gone through a metamorphosis and emerged with qualities of softness and ease of draping. They had definitely lost the old-fashioned "wiry" feel. One of the favorites in this class was that known as Poiret twill, named in honor of Paul Poiret, an outstanding French dress designer of the period, (33, p. 73). One other interesting twill, popular at the same time, was tricotine.

World War I greatly curtailed the supply of wool and increased the price of the amount that was available. The rule that had stood for the past generation of shoppers "when in doubt, order serge," was laid aside in days of war. The couturiere, however, had a ready answer, "when in doubt, order a frock of gabardine, one of foulard, one of tussur, one of satin, and by this time the purse of the prospective customer like the famous cupboard of the fable, is bare, and so she buys no serge frock, (37 p. 44).

Women were made conscious of the wool content of their apparel by expressions of the times. One of these was "she is indeed a wolf in sheep's clothing who wears a superfluity of the wool that is to win the war."

"Hooverizing on wool" was the order of the day. Consequently the national silhouette became patriotically slim.
There were several signs by which a patriotic woman was identified.

...by the knitting bag full of khaki coloured wool upon her arm, by the lack of sugar in her tea, and, last, but most important, by the scarcity of wool stuff in her costume. If a woman is slender as to silhouette, if her skirt is as short and scanty as her stature will permit, then one may know that she is patriotic and that she is doing her bit in the conservation of wool (44, p. 48).

As the war went on the government of the United States placed control of the wool situation under the War Trade Board. Previous to this, the manufacturers and makers of clothes began their own program of wool conservation. The men tailors agreed upon measures of saving fabric in men's wear, but when it came to women's wear the matter was much more difficult. Contrary to the agitation promoted by some civilian groups there was no desire on the part of the authorities in Washington D.C. to suggest that women wear a uniform of any sort. The matter was left to the discretion of the individual makers and wearers. These garment makers agreed to use no more than four and one half yards of material 54 inches wide in any suit or dress, and, if possible, to limit the quantity of material to three yards (44, p. 48). The 1918 spring silhouette had been slenderized with flowing skirts and voluminous coats tabooed. Combinations of
material were advocated sparing wool stuffs as much as possible.

To further conservations in textiles the United States Government made the decision to make the Commercial Economy Board of the National Council of Defense in Washington a part of the Conservation Department of the War Industries Board and further to create a Textiles Division in this department, with three sections, a wool, a cotton, and a silk section (58, p. 401).

This Board issued to all manufacturers and makers of clothing and garments the following recommendations: first, that they avoid excessive multiplicity of styles, confining themselves to the number of models actually required by the trade; second, that they avoid models having needless adornments, such as belts on coats, cuffs, unnecessary pleats; third, that they use cloth in which reworked wool and cotton are in part substituted for wool, and that they reduce the average weight of fabrics; fourth, that they make models that require the least practical amount of cloth; fifth, that they reduce the amount of cloth used in samples; sixth, that they design fewer fabrics and confine their designs as much as possible to standard construction and standard colors, doing away with novelty fabrics. It was estimated that this simplification of clothing, with greater standardization of
quantity, color, weave, and style, would save 40 per cent in material for men's clothing, and 25 per cent for women's clothing (58, p. 403). Practically all of the wool supply was necessary for equipping the armed forces. To equip a soldier 106 pounds was needed, while in service the requirements per man were estimated to be from 125 to 190 pounds a year (58, p. 402).

Scotch plaids, featured the colors of the Scotch fighting regiments, the McAlpins, Forbeses, Carisles, McKinleys, and Grahams were among the various ones popularized during the war years (22, p. 64).

In the autumn of 1918 velours for the first time in history became a part of the clothes of the fashionable women. The world had so scorned this product in the past that the term "shoddy" had come to signify something undesirable, yet as a matter of fact, shoddy is far from useless (59, p. 63). The manufacturers took old wool clothes and clothes in which wool and cotton were combined, sterilized and reprocessed them to obtain the wool. This wool fiber was rewoven into attractive velours that compared most favorably with the fabrics of the first weaving.

