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THE PROBLEMS AND TRENDS OF THE WOOL TEXTILE INDUSTRY

by

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Those of you who have either lived in or visited Southern California have some idea of the affection the people of that community have for their state. An Easterner saved his money and by and by found that he had enough to go to Southern California and buy a ranch. He went to Southern California, bought a ranch, settled down, and tilled his few acres. After he was pretty well established for no good reason at all in Southern California, he died. The neighbors and friends gathered around to pay their last respects. The preacher apparently had forgotten all about the funeral. He was delayed so long that the folks began to be rather annoyed and worried. By and by a native son who was sitting quietly in the corner arose and said: "Friends, I do not know whether there is going to be any one here to say anything about the deceased or not, so in the meantime if you do not mind I will just say a few words about Southern California."

That is somewhat the way I feel about the wool textile industry. I am rather a curious individual in that I am very fond of the business that I am in.

I consider it a great privilege to be able to come here this morning, and I want to thank Colonel Jordan for the opportunity he has given me to occupy your platform for a few minutes.

The wool textile industry goes back a good many years. As a matter of fact, it dates back to antiquity. Even the Egyptians used wool garments, and the Romans used wool to make their best vestments. An interesting observation relative to the manufacture of wool in ancient Rome is that they had two types of cloths: one was known as "Trita" and the other was known as "Densa." The Trita was made of long fibers, a thin, flimsy cloth comparable to what we today call a worsted. The Densa was a thick, bulky cloth comparable to what we today would term a woollen.

Contemporary with ancient Rome, the Incas in Peru were using animal fibers and dyeing them with natural colors - some vegetable. The Incas developed a purple,

similar to the royal purple that was produced in the fine wool fabrics in ancient Rome, by using the extract of the murex shellfish, which was identical with the method used by the Romans. When the Romans invaded Britain they discovered that the Britains were wearing sheep skins, furs. You can well appreciate that when the men from Rome invaded a country such as the British Isles they would naturally wonder what they could do to keep warm. The Romans made rather hasty observation of the apparel worn by the Britains and before very long had established what is probably the first organized wool textile factory in the world. The invading army made some sort of apparel of wool in an organized fashion under the factory plan to cover the bodies of the Romans during this period.

We are going to step along very rapidly because I do not want to devote too much time to this history; however, I do want to follow the continuity, if I can, of the development of the wool textile industry and the important part that it has played in the development of industry in general.

Let us now think of the James Watt's patent, which was a condenser that made the steam engine of that period economical and practical. The steam engine at that time was used largely for power to operate pumps for removing water from mines, and the device that made it practical for other purposes was James Watt's patent. Industrial development began to take place very rapidly at that time because it was contemporary with Watt's basic patent that the first improvement in spinning wool yarn was made. The old hand wool wheel, which you see quite often, the large wheel with the single spindle, was the commonly used device for manufacturing wool yarn.

Immediately following that the spinning jenny was invented. The spinning jenny operated by hand and spun eight threads at a time instead of one, using almost the identical principles of the hand wheel.

The hand spinning wheel. I would like to describe this process to you simply as a matter of information. It may be helpful in the discussion later. Card rolls are made by hand carding wool. A hand card is like a brush. The points on the brush are turned back and sharpened so that if you lay wool between the two you

very soon have this effect (illustrating) and a roll created between the two. In hand spinning the operation was this: The end of the roll was fastened to the spindle. The operator then took hold of the large wheel, turned it very slowly, walked away with this hand (illustrating) to draw out a thread, and with the right hand turned the wheel to give the twist, then two or three revolutions to tighten the twist, then a revolution or two to run it on to the spindle, and then repeated the operation until the spindle was full of yarn.

The spinning jenny did the same thing except that the inventor of the jenny ran the spindles in a row, driven by a large wheel. Instead of carrying the threads by hand, the jenny had a carriage with the spindles mounted on it that moved back and forth.

Following the jenny came the mule. Crompton invented the mule in 1794. The mule was exactly the same as the jenny in principle, and in principle the mule is exactly the same today as that primary invention of Crompton's in 1794. The mule was not different in principle to the jenny except that it was operated by power and spun four hundred threads at one time. If you observe a mule today with its round of complex motions, it reproduces the motions of the spinner at a hand wheel. With the roving spools mounted on top of the mule the carriage will move outward, the roving spool will deliver enough roving to the spindle to create a yarn. When the carriage has reached a given point the roving spools stop, the carriage continues to draw the condensed sliver into a yarn; the spindle delivers the twist, and when the carriage returns it is wound on the spindle.

A little later the power loom was developed. Then the first labor unions came along. The development of the labor organizations at this period is very interesting. They were prompted because of fear. It was the common belief at that period that the coming of machinery would displace the craftsman who had previously been working by hand. It is true that at the initial development of machinery in the wool textile industry this did happen. The labor movement was organized and a labor leader of that period by the name of Ludd organized the workers to destroy the machinery. They were reasonably effective, too, and resulted in Parliament passing a law, called the

"Coalition Law," in which labor unions were prohibited. This law brought about a great deal of labor trouble and with it bloodshed. It was thirteen years from the time Parliament originally passed the law prohibiting labor unions until the law was repealed in 1824. In 1824 Parliament decided that it would no longer prohibit labor unions but passed legislation regulating them.

The first carding machine in this country was built in 1794. The wool textile industry played a very important part in the Colonial organization in our country. Its development, however, was not large until the early part of the nineteenth century. Our development in this country is contemporary with the large expansion in England. I do not mean by that our large expansion in the wool textile industry, but our development was contemporary with the expansion in England and the expansion in England in the early part of the nineteenth century was substantial.

We could go on talking about the history of this industry for a long time. To me it is an interesting heritage. It is a product that only time can develop. We suffer under the penalty of age, and that is perhaps the greatest handicap under which the industry unconsciously operates.

The greatest contribution to the wool textile industry was the Spanish merino sheep. The Spanish merino sheep was the greatest contribution primarily to sheep husbandry and from that to the wool textile industry itself. The Spanish merino, of course, originated in Spain. It was propagated and cultivated to some extent prior to that, or contemporary with the Spanish cultivation, by the Moors, and for a great many years it was prohibited by law under penalty of death to export a live sheep from Spain. The first exportation did not take place until about 1723.

The early breed of merino sheep, which is the father of all the best wools that we have in the world, was not white. It was a natural color, similar to what we term a camel's hair today, also gray to black. Only by constant breeding over a great many years, when white sheep were discovered and then properly bred, was the white

sheep developed. Even today throughout flocks we get a variation, gray to black. In the west in our big ranges, the black sheep are kept to be used as counters to estimate the number in the flock.

The Spanish merino sheep were first exported from Spain commencing in 1723. They spread rapidly all over the world, and the development all over the world lasted for almost a century. In 1609 the first sheep were brought to this country. In 1633, I think it was, the first sheep were brought to Massachusetts. When it was possible to bring fine rams from Spain, merino rams were brought to Vermont and there was developed what are known today as the "Vermont Merino" - a very fine breed of sheep, large in frame, very full weight of fleece. Sufficiently important is the Vermont merino to have been exported to Australia, where it has been cross bred with their sheep with great success.

The quality and strength of wool depends upon the quality of the pasturage, the quantity of the pasturage and feeding, the breed, the age, and the racial descent of the sheep. Wool in its growth is accompanied by a liberal supply of wool fat, wax. With it, too, is quite a large percentage of suint, or yolk. Suint, or yolk, by the way, is dried perspiration. Because of this condition in its development, the wool acquires very readily great quantities of dirt as the sheep move around in pasturage or during winter feeding.

