

WOOL-GROWING AND THE TARIFF SINCE 1890.

THE rumblings heard now and again from different sections of the country, with ever-increasing force, seem to portend the not distant breaking of the storm which brings a revision of the tariff. In these recurrent disturbances the wool and woollens schedule has of late come to be the storm centre. The years since 1890 have witnessed the most varied changes in this schedule, and this same period has practically brought to an end that great movement for the opening up and settling of the West which has been such a dominating factor in the economic history of the country, and especially so in the industry of wool-growing. The time is thus opportune for a review of wool-growing and the effect of the tariff during that period, with the object of learning what we can from this past experience that may be of help in the future.

During the 80's the price of wool underwent a considerable fall. In 1883 a tariff act was passed slightly lowering the duties on wool. The growers ascribed the decline to this act, raised a great outcry against it, and in the McKinley Act of 1890 secured what was practically a restoration of the former duties. The decline in price, however, was much greater than could be accounted for by the Act of 1883, and, as a similar decline abroad indicated, was due in fact to the great rapidity with which the world's production, especially in Australia and South America, was then increasing.¹ In the United States the number of sheep² had increased very rapidly between

¹ For an extended account of the period 1867-93 see "The Duties on Wool and Woollens," by Professor Taussig, in the October, 1893, number of this Journal.

² Throughout this article stress is laid on the number of sheep rather than the product of wool, as, the latter being a by-product, the sheep is necessarily the basis of the industry.

1872 and 1884, but during the years following declined. The McKinley Act, it was hoped, would restore to the wool-growers the prosperity enjoyed under the Act of 1867, and replace this decline by growth.

But the years immediately following 1890 brought a gradual steady decline in the price of wool till the spring of 1893. Then with the panic of that year there came a sudden drop. The business depression following, together with Cleveland's election and the talk about free wool, only accentuated the decline, which continued until the Wilson Bill put wool on the free list. During these years London prices, though not participating in the drop incident to the panic and the free-wool scare, were also on the down grade, the world's production being on a rapid increase. The imports of raw wool under the McKinley Act continued to rise, although under the specific duty the lower price made the equivalent ad valorem rate higher than ever. On the other hand, the value of the manufactures of wool imported underwent a marked decline, much greater than could be accounted for merely by the lower price of the raw material. Yet, in spite of the lower price of wool and the increased imports, the number of sheep in the country rose.

The Wilson Bill passed August 1, 1894, and, putting wool on the free list, went into effect as regards wool on the 28th of that month, as regards the manufactures of wool on January 1, 1895. The price of wool was very little affected when the act became law, the fall having been discounted by its expected passage and the general business depression. Prices fluctuated at a low level till the fall of 1896, though abroad the increased American demand led, at first, to a rise. The world's production of wool reached the highest point ever known in 1895, since which date the output has fallen off under the destruction caused among the flocks of Australia by the

droughts. The imports of raw wool naturally rose to phenomenal heights, averaging 262 million pounds a year from 1895 to 1897. The imports of woollen goods were fairly heavy, averaging 47 million dollars in value in 1895-97, though this was not quite as high as for the years 1888-90. In the United States, from 1893 to 1897, the number of sheep rapidly declined.

In the Dingley Bill, which was passed July 24, 1897, the duties of the Act of 1890 were restored, that on carpet wool becoming specific in form and slightly higher. Under this stimulus the price of wool in this country rose rapidly during 1897, and thereafter, until the rise beginning last year (1904), fluctuated at a level somewhat below that before 1893, except for a sharp ascent and decline in the latter part of 1899, chiefly due to the feared scarcity of merino wool and a speculative movement which had its rise in Europe.¹ The fluctuations in price in this country, excepting the rise in 1897 on the restoration of the tariff have closely followed those on the other side of the Atlantic. The world's wool production during this period has been virtually stationary, hovering around the amount reached a little before 1895. Under the Dingley Act the imports of raw wool have shown a steady though not rapid increase, and one to be found in all three classes. The imports of manufactures of wool, on the other hand, have been most remarkably small, lower in value, in fact, than for a great many years. In the United States the flocks of sheep began to multiply, following the restoration

¹The speculative side of dealings in futures is, in the case of wool, a comparatively new one. Because of the difficulty in establishing uniform grades of wool and classifying the fleece, dealing in futures has been much less common with wool than with many commodities. These difficulties have, in a measure, been overcome by taking for the basis of sale what is known as wool tops, this being wool scoured, combed, and graded so as to be ready for spinning to a given number of yarn. In the last of 1899 the great bulk of the sales in the top markets on the Continent, mainly at Roubaix, assumed a character purely speculative. The price movements abroad at this time were reflected in a modified form in the United States. For some further account see the *Bulletin of the National Association of Wool Manufacturers*, vol. xxx. pp. 374-377, and vol. xxxi. pp. 289-314.

of the duty on wool, and this continued up to 1902, since when there has been a decline.