Wool jersey, of French origin, attained the distinction of a "classic" tissue of equal rank with serge and velours de laine. It was put to an incredible
number of wardrobe uses by French women. Garments from coats, to blouses and even hats were made. To a large extent it took the place of serge, and like serge it was light, and unlike serge it could be had in any color. The first jersey manufactured in this country was rather too reminiscent of wool underwear to be pleasing, but this defect was later remedied (20, p. 54). The name "stockinette" at first given jersey did not continue. Jersey became a word that meant all sorts of knitted fabrics and others with a knitted look.

The French weaving houses introduced many marvels of weaving during the twenties. The House of Rodier was particularly responsible for the strong Moroccan and Algerian influences seen in the collections of 1921. A son and nephew of Paul Rodier had returned to their work in Paris after time spent in war service in North Africa bringing colors, designs, and textures typical of this land for their new creations (24, p. 34).

Rodier's collection divided itself into fabric families, each with its distinctive name. The Kasha family was one of these, a descendant of ancient Cashmere but more supple and warmer (43, p. 44). It remained the smartest woolen dress fabric for the first seven years of the decade. It influenced the appearance of other wool fabrics which in turn became more kasha-like.
Variations of kasha appeared under such French names as Kashajour, in which a deep fringe was woven in the material (11, p. 36) and Kashatoil, a kasha with a linen weave. In 1925 a kasha variation was made of a combination of wool and silk, and in 1927 the French master weaver offered gold flecked kashas (2, p. 96).

Woolens for the period steadily diminished in weight and became increasingly softer, more supple and airy—gone were the scratchy woolens. One important fact noted about them was that they had entirely lost all aspect of thickness. They seemed to have as much body as was needed for a winter coat; yet they never seemed heavy. As an example of this, tweeds had had the reputation as being bulky, solid materials, but now appeared as feather weights and even in the thicker versions gained in flexibility. Woolens and silks imitated each other in weave, in appearance and even in character.

In 1925 the term "ensemble" grew to mean not only a matching coat and dress, but any costume in which there was an underlying harmony between the two parts (54, p. 70).

The most striking feature of the new fabrics in 1927 was their insistence upon sports materials. The most important feature of these was their added lightness of weight. This increased lightness quality was a forerunner
of the mode which demanded freedom of movement for its wearers.

A trend of significance in the attitude and shopping practices became pronounced. Shoppers had more fabrics from which to make their choice. The great fabric manufacturers had blazed a good deal of useful information into the shoppers' consciousness and increased their vocabularies enormously. The up-to-date buyer no longer went into a shop, asking for serge or twill, she became more fabric-minded, and used tradenames for certain types of cloth. She demanded excellent quality; knew what she wanted when she wanted it.

At the beginning of the thirties there was a distinct trend toward the materials that had had a prominent place in every woman's wardrobe a generation before—namely, serge, wool duvetine, broadcloth and cheviot. Interest was focused on the development of existing weaves rather than on revolutionary new ones. A novelty weave was a rarity; however, an exotic appearance, reminiscent of native hand weaving, was imparted to the new materials by the use of uneven threads and the use of overhairs. Combinations of sheep's wool, hair fibers and feathers, such as rabbit, kemp, llama, ostrich, gave these fabrics an individual appearance as well as a particular high luster. Jerseys were infinite in variety and ran from gossamer
fineness to those which were so thick and heavy that they looked like hand knitting, done with Berlin wool and big needles (38, p. 54).

The depression had been making inroads in all phases of industry and the wool industry was no exception. It faced one of the most crucial periods in its history. A lack of leadership was evident. Not leadership in the sense that it lacked intelligent, aggressive, foresighted men. There was an abundance of such men; but, to a distressing degree, they were playing lone hands. The industry was clinging to the traditional individualism, to price-cutting, to overproduction, to haphazard merchandising—all of which crystallized in a sort of fear paralysis which defeated progress (53, p. 43).

Manufacturers of wool materials had applied mass production to the making of novelty merchandise as had been their practice in the production of staple lines. The result was that the novelties, necessarily shortlived in popularity, glutted the market.

1934 was a record low spot in the history of wool consumption in this country. The year 1933 was a brighter one with large sales and steep gains in inventory values. Wool consumption in 1934 fell below 1933 by approximately 200,000,000 grease pounds, the comparative figures being 488,500,000 pounds in 1933 against 280,000,000 pounds in
1934. The use of domestic wool in 1934 was only 65 per cent of the preceding five-year average consumption of 433,000,000 pounds. Total imports of foreign wools for clothing purposes into the United States for 1934 amounted to only 17,199,000 pounds as against 50,853,000 pounds in 1933, a decrease of 62 per cent (21, p. 115-116).