In scouring wool we primarily wish to remove the dirt and grease, the yolk, and any other foreign matter. The individual wool fiber is covered with minute scales. It is these scales on a wool fiber that makes it possible to spin wool and it is primarily these scales that give wool its felting qualities. It is crinkled, curly, with a natural wave to a greater or lesser degree, according to the quality. In using the word "quality" we think in terms of diameter, as the diameter becomes smaller the quality is finer; as the diameter becomes greater the wool becomes lower.

Chemically wool is made up of carbon, hydrogen, nitrogen, and oxygen. It is similar in chemical construction to all animal hair, the hoofs of animals, or any of the epidermal or skin products. It has the

unique ability of being able to accept and reject moisture from the atmosphere in direct proportion to the atmospheric conditions that exist. In a damp climate, such as England has, it will automatically acquire from 18 to 24% of its weight. In eastern United States, where the climate is drier than it is in England, it will acquire 10 to 15%. On the West Coast, in Southern California or Arizona, it will acquire still a lesser percentage. In the industry we call this loss and regain. It is this hygroscopic nature of wool that makes it so valuable from the standpoint of its health-giving properties. You can readily understand that a fiber that will readily accept moisture to this extent can be of great assistance in the ventilation of a body and at the same time act as an insulator.

Under hot water or steam, wool becomes soft and pliable. This is very important from the standpoint of finishing because once a given point has been arrived at and the cloth set it will always retain that position. That is very valuable. An amazing thing about wool is that it dissolves in caustic alkali, it is not destructively affected by acids and it is the most susceptible to the phenomena of dyeing of any of the textile fibers. In other words, in the industry we speak of wool being alive, on account of these properties.

There has been distributed a rather simple flow chart of the processes in the wool textile industry. We have called this "The Processes in the Manufacture of An Apparel Fabric." There are a number of deviations and different processes other than the ones given on this chart, but this covers substantially the flow of wool through its major operations in manufacturing. The chart has been prepared to try to explain the difference between a worsted and a woollen. There seems to be a confusion of ideas as to these two processes.

Beginning with wool, the first operation is naturally taking it out of the bales, opening it, and sorting it.

First, however, let me tell you about the method of shearing a sheep. When a sheep is sheared the shearer begins under the body, proceeds over the haunches and up the back and shoulders. There is sufficient grease and yolk in the fleece to hold it together. The individual

fleece is laid on the floor, the sides folded in, then folded over again, and rolled up and packed as it is sheared. It is handled that way for a very definite reason - so that when the sorter opens the fleece he can lay it on the table with the part that was next to the skin down and the natural wool side up, and he has the location of the neck, four legs, shoulders, back, etc. Wool varies from fleece to fleece and according to breed. Wool also varies in the individual fleece in diameter, in grade. Across the shoulders it is best, farther down the back it is a little lower, to the right of the shoulders it is still a little lower, and the lowest sort in the individual fleece is under the body, or, on a fleece laid on the table, on the outside. The sorting operation, if we know substantially the grades which the fleeces are running, becomes a rather simple problem to the sorter because he knows the location of the different sorts. He opens the fleece and pulls the sides off and the other sorts as he requires them. These sorts are put in separate bins to make separate lots.

Wool scouring is a simple operation. Common, ordinary soap, soda, and ammonia with water are used in the first bowl at a temperature of about 140 degrees. The wool travels through to a second bowl automatically. The number of bowls depends upon the thoroughness of the scour required. The number of bowls in a scouring train varies. The last one, of course, is a rinse bowl.

The wool is then dried and is ready for the subsequent manufacturing. You will notice on this chart that following scouring we have divided wool. We will follow the left line to where we trace the worsted system into preparing or carding. The object in making a worsted is to keep the fibers parallel. In other words, we are trying to develop a yarn that is as straight as possible. The first operation of importance following scouring is that of carding. This is done mechanically and is exactly the same principle as the hand card of the old days. The carding engine is rather a large machine - cylinder workers and strippers. The wool is first mechanically opened in a breaker and opener before going into the card, where small lumps, bits of bur, straw, etc., are thrown out. It is then laid on the cylinder of the card, the cylinder revolving. Next it is met by a worker and stripper that performs mechanically

the operation that we talked about a few minutes ago - brushing out the wool so the fibers will lie parallel. Primarily in worsted manufacturing what we are interested in is to have the fibers lie parallel as quickly as possible.

Preparing is an alternate method of manufacturing. Backwashing (backwashing is a second scouring) is followed by a gilling operation. There are a number of gillings and drawings in worsted manufacturing. A gilling operation is a method of running the sliver through a set of vertical combs. These combs are driven by a worm. The speed is increased as they near the delivery point of the sliver. This operation is performed mechanically as you would perform it by hand by drawing a comb through the wool. This operation is performed to lay the fibers still more straight. An oiling operation takes place at this point, and then it is ready for combing. The oiling operation in worsted manufacturing is important because the operations are performed at high speed and the wool must naturally move or slip readily. In other words, if it were dry, assisted by the natural scales on the wool it would very soon burn and perhaps break; therefore it is lubricated. This has been done for a great many years with olive oil but recently there has been a change in the olive oil situation and substitutes are being used. We are now ready to comb. Combing is the operation that removes the short fibers from the long fibers. If you will look at this chart you will find that we develop two products: the long wool or tops, and the short wool or noils. The long wool is commonly interpreted as worsted and the short wool is used as a by-product. We will talk about its direction in a few minutes.

The drawing operation in worsted manufacturing is a number of processes of doubling and drawing to keep the fibers parallel as it is being gradually reduced in size to a yarn. You must appreciate that we are starting this operation with rather a bulky sliver and we are anxious to get it to a size of fine thread. Any variation that occurs in doubling and drawing will create a slub in the yarn so we are anxious to double and draw in worsted manufacturing as many times as we can economically to reduce the possibility of any unevenness in the yarn. This operation is rather a long

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one and from it we have some wastes that are used later in woolen manufacturing. The drawing operation continues until the last stage produces what we call roving. Roving is the condition of the stock prior to spinning it into yarn. In worsted yarn manufacture a small percentage is mule spun, but the large majority is spun on frames, an operation developed in England and commonly called the Bradford system. The spinning operation in worsted manufacture today is performed rather rapidly, and the only great change that has occurred in spinning worsted yarn in the last few years is the increase in the revolutions of the spindle and the increased size of the bobbin. I cannot very well describe the spinning operation to you. However, we have arrived at the point where we have yarn ready to make into cloth. It is a single yarn. If we want to double it to make a two-ply yarn or a three-ply or any other combination, it goes to the twisting room. If we want to use single filling in the cloth it goes to the winding department. The warp is made up of the threads that are in the lengthwise direction of a cloth; the filling is the threads that are in the cross-wise direction.

It is not easy to describe a weaving operation and I am not going to attempt it. You are all familiar with a loom. The loom is almost identical today with the original principle that was used in ancient times by hand. It has been improved so that today we think very little of running a loom 136 or 140 picks a minute - that is the number of filling threads per minute on a reasonably good efficiency, speaking of efficiency figured on a basis of the amount of stoppage that occurs, which is ordinarily required. You will probably be interested to know that today a weaver can operate six or more automatic looms with less fatigue than he could operate two or even one of the old type a few years ago.