At the present time, then, we find that the number of sheep in the country is smaller than when the period commenced, while the falling off in the flocks since the high-water mark was reached in 1884 is nearly one-quarter. The amount of wool grown, however, owing to the improvement of the fleece and changes in the breeds of sheep, has declined but slightly. On the other hand, although the importation of wool in the form of manufactures is less, yet the raw wool imports are higher than ever before (barring the brief period of free wool); and this although the ad valorem equivalent of the duty is the highest we have known. That the tariff has not accomplished what was hoped by the wool-growers is certain. Evidently another and more powerful force or combination of forces has exerted an even stronger influence. In order, then, that we may learn what these opposing forces are, and judge of the real ability of the tariff to aid this industry, let us turn to a more detailed and critical study of the situation.

For the price of wool the world's production is, of course, a factor of the first importance. Below is given a table¹ showing the average annual product of wool of the various divisions for the period 1880-89, and then for each year since. The most noticeable feature is that the year 1895 marks the culmination of a continued and rapid rise in the wool product of the world, and that since then it has remained practically stationary. As the fall in the price of wool, which took place after 1880, was due to this increased

¹From the *Wool Circulars* of Helmuth, Schwartze & Co., of London. The figures for the United Kingdom and the Continent are for washed wool, the others for wool in the grease. The figures for North America give the product of the United States plus 13 million pounds for the Canadian supply. The figures for the Continent exclude the Balkan Peninsula.

PRODUCTION OF WOOL IN THE GREASE.
MILLIONS OF POUNDS.

	United Kingdom.	Continent.	North America.	Australasia.	Cape.	River Plate.	Others.	Total.
1880-89.	135	450	319	395	64	313	130	1807
1890 . .	138	450	322	511	91	272	160	1944
1891 . .	148	450	320	592	102	330	179	2121
1892 . .	153	450	346	644	88	369	175	2225
1893 . .	151	450	361	632	91	360	164	2209
1894 . .	142	450	338	659	73	376	174	2212
1895 . .	135	450	307	730	84	439	197	2342
1896 . .	136	450	285	646	96	464	186	2263
1897 . .	139	450	272	660	83	496	204	2304
1898 . .	139	450	280	608	96	513	181	2267
1899 . .	140	450	285	593	92	520	181	2261
1900 . .	141	450	301	514	46	398	175	2025
1901 . .	138	450	316	600	73	532	143	2252
1902 . .	136	450	329	579	83	493	170	2240
1903 . .	133	450	300	512	80	517	203	2195

supply, so this failure to advance will help to explain the fairly stationary prices which have until recently ruled the London market. The cause of this retrograde movement was the severe droughts experienced in Australia, beginning in 1895. The year 1892 found 106 million sheep in Australia; by 1903 the number had been cut down to 54 million.¹ The most severe losses came in the seasons 1894-95 and 1901-02, and fell heaviest upon New South Wales. The flocks are now again on the increase, but the general opinion seems to be that under the present conditions there is little prospect of their rising, at the best, much above the former level. This gap in the Australian output has been, in a measure, offset by the advance which has simultaneously taken place in the supply from the River Plate, where the average annual output increased from 341 million pounds for the years 1890-94 to 492 million for the years 1899-1903. Apparently, it was only the increased production in this quarter which prevented a serious shortage in the world's

¹ Figures from the *Annual Wool Reports* of Helmuth, Schwartz & Co. New Zealand did not suffer during these years, the number of sheep there, at the two dates given, being 18 million and 19 million, respectively.

supply. A result of this recent falling off has been that the demand, which for some time had been lagging behind the supply, has been given a chance to catch up; and, unless a further supply is forthcoming, higher prices will prevail.¹

The more immediate bearing of the world's production on the United States is best indicated by a study of the wool imported. The average annual imports of wool of each class under successive tariffs are as follows, in millions of pounds:²—

	<i>Class I.</i>	<i>Class II.</i>	<i>Class III.</i>
1884-90	20	6	75
1891-93	40	5	99
1895-97	141	21	117
1900-04	41	8	100

The wool of Class I. corresponds roughly to the wool grown in this country. At one time wool of the first class was used for woollens only, and that of the second for worsteds; but now the wool of the former can generally be used for either. The tremendous increase in the imports of Class I. wool under the Wilson Bill, though of course greater than if this were the normal state of the tariff, indicates that it is this class which feels the duty most and with which the wool-growers of this country have to compete. If an analysis of the imports of this class be made by countries of production, it reveals a striking increase during the last few years in that coming from Uruguay and Argentine Republic. For 1884-90 the

¹ The rapid rise in price which began last summer seems to be explained in this way. It is probable that the present (June, 1905) high quotations will before long bring about such an increase in the supply as to cause another fall, though whether it would drop to the former low level is doubtful. A continuance of the present prices would certainly result in a falling off in the demand.