The gravity of the situation prompted action. A wool promotion plan was submitted to the industry in the middle thirties by a joint committee, representing a sales promotion committee of the North American Wool Manufacturers, and a publicity committee from the National Wool Trade Association. At the completion of their study and active field work these committees turned over their data and recommendations to the above named associations, and, in addition, to the National Wool Growers Association.

The report showed a decline in the consumption of wool and the manufacture of wool cloth, as well as wool's loss of favor in the consuming market. It visualized in a practical way how the heretofore unused forces of publicity, fashion exploitation, and retail merchandising, properly used could arrest the decline of wool (63, p. 65).

The following year, 1935, was in striking contrast to the previous ones; the wool industry made a striking comeback in activity. Manufacturers were less inclined
to create bizarre new fabrics whose only possible outlet was in the limited novelty field, and produced new and profitable merchandise out of established lines. Two outstanding examples of this movement are: first, the light-weight woven wool shirting for men, a sensational new use in 1932, and, second, the knitted polo shirt, a nation-wide success of 1934 and 1935.

By this time wool had refused to stay within the boundaries of its long accepted cliché. The old restrictions of season and style were rapidly tossed aside for developments in sheer weight dress fabrics for formal evening gowns and other light weight fabrics. "Cool wool" was advertised in tropical worsteds as ideal for summer sportswear (13, p. 64). Snow and ski suits attained a tremendously large and growing market. A Forstmann fabric called, Porosa, an entirely new wool sheer, made its debut in 1937.

Wool was given several opportunities in the thirties to show itself in story form and in the newest fashions to people from all parts of the world who attended the expositions in Europe and in the United States. The first of these was the French Colonial Exhibition in 1930 in Paris. Several exotic weaves in wool in white made their appearance.
In 1933 the Chicago Fair focused attention on forty years of textile progress—wool was given a conspicuous place. At a fashion group's annual showing entitled "The Perfect Wardrobe", in the autumn of 1935 and presented in New York City, were seventy-five fashions in a variety of wool, silk, and rayon fabrics. Wool appeared twenty-eight times as the dominating textile in the costumes which used novelty versions and the staples such as flannel, broadcloth, jersey, tweed, gabardine, wool crepe and homespun (23, p. 67).

The days approaching the coronation in the British Isles in 1937, found the Parisian dressmakers and tailors displaying not only British wool textiles but British designs and colors as well. Fine, soft tweeds, slubbed and nubbed tweeds, cheviots, Shetlands, striped flannels and jerseys, plaided mannish suitings, worsteds, classical serges, fine diagonals, and plain and printed cashmeres predominated in all collections.

Coronation gaiety prevailed in all textiles with the exception of sober mannish suitings. There were the Scottish clan plaids, Coronation stripes, 'Prince of Wales' plaids, cashmeres printed with crowns, lames with 'God Save the King' worked out in metal threads, and plain silks and wools in stained-glass and heraldic colorings.
The Expositions held in New York and in California in the late thirties also featured wool shows as a part of the textile educational displays.

The national defense effort dominated the American business scene as 1941 embarked upon its eventful career. In that year, fabric styling had to weave its way in and out among many government regulations. There were priorities on raw materials, metals and chemicals, ceiling prices on cotton and rayon goods, the freezing and removal of silk from fashion use and the enforcement of the wool labeling act (42, p. 24).

1941 also saw the beginning of fresh interest in materials made from protein yarns which were looked upon as possibilities to relieve the shortages of rayon. The latter was slated to be the basic fabric for civilian clothes, particularly for women's dresses (42, p. 64).

Wool materials led a comparatively untroubled life in contrast with silks and rayon, for that market continued to be provided for with British imports, these accounting for, in great part, the big popularity of plaids and checks for suits and separate coats (42,p.64). England, during the "Blitz", sent to the United States her lovely wool fabrics. Wool was a war necessity in England, but not all types were war wools. The sale of these fabrics brought revenue with which to buy many
other things sorely needed in time of such an emergency. England's courage seemed to be embodied in these cloths; they reflected color, and a newer and fresher feeling of style (14, p. 214-215).