You will note on the side of this process chart we have top dyeing. In other words, if we are making a cloth that is a mixture effect the top is dyed at that point and if it is a piece dye it is dyed after the cloth is woven, at some time during the finishing operation. The finishing operation is not simple. You perhaps wonder why we need a finishing operation. I can best tell you that by describing a cloth as it comes from the loom, even a reasonably fine cloth which any of us would wear, looks about as nearly like a burlap bag as anything I can

describe to you. From this description you can realize that the finishing operation, whether it is a worsted or a woolen, is very important. It is necessary to mend the cloth, remove knots, wash it thoroughly, and, in the majority of cases, to full it. It must also be sheared, pressed and properly set. These operations naturally vary according to the type of cloth that is being manufactured and the type of finish that is desired. There are of course other minor operations which we need not discuss this morning. The cloth then goes to the garment manufacturer. When the garment manufacturer cuts cloth for clothing he has two products: clothing and rags. The rags are used as a raw material for woolen manufacture. The suit is ultimately retailed to the consumer, who wears it out, it is thrown away, goes into the rag pile, and in turn will go to the reworked wool mill.

Wool is usually combed in the white so that we have white noils. It is, however, sometimes combed after it is dyed. If it is white and needs to be stock dyed, it is delivered to the stock dyeing department and then brought back for oiling and blending. There are noils and waste from the different departments in a worsted mill which carry into the blending and oiling department, and the clothiers' clips, the rags that are reworked, and the reworked wool travels forward to the blending and oiling operation.

The object in manufacturing a woolen is to create a yarn in which there is no attempt made to keep the fibres parallel and naturally the resultant cloth has more bulk and is less smooth and even. As a matter of fact, the great difference between a worsted yarn and a woolen yarn is that in a worsted yarn the fibres are parallel and in a woolen yarn the fibres cross at all angles. In worsted manufacturing we make cloths of the type of serges, fine sheer dress cloths, and fancy worsted suitings. In woolens, blankets, shawls, cassimere suitings and any cloth in which weight is more important than strength is manufactured on the woolen principle.

The blending of stocks in the woolen mill is a very important operation because of the variety of stocks used. Reworked wool has a great value. It has lost some of its strength but it has all of the natural properties of wool so that it has an important place in the manufacture of woolens.

At this point you are probably wondering if there are any woolens made entirely of new wool. There are many woolens made of entirely new wool, but we are discussing the customary methods of wool manufacture for apparel purposes and these fabrics are customarily made of a blend of stocks. Noils are new wool, just as new as tops, but the fibre is shorter. Worsted mill wastes are new wool and simply because they have been partially manufactured does not injure them for use in other types of woolens. A blend in a woolen mill might contain new wool, noils and reworked wool.

From the blending and oiling to a willowing or opening operation - willowing blends the stocks so that they work better together. It mixes the dyed stock and prepares the blend for carding. The carding operation mechanically is the same as that used in worsted manufacture, except that in carding for woolens there is a minimum of three carding operations, whereas in worsted manufacture there is usually only one. The woolen objective is the production of yarn with fibres lying at all angles, but the effect of carding is to draw the fibres straight. To defeat this effect, in passing the stock from one card to the next, the fibres are delivered to the succeeding card in a direction at right angles to that in which they came out of the last. Immediately when the stock leaves the finisher card, it has the appearance of a web and it is divided into narrow flat slivers and these are condensed by a mechanical rubbing device into a continuous roll and then wound on spools to be mounted on the mule preparatory to spinning.

In woolen yarn manufacture a small percentage is frame spun, but the large majority is mule spun. Weaving and finishing are similar to that we have discussed except in the case of woolens the finishing is of considerably more importance and more can be done in finishing. It is an old axiom in the industry that worsteds are made in the loom and woolens are made in the finishing room. To a measure that is true but not entirely. Then to the garment manufacturer and the consumer.

I hope that I have not bored you too much with this descriptive matter, but I think in the discussion that is to follow it may prove of value to you.

Practically all of the work is done by machine. The operators are more machine tenders than artisans, which is to be expected in the machine age.

ANALYSIS OF THE INDUSTRY

A. GENERAL CHARACTERISTICS

1. Delineation of Industry

The Wool Textile Industry is generally understood to mean the production of yarns, piece goods and blankets in whole or in chief value of wool. The Industry does not include the manufacture of carpets or rugs nor the yarns which are used for such manufacture. It does not include the knitting of wool outerwear, underwear, or hosiery but does include the wool yarn which goes into those products. The operations of the Industry are covered by the two classifications of the Bureau of Census - "Wool scouring" and "Woolen and Worsted goods."

2. Importance - national self-containment

The importance of the Industry is self-evident, whether measured in terms of national defense, in terms of capital involved, annual sales, numbers employed, or in terms of the comfort and convenience of people dependent upon wool products for clothing, bed coverings, upholstery or the other manifold uses to which the products of the Industry are put.

The Industry is entirely self-contained in that wool is grown in this country in substantial amounts and all processes from the shearing of the sheep to the manufacture of the finished fabric are completed in this country. Greater or lesser amounts of raw wool are imported from time to time to supplement our domestic supply, - the domestic wool clip being relatively constant whereas the actual consumption is subject to wide variations.

3. General Structure of the Industry

a. Number of individual units

The present number of units in the Industry as given by the 1935 Census of Manufacturers is 630. This represents a substantial decline from the figures of previous years. This decline is due in part to consolidations and in large part to the abandonment of units which have found it impossible to make a profit. It should be

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noted that there are not 630 units making the finished product, a certain number of these units concerning themselves with only one step in the process of manufacture such as "scouring", "combing", or "spinning". Many companies include all the steps in wool manufacture taking the raw wool and turning out the finished article. Units of this type control the greater percentage of the volume of business done in the Industry but there exist many concerns who specialize on one or perhaps a group out of the many processes but who are not integrated so as to cover completely the several steps required in the manufacture of wool goods.

b. Size of typical unit

There is no such thing as a typical unit in the Industry. One single organization composed of twenty-seven mill units, the American Woolen Company, accounts for approximately 18% of the entire product of the Industry.

Out of 493 weaving mills, a mere 21 concerns produce 50% of all woven goods turned out by the industry.

Seven mills account for approximately 35% of the total.

c. Domination by units or groups

With such a large percentage of the business volume of the industry in the hands of a relatively small number of concerns, it might be expected that those concerns dominated or controlled the market. Such is not the case, however. In fact, the competition of the many small units in the Industry is some times of more importance in setting market standards than is the policy of the larger units. This is largely because of the fact that by and large a buyer's market has existed most of the time since the close of the World War. Except for brief periods in 1933 and 1936 there has not been demand sufficient to allow the Industry to operate at full capacity. In a buyer's market there is little domination by the so-called leading units.

4. Capital Investment

No reliable figures exist as to the capital employed in the industry. There is no standard basis of

accounting and depreciation figures have been based in part upon rulings of the Income Tax unit of the Treasury Department and in part upon the degree to which somewhat meager profits may have permitted adequate mark-offs of capital assets. As a mere approximation a figure of \$525,000,000 might be suggested but it cannot be substantiated by any adequate proof.