Fashion trades in the United States missed the exquisite French wool cloths that had been their good fortune to receive for years past. Since the fall of Paris in 1940 the flow of Parisian goods had been stopped by the enemy. Also outlawed was her couture. Many of the dressmakers and designers came to America to continue with their fashion interests for the war's duration (14, p. 1, 10).

Fashion designers found that their long beloved phrase "fashion decrees," was no longer being issued—rather fashion was taking orders from the war effort. Since the needs of the armed forces and lend-lease commitments had first call on the stocks of raw fibers and the textile machinery of the country, fabrics for the civilian were presented with more of an eye to staples and good design and less to novelties and promotional themes (7, p. 73).

Government order L-85 promulgated the dual aim of saving millions of yards of cloth by limiting skirt widths, dress and jacket lengths. Any radical changes in styles were also prevented which would inevitably
result in many still-wearable garments being discarded solely because they were outmoded (7, p. 75).

The average woman is far removed from the raw materials out of which textiles are fabricated. She is almost completely unfamiliar with textile manufacturing processes, and is therefore unable to judge the intrinsic value of materials she buys (35, p. 70). Formerly, it was a relatively simple matter to determine whether a fabric was silk, cotton, linen or wool. But with the tremendous increase in the use of substitute fibers in products simulating wool textures, it has become difficult, and in many cases impossible, for the consumer to judge the actual fiber content.

Consequently, the passage of The Wool Products Labeling Act of 1939 by Congress was the culmination of a long-felt need for more adequate control of the widespread deception and unfair competitive conditions rooted in concealment or nondisclosure of the composition of mixed fabrics (47, p. 19). The Act became effective in July, 1941. It requires all manufacturers of fabrics or other products (except upholstery and floor coverings) containing wool to attach to the goods a tag or label stating exactly the percentage of wool and/or other fibers present. The statement of fiber content must be carried, without any single change in the original
percentage statement, until after the product is sold to the ultimate consumer. In disclosing the wool content, the percentages of WOOL, REPROCESSED WOOL, and REUSED WOOL, which are present in the product, must be stated. (See pp. 13, 14).

The law establishes three classifications for wool fibers, namely; wool, reprocessed wool and re-used wool. The term Virgin Wool is not specifically defined under the Act. The definition has been established by the Federal Trade Commission under its general powers, bestowed by Congress.

The post-war tendency in woolens and worsteds was a noticeable and definite departure from those fabrics made available during the depression years and war-time periods. The new fabrics, that replaced the nubby, coarse weaves, spelled feminine elegance (28, pp. 30, 68, 70), instead of utilitarian purposes. The light-in-weight, non-bulky, comfortable-to-wear, easy-to-drape fabrics were in demand for the "new look" fashions. Gabardine appeared in a new variation made from fine single warp yarns which combined a shiny, smooth surface and supple body. Another newcomer was the two-ply both way gaberdine created especially for women's suits demanding a fabric that will tailor crisply. It was distinguished by a new construction that conformed to the fashion
desire for gabardines that were finer and softer than mannish types for suits, toppers and three piece costumes.

The expansion of luxury feminine fashion ideas in the woolen market was especially notable, bringing a revival of broadcloth and soft, light crepy woolens—many with crisp hand. Luxury broadcloths, tweeds, and soft sheer worsteds made a bid for the autumn wools. Serge came back into a place of importance. This was due to the impetus given by the Gibson Girl fashions.

The American Wool Council, a non-profit, non-political organization, has reported that Americans, per capita and as a nation, consume more apparel wool than do the inhabitants of any other country. A greatly increased population and total employment at record levels has jumped consumption from some 600,000,000 pounds annually in prewar years to more than a billion pounds. The fleece of half a sheep was adequate to meet our per capita requirements in 1939; today it takes a sheep and a half. (61, p. 3).

There is a paradoxical situation in America at the present time. The demands of an increasing population for the finest in wool products exists. Meanwhile, there is an increasing difficulty in obtaining the raw wool necessary for those products. This is due largely to a
declining sheep population in America and Australia. In the case of the latter country, the loss is due mainly to a severe drought. This creates an acute shortage of fine and superfine wools needed for the market.

According to the American Wool Council, in pre-war years the United States imported an average of thirty per cent of the wool we consumed. In 1948 on a peace time basis we must import between seventy and eighty per cent of our requirements (48, p. 25).

Without an adequate supply of fine wools, the industry must investigate the possibility of using more medium grade wools of which there is a greater supply. Leading textile scientists believe there is great opportunity in the modification of lower grade wools to permit their use in fine texture fabrics. In the meantime, wool fabrics with worsted warp and woolen weft are appearing in increasing quantity.
Developments and Changes in the Finishing of Wool Fabrics

The weavers of wool fabrics have known that cloth, as it comes from the loom, is to undergo few or many finishing processes to attain its final surface texture, its hand, its color (if not made of dyed yarns) in totality, its presentable form. Each process does not necessarily effect a change in the cloth, it may be corrective work concerned with the eradication of defects occurring at some stage of manufacture (4, p. 19).

Finishes used on textiles differ in characteristics—such as method of application, permanency and the type of finished product and its use or wearability. The type of fabric to be treated influences results, and the construction of the finished garment or product must be suited to the result desired.

Practices of long standing as: scouring, carbonizing, fulling, dyeing, napping, shearing, brushing and pressing facilitate manufacturing processes, also, increase consumer appeal in the finished product. In number such operations have remained virtually at a standstill for a long period of time, however, within this century changes have occurred that have translated the discoveries of research laboratories into every day mill
practice.

One of the first of these to be applied to wool is the cleansing of the fiber. Old operations used soft water and soda soaps—now in recent years these may be replaced by reagents which are most effective in their scouring besides leaving the fiber free of film to be a subsequent problem for the dyer.

In 1935 the most startling innovation, from the standpoint of originality or bold departure from tradition, was instituted in the form of subjecting wool to refrigeration. A series of interesting experiments in Lowell, Massachusetts culminated in the Frosted Wool process, which freed wool from its vegetable impurities to the fiber (51, p. 114).

The "frosting" process is not complicated or expensive. Less scouring is necessary than formerly, and this in turn means economy in soap, alkali, steam, and water. Tops have better color, and feel and noils are more valuable, with few exceptions require no carbonizing. The wool fibers run better in subsequent processes with a noticeable effect in the superiority of the ultimate yarns (51, p. 114).

Although wool is known for its affinity for dye-stuffs and its tensile strength, it is however, sensitive
to certain influences including light and air. The tips of the wool fiber on the sheep receive more exposure than the roots and it has been found that these parts absorb dye-stuffs to a different degree causing unevenness. It is obviously impossible to prevent this exposure and its effect but recent study on this problem has resulted in the discovery of a method for preventing exposed wool from absorbing dye unevenly.

One property of the wool fiber which has aroused much comment and criticism in technical and public circles is its tendency to shrink. Shrink-control processes as applied to wool textiles are of comparatively recent development and only a limited number of fabric constructions have yet been successfully processed for shrink control.

The processes used may be divided into two classifications—physical and chemical. The former consists of treating or mechanically impregnating the wool cloth with resins. In the latter, the chemical treatment modifies the properties of the fiber which reduces the natural tendency of the fiber to felt. Chlorine or chlorine compounds are the chemicals commonly used. If the fabric is treated with chlorine, the dye must be fast to this chemical if it is to be made shrinkproof after the
dyeing process. In the resin treatment, this makes very little difference.

The treatment of textiles by resins is showing that the potentialities are far reaching as illustrated by one of these plastics for textiles called Resloom. Through the use of a melamine formaldehyde type resin, developed by the Monsanto Chemical Company, fibers and fabrics can be modified to achieve effects that cannot be produced by changes in weaving, yet the inherent properties of the fibers are in no way altered. Among the desirable characteristics imparted to fabrics by this treatment are; shrinkage control, crush-resistance, yarn slippage control and prevention of distortions of knit goods in laundering (41, p. 1).

Another process, Lanaset Resin, a product of American Cyanamid Company, was devised to remove the tendency of wool to shrink or mat and at the same time to keep the desirable qualities of the natural wool. Every garment made of Lanaset-treated woolen fabric is guaranteed not to shrink in excess of 5% during the life of the garment if washed in accordance with the recommended method printed on the identification label attached to each garment (30, p. 1).

Another still newer shrink proof process is the proposed use of enzymic preparations. The inventors dis-
close that in this method they have discovered that wool can be made substantially non-felting by treatment with an enzymatic solution.