5. Value of Product

The annual value of the product of the industry is not definitely known; it may be approximated more accurately, but the figures are not reliable. The census of manufacturers gives a figure of \$462,000,000 for 1933 and \$691,000,000 for 1935. The figure for 1936 should be somewhat in excess of either 1933 or 1935. The difficulty of getting an accurate figure arises from unavoidable duplication. For example, it is difficult to determine how much yarn is sold to other industries and how much to concerns within the Industry itself for further manufacture. In the latter case, of course, the value of the yarn is duplicated when the weaving company reports the total value of its product.

6. Value added by manufacture

The Federal Trade Commission gives figures for each six months period from January, 1933, to June, 1936, as to the value added by manufacture. These figures indicate that of the total mill cost (excluding administrative and general overhead and selling expense) approximately 50% represents raw material costs and 50% value added by manufacture.

7. Number Employed

We think of the Industry as employing roughly 150,000 factory workers. This figure varies considerably, however, with fluctuations in business conditions and in seasonal demand. The low figure for employment was reached in June, 1932, when the Bureau of Labor reports indicated only 78,000 employed. In August, 1933, just before the Code became effective the figure was 169,000. The recent high point was reached in December, 1936, when the figure stood at 164,000. Since then there has been a progressive decline, with the low point probably being reached in

October of this year. In addition to the number of factory employees, there are some 16,000 to 18,000 employed as overseers, foremen, supervisors, clerical help, salesmen and in other miscellaneous classifications.

8. Relationships of Above

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9. Geographical Distribution

The geographic distribution of the Industry is interesting, showing substantial concentration in certain areas.

In terms of loom capacity, Massachusetts alone represents 35% of the total. Massachusetts plus Rhode Island account for 48%, and if we add Pennsylvania the total is raised to 57%.

In terms of spinning capacity, Massachusetts represents 37%, Massachusetts and Rhode Island 59%, and Massachusetts, Rhode Island and Pennsylvania combined 70%.

The largest single concentration is in Lawrence, Massachusetts. Other centers are Passaic, New Jersey, the district around Providence and Woonsocket and the Philadelphia area.

There is no factor which controls the geographic distribution of the Industry. The Industry grew up in New England and in large part has remained there because no compelling reasons suggested migration. That probably accounts for the fact that Boston is a logical point of distribution in raw wool and the trend from the rural communities into the manufacturing centers with the development of our industry after the Civil War. The market for raw wool is Boston, Massachusetts, but that fact has no practical bearing upon the location of the mills. A few units have been established south of the Mason & Dixon line but less than 7% of the Industry is so located.

The particular site chosen for a wooltextile mill is always adjacent to a substantial supply of good water, either a river or a reservoir since a mill uses large amounts of water.

It is interesting to note that the worsted mills, which in the main include the larger units, are located largely in or near the big centers of population where they have access to a reservoir of labor while the woolen mills, which generally are smaller units, are more commonly located in what may be called "the country districts."

10. Tariff or Subsidies as Factors in Growth

The Wool Textile Industry is classed as a "protected industry." The wool grower in the West has to have protection against the importation of low priced foreign wools and the wool textile manufacturer has to be protected against the foreign manufacturers who turn out their goods with a labor cost which in no foreign country amounts to as much as 40% of the labor cost in this country.

The tariff is in two parts. The specific rate on wool is to protect the domestic wool grower. The present rate is 34¢ a clean pound. ("Clean pound" signifies that the wool has been scoured to free it from grease, dirt and other impurities. On the average a pound of scoured wool is equivalent to about $2\frac{1}{4}$ to $2\frac{1}{2}$ pounds of grease wool).

The rate of 34¢ a pound on scoured wool becomes 37¢ a pound for carbonized wool since a pound of the latter is equivalent to $1\frac{1}{10}$ pounds of scoured wool. Carbonized wool is wool that contains a percentage of vegetable matter which is put into an acid bath and the vegetable matter dissolved.

The rate becomes 40¢ on a pound of yarn since a pound of the latter is equivalent to $1\frac{1}{5}$ pounds of scoured wool.

The rate becomes 50¢ a pound on the wool in piece goods since it takes approximately $1\frac{1}{2}$ pounds of scoured wool to make a pound of woven piece goods.

The tariff is not effective as far as price is concerned unless domestic consumption is in excess of the domestic clip although it does operate to keep out most of the foreign wools when there is a surplus of

domestic wools. If the domestic consumption is in excess of the domestic clip, foreign wools are imported and in such a case the domestic grower receives a price which is substantially equivalent to the world price plus the duty. Should the condition arise whereby the consumption would be considerably less than our home production the tariff in that instance would be less effective on price.

This specific rate protects the domestic wool grower and in effect puts a price on the wool in an imported fabric which is equivalent to the cost which a domestic manufacturer has to pay for his raw material. It does not protect the domestic manufacturer against the products of cheap foreign labor. Such protection is provided in part by the "ad valorem" tariff rate on manufactures of wool. This is graduated according to the amount of labor required to make a specific product. In terms of piece goods, the principal classification of imported wool manufactures, the rate is 50% and 60% according to value classification. Since this percentage is based upon the foreign value and not the value in this country, situations arise when the degree of protection is quite inadequate and much less than is generally supposed. (Foreign value of a fabric costing \$3 here might be \$1.25. 50% of this is 62½¢ or only 21% on the basis of American value).

B. PRODUCTS

1. Nature, Variety, and Quantities of Important Items

The more important products of the Industry may be divided into the following classifications;

- (a) Products to be further manufactured by some other industry.
- (b) Products not substantially changed before reaching the consumer.

In the first classification may be mentioned the following -

Yarn for subsequent manufacture into bathing suits, knitted sweaters and other outerwear, hosiery, underwear, etc.

Piece goods for further manufacture into men's, boys' and women's suits, coats and other garments.

In the second classification may be listed -

Piece goods for sale as yard goods over the counter.

Yarns for home knitting

Blankets

Upholstery fabrics for automobiles and household uses.

2. Proportion of Producer and Consumer Goods

Substantially the entire product of the Industry is classed as consumer goods, although much of the product goes through further manufacturing processes before actually reaching the consumer. There is a very limited production of such items as papermakers felts and other products for industrial uses which would be classed as producer goods.

3. Special Characteristics - Bulk - Perishability - Obsolescence

The product of the Industry is not bulky in the sense that any problem of storage is involved or that there is an excessive unit charge for the transportation of either the raw or the finished material.

There is no problem of perishability other than protection from moths. This is easily handled by concerns who have occasion to store substantial yardages of material but is still a problem for the individual consumer who is not always provided with facilities for adequate moth protection. Trouble also arises occasionally from the tendency of yarn or top to mildew if stored when too damp and subjected to pressure although this is a minor matter.

Obsolescence does not exist except to the extent that the style factor on fancy goods puts them in the unwanted class after the season for which they were intended has passed. This is much more important in the women's wear field than in the production of men's apparel although throughout the entire garment field there is a tendency to clean out stocks more or less completely at

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the end of each season. Blue serges have been going along for thirty or forty years, longer perhaps. As a matter of fact, a large part of the worsted industry of this country was built to manufacture blue serges. Blue serges today are a negligible portion of the industry's product.

Even with the advent of rayon and other synthetic fibres it is difficult to believe that wool products can ever become obsolete. There is no real substitute for wool as yet although it is true that changes in our habits of life have put such items as red flannel underwear in the "almost obsolete" class.