In the words of F. Eugene Ackerman, Textile Consultant and Executive Director of the American Wool Council:

There is as yet no process which can render wool or any wool produce shrinkproof. This absolute term should be banished in any honest description of any of the processes now being offered on the market....

American Wool Council recently joined with a group of wool textile mills and chemical companies producing shrink-proof processes in requesting the Federal Trade Commission to take steps toward formulating fair trade practices in the promotion and marketing of shrink resistant processes for wool textiles (1, p. 30).

The problem of eliminating the excessive shrinkage which occurs in wool cloth during laundering is much more serious and difficult. Even though shrink resistant processes have been known for fifty years, none had attained a foothold in this country prior to 1944. At that time research was conducted under the sponsorship of the Research and Development Branch, United States Army Quartermaster Corps, which resulted in at least a partially practical solution to the problem of shrinkage control of the army's big item, the cushion-sole sock. Considerable development work remains to be done before
"washable woolens" come into widespread use. The problem still is complicated by the fact that each fabric construction presents an additional problem; thus a treatment for one fabric is inadequate for another. Before the advent of rain garments the women of the last century depended on heavy woolen garments as a protection against rain. A natural fiber, such as wool, has been imbued by nature with water resistant properties, however, additional water-repellent properties have been obtained by chemists and physicists.

The modern term "water-repellent" is not synonymous with the term "waterproofing"--a vast difference exists between the two. Waterproofed garments are made from fabrics that have the yarns or fibers coated with a film of water-impervious substance which is generally of rubber, plastic, oils, fats and waxes. The pores of so-treated fabrics are completely closed so that water and air cannot pass through. The treatment leaves the fabric surface, harsh, heavy, unattractive, and lacking drapable qualities.

Fabrics treated to water-repellent finishes are not impervious to water as the spaces between the yarns are not closed, it is to the individual fiber that the finish has been applied. The fabric may have other
features added such as, resistance to spots and stains, perspiration, and improved hand.

Water-repellents are classified as renewable and durable. Trade names of some renewable ones are Impregnole, Aridex, Cravenette, Rainfoe, and Aquasec; of some durable water-repellents, Zelan, Norane, Long Life Cravenette, Storm-King, and Wat-a-tite (52, p. 89).

The Cravenette Company of the United States used as its trade-mark the term, "Cravenette." This finish was first used and advertised in this country in 1886. This trade-mark was originated in London about 1877 by a group of men who had discovered a method of making fabrics water-repellent. The method used by this company is a water-repellent treatment of cloth which does not close the pores and, therefore, permits a free circulation of air. The company maintains that there is no perceptible change in the color, feel, or finish of fabrics that have been treated with "Cravenette" water-repellents (39, p. 1).

Another finish so long desired so little achieved is moth-proofing. Many compounds have been offered for use in the processing, but, so far, only one, "Boconize" recently developed, is the first moth-proofing substance to be awarded the Certified Merchandise Seal of Quality of the United States Testing Company. It was developed after twelve years of research and is said to provide
protection without altering the "hand" or "feel" of the material, resisting both washing and dry cleaning.

Announced first in 1940 and developed during the war years is a gossamer weight wool fabric by a firm at Leeds in England. Used with the wool fiber is a soluble yarn, an alginate carrier, that enables the wool manufacturer to fabricate woolens and worsteds weighing as fine as one and a half ounces to the square yard. The seaweed derivative coats each single wool yarn, provides sufficient strength to make weaving of sheer fabrics possible, and then it is dissolved in a bath. Their structure lends well to openwork effects and latticework in women's wear, that is, blouses, evening gowns and lingerie. Newer developments in 1948 report that a fabric has been made from ninety-five per cent wool and five per cent nylon yarn in the final cloth using an alginate rayon yarn as the carrier thread, which is later dissolved out of the cloth structure. Rodier has launched a wool chiffon which weighs one and a half ounces per square yard.

Never before have finishes played such a role as in the present era of the new silhouette. Finishes have for many years played a paramount part in merchandising textiles, but with the demands for crisp fabrics to meet the fashions in vogue interest is focused on pleasing the
mass markets. (46, p. 22).
CHAPTER IV

SUMMARY

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To determine the wool fabrics, their names and description which were used in women's apparel since 1900, to determine the general tendencies in the development of wool fabrics used in women's apparel in that era, and to make a collection of the materials which represent the staple items used in outer clothing has been the intention of this investigation.