4. Patents - Brand Names

Brand names are not used to identify many of the products of the Industry. A few of the higher priced manufacturers do succeed in carrying the identification of their products through to the consumer but they can be counted on the fingers of two hands. Blanket manufacturers, on the other hand, since they turn out the blanket in the identical form in which it reaches the customer, do label their blankets and endeavor to compete for consumer preference on the basis of their own advertised and well known trade names. Such names as Kenwood, St. Marys, Chatham, North Star and Esmond are widely known.

While there are patents on certain processes in the Industry they are, in the main, patents owned by machinery manufacturers and not by members of our Industry. Several design patents have recently been taken out to prevent piracy of design. They are probably more important because of their nuisance value than otherwise as it is almost impossible to substantiate claims of the originality of fabric weaves. That expression I have just used, "almost impossible to substantiate claims of the originality of fabric weaves", was probably responsible for my brief dissertation on the history of the industry because you can readily appreciate that in an industry that has the history that this industry has almost every weave and design and color combination that can be thought of has at some time or other been thought of.

5. Research, Development and Improvement

The Industry is not without organizations who are pursuing research and development work. Such

organizations as the American Association of Textile Chemists and Colorists, the United States Institute for Textile Research, the Textile Foundation, the Bureau of Standards and others are all active but the amount spent on such research is woefully inadequate. Very few individual mills have any technical organizations worthy of the name. The extent of success which might result from the inauguration of more extensive research is, of course, unknown but the efforts made in that direction are not comparable to what is being done in other manufacturing industries.

6. Style Influence

(Touched on under 3 above)

7. Standardization and Simplification

There is little standardization throughout the Industry. There is an almost infinite variation, both in the methods of manufacture and in the resulting product. There are many different varieties of wool - many ways of blending wool - many differences in the preliminary processes - many variations in spinning and many possible types of weaves and finishes. A given mill having established certain methods and accustomed to handling certain types of wool tends to make goods of a particular character although varying its patterns and colors from one season to another. Almost any mill can in time change its product but in so doing runs into many difficulties since a balance of raw materials, machinery and processing requires considerable experimentation. This was illustrated during the World War when mills accustomed to making a different type of product turned to the manufacture of uniform fabrics. The resulting irregularity was due to a combination of the difficulty of obtaining the type of wool best suited to such fabrics and of the unfamiliarity of some contractors with such cloths.

C. RAW AND CONTRIBUTORY MATERIALS

1. Variety and Importance of Items

The principal raw material of the Industry is sheep's wool. This is used not only as new wool but fibers are likewise reclaimed from the material discarded

in the various manufacturing processes as well as from fabrics which have served their use as clothing or for some other purpose. Such reclaimed fibers may or may not be inferior to certain grades of new wool. Reclaimed wool is used largely in such woolen fabrics as overcoatings and heavier types of suitings where the felting of the fibers is desired.

In certain types of cheap fabrics, notably boys' clothing, men's trousers and the low end women's wear cloths, varying percentages of cotton are often used in the endeavor to meet a prescribed price range. Recently new fabrics have appeared wherein varying amounts of cut staple rayon are mixed with wool. Perhaps the most common proportion at present is 60% wool and 40% rayon although some with higher rayon percentages have been found. Rayon is more expensive than cotton but when blended with wool produces a much better and more satisfactory fabric than a wool and cotton mixture.

There are other so-called specialty fibers strictly limited in amount which are also utilized - such as camel's hair, vicuna, alpaca, llama, etc.

As a very rough approximation the following might represent the proportion of fibers used in a normal season:

| | |
|------------------|------|
| New wool | 55% |
| Reworked wool | 20% |
| Mohair | 5% |
| Specialty fibers | 2½% |
| Rayon | 12½% |
| Cotton | 5% |

There may be some slight variation in these figures but I believe they are substantially correct.

2. Sources of Important Items

The primary source of the wool used in this country is our own country - the leading states being California, Texas (which supplies nearly all the domestic mohair produced), Wyoming, Montana, Utah, Colorado, New Mexico, Arizona and Ohio. A small amount of wool is imported regularly because it possesses particular characteristics which are desired for specific constructions. This comes largely from Australia with some from South America. When the domestic supply is inadequate wool may be imported from almost any part of the globe but the largest amount comes usually from Australia and New Zealand.

3. Dependability

The domestic supply is dependable in that the total clip does not vary substantially from year to year but the yield is not entirely predictable since weather and grazing conditions will affect the actual yield of clean wool after scouring.

a. Domestic sufficiency

The fluctuations in the availability of wool arise from changes in the yearly consumption of wool rather than changes in the size of the domestic clip. From 1930 to 1937 approximately 90% of our consumption was supplied by the domestic clip with 10% imported. (In 1936 imports were above the 10% average for the seven years.)

The percentage imported during the last seven year period is considerably less than for preceding periods. From 1890 to the time of the World War the percentage of the total which was imported ran from 15% to 40%. During the War we imported fully 50% of our requirements. The tariff operates to make the industry use the domestic clip first and supplement any additional requirements by the importation of foreign supplies. Usually these can be obtained without difficulty although the supply proved inadequate in 1918 due to the heavy demand. Japan, Germany and Italy today are short of wool but because of exchange difficulties rather than an insufficient supply.

b. Seasonal factors

Sheep are customarily sheared in the spring and the wool is stored either locally or sent to market, the principal market being Boston. Wool stored locally is financed through local banks. That sent to Boston or Philadelphia is financed by wool dealers who sell it to the mills as needed. Pulled wool, which is wool taken off the pelts of slaughtered sheep at the slaughter house, is handled largely in Chicago where the packers are located. The aggregate poundage of this each year is substantial.

c. Stocks

While shearing takes place in the spring there is considerable difference in time because of the variation in climate between the wool growing states. Stocks are

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normally heaviest in the late spring, decreasing gradually until the early part of the following year, when the new clip comes into the market. Except in the case of a very reduced domestic consumption there is seldom any large carry over of wool from one season to the next. The fluctuation in consumption is largely taken care of by increasing or decreasing imports, which is a great protection to the domestic grower who normally can expect the wool textile manufacturers to use the entire domestic clip.

During the past four years the total amount of wool in the hands of wool dealers and manufacturers (no figures are available covering wool that the growers may be withholding from the market) has fluctuated between a low of 105,100,000 scoured pounds (March, 1936) and a high of 192,300,000 pounds (September, 1934).

4. (Omitted)

5. Transportation Problems

The domestic clip has been running in the vicinity of 400,000,000 pounds during the past several years. This is grown largely in the West or in Texas and has to be shipped to the East to dealers or to the mills. The product of the mills in turn has to be shipped to New York, Philadelphia, Baltimore, Chicago, Rochester and other garment centers. A good deal of handling is involved but in terms of total freight tonnage moved, the problem is not comparable to that encountered in the so-called heavy industries.

6. Price Stability

The fluctuations in the price of raw wool are frequent and considerable. Our domestic price (except when we consume less than we produce) is roughly the world price plus the tariff. The world price is subject to considerable variation and from time to time the tariff rates have been altered so that our raw material costs are far from constant.

Using Ohio fine delaine as an example - the price in 1850 averaged about 70¢ a clean pound.

In 1865, just after the Civil War, it was \$1.55 a pound.

In 1870 it had risen to \$1.75.

The rise continued for a few years beyond 1870 but then it began to decline and steadily dropped in price until in 1893 it sold for 48¢.

The tariff on raw wool was removed in 1894 and the price dropped to a low of 35¢. The tariff was reapplied in 1897.

The average price from 1900 through 1912 fluctuated between 60¢ and 80¢.

In 1913 the tariff was again removed but the effect was not apparent on our market because of the World War which caused a great scarcity of wool in all countries. At the beginning of this period this grade of wool sold at about 60¢ but jumped during the war to \$1.87, the highest price of which we have any record.

Following the war, the price declined to a low of less than 50¢ in 1932.

Last year it was 90¢; early this year about \$1.15; at present around 85¢.

This great variation in raw material cost - from 50¢ to \$1.87 - is a matter of the highest importance to the industry. Normally the raw material may be considered as roughly about one-third to one-half of the cost of woven fabrics so that it is evident that such changes in raw material cost result in sometimes abrupt and surprising changes in inventory values. Profits and losses in the industry are almost more dependent upon fluctuations in the raw wool market than upon the actual manufacturing processes.

D. PRODUCTION PROCESSES

Adaptability to change

Machinery, by adjustment and by the addition of attachments, can be changed and adapted to a wide range of products. It is difficult, however, to make changes quickly in the type of raw material used since the machines are adapted to the processing of certain types of raw material and the operatives are experienced in handling certain types and have difficulty in learning the different characteristics of unfamiliar wools. In time of any national

emergency it would be difficult to buy material on specification from mills accustomed to manufacturing a different sort of product but by having several alternate specifications a considerably augmented supply of usable material could be obtained.

Power Requirements

The power requirements of the industry are not large. Mills use both individual electric drives and belt driven equipment. Many mills make their own power, partly because of their use of steam which makes it economical as they need substantial boiler capacity for scouring and dyeing operations.

Patent and License Control

Of no special importance. Machines generally available to all mills.

Seasonal and Cyclical Characteristics

In the blanket field there is really one season only, the winter.

In women's wear, there is the fall and the spring.

In men's wear there is the spring, the fall, and a summer season when tropical worsteds are worn. In the fall there are not only suits but overcoats for both men's and women's wear. The peak of demand thus comes in the fall when the industry is called upon for blankets, men's and women's suits and coats. As a result operations for fall have to be commenced much further ahead of time than operations for spring.

The rate of activity in the industry does show a tendency to move in cycles although it is not always possible to determine the exact factors which control the length of the active period or of the succeeding curtailment. However, one factor can be cited as being responsible for accentuating the fluctuations in the industry and that is the tendency to speculate on the swings in market prices. On the upswing there is nearly always an excess of enthusiasm and a wide accumulation of raw material and finished goods which are bought in anticipation of inventory appreciation. On the down swing everybody holds off buying until there appears

to be no further possibility of price decreases. While this factor is to be observed in nearly all industries, it is more serious in our Industry because of the wide fluctuations in the cost of raw material and because of the long period of time which elapses between the purchase of the raw wool from the wool grower in the West and the sale of a garment to a customer in a retail store.

The resulting fluctuations in the rate of manufacturing activity have a very important effect on merchandising in the Industry and on labor relations.

You can appreciate that in a business that is as seasonal as wool manufacturing, from the standpoint of labor there are two periods in the year when the industry should be operating at peak and employing a great many people. There are other times, "in between seasons" we call them, when the industry is not active and requires a great many less people.

E. LABOR

1. Classification

Labor may be classified by percentages roughly as follows:

| | |
|----------------|-----|
| Ordinary | 25% |
| Semi-skilled | 60% |
| Highly skilled | 15% |

2. Availability of Requirements

Good help can be trained in a reasonable time if there is no particular urge to hurry production. The average age of the workers in the Industry is somewhat above the average since the Industry has been contracting instead of expanding in recent years and hence has not attracted nor been able to absorb younger workers in volume.

3. Wages - Regional Differentials

The N.R.A. code in 1933 established a minimum wage of \$14 in the North and \$13 in the South. This, I am glad to say, is a credit to the Industry in that it has been maintained and nearly all employees are paid much above this because of increases in 1936 and 1937 with the improve-

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ment in the Industry. The present average hourly wage of all factory employees in the Industry (excluding foremen, overseers, etc.) is 58¢ per hour as compared with 30¢ in 1932. The weekly wage rate is quite satisfactory and is rather extraordinary when compared with the average which existed in 1932, but the annual rates are less satisfactory due to the necessity of laying off employees in the dull seasons.

Although the observed minimum wage in the South is only $2\frac{1}{2}$ ¢ per hour less than in the North, the actual average is fully 10¢ per hour less as the skilled worker in the South receives a smaller differential compared with ordinary labor than does the skilled worker in the North. Speaking of a wage differential, we mean the differential paid for those operations above a minimum.

4. Rates of Turnover

(No figures available - Varies - Generally higher in larger mills.)

5. Organization

a. Extent of unionization

A comparatively small part of the Industry is organized. Prior to the C.I.O. activities, the highest percentage of unionization in the Industry as reported by the United States Department of Labor was 12%.

The Textile Workers Organization Committee, a C.I.O. affiliate, now claims 250,000 members in all branches of the Textile Industry out of a total of a million and a quarter workers. Their greatest enrollment is in the carpet, hosiery and silk branches of the Textile Industry and at the present time their enrollment in the Wool Textile Industry is probably not in excess of 15%.

b. Type of unions

At the time of the organization of the C.I.O. the United Textile Workers were absorbed and considered a part of it under the title of the Textile Workers Organization Committee. From the standpoint of the organization of the C.I.O., this was perhaps a logical development, it being an industrial union and interested in the vertical organization taking in several steps within the Industry.

c. Cooperation with management

You can well realize that with the small percentage of union organization within the Industry, the question of cooperative management with the unions has not been required. It is safe to say that where there have been individual instances where the manufacturer has dealt largely with the local, which comprised only his own employees, there have been satisfactory relations.

d. Trouble and strikes

The most recent extensive labor troubles in the Industry was the so-called nation-wide textile strike in 1934. This strike started in the Cotton Textile Industry but spread to wool and silk and other branches within a short time. The principal demands made by the union were recognition, shorter hours, higher wages and lessened work assignments. After some two months the workers returned to the mills and the President, as a result of a Committee which was appointed to study the textile situation, established a Textile Labor Relations Board September 26, 1934, and a Textile Work Assignment Board October 16, 1934. He also instructed the Bureau of Labor Statistics and the Federal Trade Commission to prepare exhaustive reports to indicate whether or not the Industry was in position to decrease hours or increase wages, or both. The reports of the Federal Trade Commission did not indicate that the industry had sufficient leeway to add to their labor costs by decreasing hours or increasing wages. The Textile Work Assignment Board found that the complications and variations concerned in the assignment of machine loads were too extensive to make it possible to formulate any single basis for operation throughout the Industry.

6. Seasonal Influences on Employment

The fluctuations in business and the consequent effect upon employment is one of the most serious problems of the Industry. Unfortunately, little progress has been made in solving it. While seasonal factors are not solely responsible for fluctuations in employment, they contribute greatly to it. To those who are fortunate enough to secure steady employment, the Industry offers a satisfactory livelihood but those whose employment is limited to the peak periods of activity are faced with recurring periods of idleness and find difficulty in stretching their earnings

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to cover such periods. The abolition of the third shift, which was practically eliminated when the N.R.A. code was adopted was of assistance in spreading employment somewhat more evenly, but it is difficult to see how much further progress can be made so long as there is as great a fluctuation in demand for goods as now exists.