More than fifty names comprise the list of staple items in woolens and worsteds for women's wear; knitted fabrics are represented, but are few in number in comparison to the woven items.

Since 1900 the basic wool fabrics for women's apparel have remained fundamentally the same in name and in distinguishing characteristics. The term "albatross" or "serge" refers to the same fabric today as it did a few decades ago. Unfortunately, however, for the consumer, words which have been of long usage to mean wool materials have come to be widely used to describe fabric textures and weaves. Tweed now refers to a large group of fabrics.
in a variety of weights and construction as well as to a particular fabric. Also, terms such as "gabardine", "flannel," and "broadcloth" are now used to describe many fabrics not made of wool.

A very few of the wool fabrics, which were in use during the first years of this century, are now obsolete. No longer are Henrietta and prunella manufactured. Other wool materials, namely: crepes and gabardines, have gained in popularity thereby establishing themselves as standard items.

These basic materials are the ones to which consumers turn again and again because of their inherent good qualities. They may vary a little from year to year as broadcloth is shiny at one time, dull at another and with a novelty variant, as a textured pattern in the nap, at another.

Each year different materials meet with consumer appeal. No definite order of repetition can be formulated. A fabric which enjoyed a strong season may not be the strong favorite the following season. Economic conditions have a direct bearing on the choice made by the consumer.

A noticeable difference does exist in the weight and the tailorability of the present day materials as contrasted with those of the early years of the century.
Then the standard grade used for apparel was relatively a coarse one; today's standard is a finer grade. Lightness of weight and firmness of texture are truly an indication of today's attitude toward fabrics. The emphasis is on beauty rather than on durability.

In the call for modern sophisticated fashion fabrics, the old established elders which were made to give service and whose quality was judged by body and weight, have given way to the new. More yardage in a costume places heavier accent on thin, drapable costume fabrics of seven and a half to eight and ten ounces. Dress worsteds in particular are getting sheerer with each season. Coatings and suitings have become less heavy, the fifteen ounce weight is preferred for the full-length, wide-swinging coat.

Manufacturers have been successful in investing wool fabrics with year around appeal. The unique construction of the fiber is responsible for the adaptability of wool to summer as well as winter wear.

In the past few years progress has been made in giving wool cloth special or functional finishes, additional to those given to produce desired surface effects. These treatments are capable of altering the properties of fiber, yarn, and fabric. Some of these developments render wool fabrics water-repellent, waterproof, resistant to
moths, fungi, germs, creases, wind, and fire.

Fabrics or merchandise made of fabrics given any of these special finishes usually carry a tag or label stating the type of finish, what its effect is, and the method of its care.

The Wool Products Labeling Act stands as an effective corrective bringing to the manufacturer the distributor and the dealer, as well as the consumer, factual information of the true fiber content of wool fabrics and of blended wool fabrics.

All types of wool materials are now made in the United States and manufacturers have established their mill names or names of their outstanding products in the minds of the buying public. Foreign fabrics are imported to this country but have not been extensive for many years. They have averaged about two to three per cent of the value of our domestic production.

The average woman of today has a more diversified wardrobe than her counterpart of twenty-five or fifty years ago could claim. There are novelties and staples to meet every need—from formal coats to riding shirts, from skating skirts to tailored suits and from raincoats to evening wear.
The United States today consumes more fine apparel wool than any other country in the world. Consumption far exceeds the prewar rate. Research in this field is concentrated on improved methods of spinning qualities of fine wool and on giving a softer feel to fabrics made from medium wools which are now by-passed by the public in favor of materials made from the scarce fine wools.

The collection of staple materials represents the types used in women's apparel since 1900. The fabric name, its construction, distinguishing characteristics and ultimate use are included.

Suggested Further Investigations

1. A study of the wearability of wool fabrics as compared with wool blends.
3. A study of knitted wool fabrics used for outer wearing apparel, improvements and changes brought about in fifty years' time.
1. Ackerman, F. Eugene, "No Wool is Shrinkproof Yet," Textile Colorist and Converter, vol. 70, no. 4, April, 1948.


Virginia.


54. "The Ensemble Costume," Vogue, vol. 64, no. 6, September 15, 1925.


59. "What War has done to Clothes," Vogue, vol. 52, no. 8, October 15, 1918.