7. Working and Living Conditions

Working conditions are in the main entirely satisfactory. We occasionally hear some criticism of what is termed "stretch-out." This is an increase of the labor load and the agitation against it is based upon the theory that an increase of this character has a tendency to displace men by machines. This increase in labor load is not a serious problem in the Industry and is not as prevalent as the accusations. As long as we are in a machine age, progress should not be retarded and it is interesting that in the processes of the Wool Textile Industry where machinery has been replaced, it has resulted in a lesser work load due to more improved methods in machinery. There is a definite limitation from the standpoint of the character of the work in that no excesses or abuse can be sustained because of a loss of efficiency. I am speaking in this case not of human efficiency but of the efficiency of the stock which is being employed. It is also interesting that where changes are made, they usually result in an increase in employment either in the preparatory or finishing operations, so that while the character of labor may be changed, the actual number is not greatly reduced.

Living conditions are reasonably satisfactory. A comparatively small number of mills operate mill villages but where that is the practice the houses are well maintained and comfortable although in some cases not any too modern. The factory employee in the smaller centers is generally able to find satisfactory living quarters, especially since the purchase of a cheap automobile allows him to choose from what is available in a much larger area.

F. MARKETS AND MARKETING

1. Domestic and Export

The Industry has no export business. There is no possibility of competing abroad in international markets where foreign producers have the advantage of labor costs so substantially below ours.

2. Type of Consumers

Except for blankets, practically the entire product of the Industry is sold to concerns who further process or manufacture the materials which we produce. The garment trades are highly competitive and our industry as the source of supply for those trades suffers some of the disabilities under which they also labor. Our biggest field is the men's clothing market, with women's wear next, followed by blankets and automobile upholstery.

3. Marketing Methods

The marketing methods in the Industry are subject to considerable criticism and the method used is an evolution of the earlier method of merchandising. For a great many years, in the rapid development of our country, it was customary to distribute merchandise through commission houses on the consignment basis. From this developed the selling agent, and the mills that sold their product direct to the trade. In the main, cloth is a primary market commodity; becomes a raw material to the garment manufacturer, and is sold as such. Most of the mills in the Industry are specialists and it is impossible to enter into a more modern method of merchandising directly to the consumer because of the inability of the mill to control its outlets. The garment manufacturer, in turn, buys these various specialties from a number of mills and he, in turn, sells a general line of merchandise. The identity of the mill is lost to a large extent and as long as this method of merchandising is pursued, the sales methods will appear antiquated. The smaller units in the Industry have selling agents who sell usually more than one line and who haven't a financial interest in the mills. There is also a group of selling agents who have a nominal interest in the mills, and some of the larger mills have their own offices and sales forces and sell their merchandise direct. These latter probably are using the most improved methods of merchandising that exist in the Industry but they would not be called modern compared, we might say, to the automotive industry.

4. Regional Characteristics

(Omitted)

5. Financing of Sales

Except for the larger units a great many of the mills have their accounts factored. Factors are individuals or firms who provide credit service, collect accounts and advance money to the mills against goods shipped. The factors have grown in importance during recent years. In many cases a factor can maintain a credit service, collect accounts and finance operations for a number of mills more economically than the individual mills can do it for themselves.

Another reason making the factor important is found in the terms which exist in the Industry. The standard terms are 1/10 net 60. Few accounts are paid before the end of sixty days and many run beyond that. In certain cases extra dating is allowed. This is especially true of seasonal merchandise delivered ahead of the time when it can be passed on to the retailers. When two or three months dating is given it provides a real financing problem in that the mill has to pay for its raw material and its expense of converting some six months or even more before it can expect payment from the customer. Only the larger units are financially able to extend credit to such an extent without recourse to some factoring arrangement.

6. Price Policies - Effect on Demand

The effect of price on demand is not in all respects similar to that found in other industries. A reduction in price usually accelerates consumption, but its effect is frequently to some degree perverted by garment manufacturers maintaining their price ranges but using better - frequently unnecessarily so - fabrics in those ranges. Thus, while a substantial price reduction enlarges the field for some cloths, notably those normally just above the so-called popular or volume level, its effect is not reflected as directly or to the same degree as in other commodities.

On the other hand, increased consumption has an almost immediate effect on price, the prices increasing rapidly in a period of active business. The reason for this is to be found in the fact that the industry is equipped to turn out more merchandise than can be disposed of readily in normal markets with the result that there is

very severe competition to obtain whatever business is available. This results in the disappearance of the profit margins, many mills actually disposing of their products at a loss. When the demand increases to a point where there is less severe competition mills can get better prices, as, in fact, they must in order to recoup the losses which they sustain during unprofitable periods.

Furthermore, their products are sold in the main to a trade whose knowledge of actual values is based almost entirely on the relativity of prices to one another, which fact, added to a speculative-mindedness apparently inherent in those operators, induces progressively active buying under pressure of advancing prices.

7. Competition

a. Other industries - substitutes

Certain parts of the Industry meet competition from related groups. In the field of women's wear there are many types of garments which could use either wool, silk, rayon or cotton; in other types, however, wool has no competition except for manipulated fabrics containing wool and certain percentages of rayon or cotton. In the men's wear field there is competition in the summer goods field and also in low end woollens and mixes for men's and boys' wear. In the field of standard men's wear fabrics, however, wool is almost universally used although mixtures of wool and cut staple rayon are being used apparently with good results.

b. Within industry

Competition within the Industry is very severe. One reason is the fact that except for blankets the product of the mills does not reach the consumer in such a way as to be identifiable. The attempts on the part of mills to identify their fabrics and build up consumer demand have not been successful except in a very few instances so that the mill must always meet the competition of countless other organizations able to make comparable fabrics. The severity of competition within the industry is illustrated by the method of bidding on Army contracts. Instead of declining prices as the quantity increases, bidders ask more for additional amounts. This is because the competition is so keen that

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they realize that they must make a very low bid to get any yardage awarded and they step their bids up as the quantity increases, hoping that on the total quantity awarded they will get a fair average.

c. International competition

While we cannot compete in the world markets, other countries compete actively for a portion of our own domestic market.

From 1849 to 1860 we imported a substantial percentage of our requirements on blankets and woollen and worsted piece goods - perhaps a third of total - because our mills had not reached a stage where they could make fabrics comparable with English merchandise. This percentage decreased gradually until 1890 since which time it has grown markedly less as our domestic industry has grown and acquired facilities for styling and making a better product.

A slight increase in the tariff was obtained in 1930 but the amount figured on the foreign value was too small to have any appreciable effect on the importation of foreign woolens. The substantial increase of 30% and more in hourly wages provided by the Code in 1933 raised our production costs considerably as compared with foreign manufacturers. These increases have not only been maintained up to the present but there have been still further wage advances during the past year. At the present time wool textile wages are 2-3/4 to 3 times those paid in England and over ten times those paid in Japan. This is a serious matter for our domestic industry. England is a very active competitor and is sending over a very substantial amount of men's suitings and overcoatings and also of blankets and steamer rugs. Japanese manufacturers, although they have not made much impression on our market as yet, have made great technical strides in the manufacture of wool textiles and with their very low labor costs are potential competitors who represent a real threat to our industry.

Secretary Hull is anxious to reduce tariffs wherever possible. Without going into a discussion of the soundness of his philosophy at this moment, it should be remarked that if the domestic wool manufacturer is going to be able to sustain a constantly increasing wage

basis he must be adequately protected against the low paid labor of foreign textile manufacturers. There may be many arguments for tariff reduction but while there exists such a wide spread between American wages and those paid in foreign countries we must of necessity choose between a low tariff and high wages; we cannot have them both.

8. Extension of Markets Through New Uses

The extension of the market is being attempted through the medium of the Associated Wool Industries, an organization supported jointly by the wool growers, the wool dealers, and the wool textile industry. The efforts are directed rather to the cultivation of existing uses, the extension of present markets and the development of a demand for a more varied wardrobe rather than toward the discovery of anything that could properly be termed new uses.

G. COST OF PRODUCT

The best figures showing a breakdown of the elements of cost are those released by the Federal Trade Commission as a result of a study of the Industry covering 1934, 1935, and 1936.

A typical breakdown for one of the periods follows (Averages of 155 companies) -

| | |
|--|-------------|
| Labor | 28.24% |
| Raw Material | 45.91 |
| Fuel and power | 2.54 |
| Dyes and chemicals | 3.22 |
| Taxes (property) | .96 |
| Depreciation | 2.18 |
| Other mill expense | 5.80 |
| Outside commission work | .37 |
| Selling - bad debts, etc. | 4.75 |
| Officers' salaries, etc. | 1.06 |
| Other gen. and adminis- trative expense | 1.32 |
| Net profit | <u>3.65</u> |
| Total Net Sales | 100.00% |

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H. FINANCIAL

1. Ownership

The ownership of the industry is largely private. The only concerns whose shares are listed on the New York exchanges are the American Woolen Company, Collins & Aikman, and S. Stroock & Company. A few others have some securities outstanding with the public, but in the main are privately and closely held.

2. Capital Structure

Few textile mills have any bonds outstanding. Some have more than one class of stock, but even in those instances the two classes are apt to be held by the same owners. Being largely of a private nature the individual concerns vary greatly in their capital structure. There are no standard ratios for current assets to current liabilities, to fixed assets, or to net worth. The industry offers examples of companies in almost every stage of corporate health.

3. Earning Record of Industry

The earning record of the Industry presents a discouraging picture. Since 1925 the Industry has been chronically contracting and while there have been some mills in the Industry that have consistently made money, there are many that have consistently lost. This is best illustrated by the fact that the capital structure in the Industry continues to be less and until such time as there is a substantial revival in the Industry, the earning record will probably not be formidable.

The decline in the Industry is illustrated by the fact that there were approximately 60,000 broad looms in place in 1919 as against around 46,000 at the present time. Probably the most important factor in this decline is the change in habits and styles of dress. A woman's suit used to take from six to seven and one-half yards; today women's garments rarely require as much as two yards. The average man during recent years has bought only six-tenths of a suit a year, with the figure dropping to four-tenths during the so-called depression years. Whether the explanation is to be found in the fact that men give

their clothes less wear than they formerly did or spend so much more on other items that they have less available for clothing, the fact remains that the volume of clothing sold has been declining.

With a declining demand for the products of an industry there is quite generally sufficient potential capacity to over-produce, which results in a keenness of competition which prevents all but the most efficiently operated units from making adequate returns on their investment.

I. TRADE ORGANIZATION

1. Strength, Coverage and General Effectiveness

The Industry's trade organization is known as the National Association of Wool Manufacturers. Established in 1864, it is the oldest trade association of national scope in the country. Its members represent approximately 90% of the capacity of the Industry. The effectiveness of the Association is naturally somewhat a matter of opinion. It stands very high among the larger associations of the country and has been very helpful and valuable to the Industry. During the N.R.A. the Association was the agent of the Code Authority and voluntarily defrayed any necessary expenses in connection with code activities. The Association has tried to take a realistic attitude toward the necessary limitations under which a trade association has to work and has not attempted the impossible.

2. Production Regulation

No regulation of production has ever been tried by the Industry except to the extent that the N.R.A. prohibition of third shift operation of worsted spindles, looms and knitting machines might be so considered. This restriction did have the effect of reducing the potential capacity of the Industry but was conceived more as an attempt to lengthen out the peaks and valleys in the production cycle than as a means of cutting down total production.

3. Price Regulation

No price regulation has been attempted in the Industry. The degree of competition would make it im-

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possible even if there might be a few in the Industry who look with envious eyes at certain basic industries where some degree of price stabilization has existed. Schemes for preventing selling below cost and other similar proposals considered at the time the N.R.A. code was being drafted were all turned down by the Industry.

4. Trade Statistics

In the field of trade statistics the Association has done an outstanding job. Some statistics are collected in cooperation with the Bureau of the Census and the Bureau of Labor Statistics and others by the Association through its own agencies.

These statistics cover a broad field including -

1. Production of wool
2. Wool Imports
3. Wool Stocks (inventory)
4. Wool Prices
5. Wool Consumption
6. Employment and Payrolls
7. Machinery Activity
8. Production, Billings and Inventory of Cloth
9. Importations of Wool Manufactures
10. Production, Sales, and Stocks of Wool Yarns

Some of these figures are collected on a weekly basis, and others monthly; figures on wool stocks are collected quarterly, and those on wool production once a year. Compilations of certain figures are sent to members weekly. A more complete tabulation of several of the items is made and released under the title of "Monthly Statistics of Wool Manufacture." It is always difficult to know the extent to which the Industry makes use of these statistics, but there seems warrant to believe that considerably more attention might well be given to the trends which these statistics disclose from time to time.

5. Trade Practices

The Industry has done a constructive job in maintaining the trade practice rules established under

the Code. Hours have been limited to 40 in most instances and wages have not only been maintained but increased. There has been a less satisfactory adherence to some of the selling practices, although terms of sale and certain other provisions of the trade practice rules have been carefully and consistently followed. In periods of unsatisfactory business it is inevitable that there should be some departures from the standards. When this goes to a certain point an industry generally awakens to the fact that something should be done and proceeds to do it by means of new agreements.

6. Effect of N.R.A. Codes

The N.R.A. was a help to the Wool Textile Industry. It operated to reduce working hours and generally educated the Industry in the direction of cooperative action in working out mutual problems. None of the provisions of the original code proved unworkable and most of them still survive.

CONCLUSION

The Army is naturally interested in the Industry as it would function on the war-time basis. At the present time the industry furnishes large quantities of shirting material, suiting, overcoating and blankets for both the military establishment itself and also for the C.C.C. In 1935 this Government buying accounted for perhaps 6% of the activity of the industry. Since 1935 it has been considerably less. In time of national emergency, however, the requirements of the Government would be very greatly increased. Allowing for some falling off in civilian demand, it is doubtful if the wool textile mills could meet the demand which would result from the mobilization of a large army. Not only is there the initial necessity for issuance of new uniforms but the sudden change from a routine where only moderate protection against the weather is required to a regime where much of the time is spent in the open with the consequent necessity for added protection and the inevitable rapid wearing out of garments, would result in a call for yardage which the industry would hardly be in position to meet. From this standpoint alone it is important that the industry be maintained without further curtailment and such steps taken as may be necessary to protect the domestic market and reserve the major part of it for American mills so that those mills may be in a

position to meet demands upon them if the time comes when such demands are made. Any discussion concerning the tariff protection afforded this industry should take into consideration the obvious necessity of preserving this vital industry in a healthy condition with efficiency maintained to a high degree.