² A few grades of wool were transferred from Class III. to Class I. by the Act of 1897. In most comparisons, under the Dingley tariff, a period beginning two or three years after the act went into force is taken, as the enormous imports of the free-wool period required some time to be worked off. The fiscal year 1891 includes three months under the previous tariff. The imports of Class I. wool for 1902-04 averaged 50 million pounds.

annual importations hence averaged 4 million pounds, while for the years 1900-04 they were nearly 17 million. Under the McKinley Act the average was even less than during the previous years. The change came with the period of free wool, and was due to several causes,—partly to the better chance then given our manufacturers to test this wool, partly to the great improvement which has taken place in the wool grown in these regions, and in a measure, also, to the increased demand for coarser goods, making possible the use of this wool to supplement the diminished Australian supply. Australia is the only other country from which we import any quantity of Class I. wool, the average annual imports for 1884-90 being 12 million pounds, for 1891-93 34 million, and for 1900-04 falling to 24 million.

The imports of Class II., or “combing” wool, which also competes with our domestic product, are comparatively slight, though it is significant that during the régime of free wool the increase here was relatively greater than in any other class. Almost all of this wool comes from the United Kingdom, the class being made up of wool from the English breeds of sheep. Aside from Turkey, no other country sends any supply worth mentioning. The rise in the imports of late is due to the preference for coarse goods, for which the wools of these breeds are best adapted.

The wools of Class III., or “carpet wools,” do not compete with much wool grown in this country. Physiologically, it is perfectly possible to grow such wool here. But it is not grown, because a better quality can be obtained at almost the same cost. During the free-wool period, unlike the other classes, there was but a slight advance in the imports of this class, seeming to indicate that the duty (4 cents a pound, if valued at 12 cents or less, 7 cents, if above that) is but a slight barrier,—practically, a

duty for revenue. The largest producers of our imports in this class are China and Russia, with the United Kingdom not far behind, and Turkey, Argentina, and the British East Indies no mean competitors. The more noticeable change to be seen is the rapid increase in the supply coming from China, and also, of late, from the United Kingdom. The imports from China rose from an average of 4 million during the years 1884-90 to 21 million for the period 1900-04; for the United Kingdom the figures were 10 million and 17 million respectively.

This summary indicates that the most dangerous rivals of our wool-growers are to be found in Australia and Argentina. Eventually, perhaps, some of the countries now growing only carpet wool may improve their product; and there are still regions, notably Central Asia, to which we can look for a large increase in the supply of carpet wool. As for the immediate future, Australia, as we have seen, is not likely to become any more dangerous a competitor than she has been, and the most serious prospective rival is to be found in Argentina. This country now grows as much wool as Australia, yet most of the sheep are to be found in one province, Buenos Ayres. The number in that province will very probably decline as cultivation increases, but there are still vast areas to the south and west which seem to offer excellent prospects for the extension of this industry, and for the American wool-grower a most threatening rivalry.

Another change of importance that has taken place in the last few years is the decline in the supply of the fine merino wool, this having been replaced by the medium grades of wool from the cross-bred sheep. The movement seems to have had its start with the rise of the frozen mutton trade, which began about 1882 on a small scale in both Australasia and Argentina. The decline which the price of wool was then undergoing gave it an

added impulse, especially as the decline was not as great in the medium grades of wool grown on the mutton sheep as in the finer wool of the pure merino.¹ Wool sank so low that the growers gladly turned to raising mutton sheep as a method for securing additional income from their flocks. Rams of the various English breeds were imported and crossed on their merino ewes, the offspring generally proving acceptable as mutton and bearing the cross-bred wool, finer than that of the pure bred English sheep, but coarser than the pure merino. Since 1890, especially since 1895, the supply of this grade has begun to assume great proportions. More than once the prospective scarcity of merino wool has, as in 1899, seriously alarmed the market. In 1889, of the total imports of wool into Europe and North America from the British Colonies and the River Plate, 17.2 per cent. (on the clean wool basis) was cross-bred wool. In 1895 it was 31.7 per cent., and by 1904 the proportion had risen to 51.8 per cent.² The main increase in this supply has come in the output from the River Plate, where at present this grade makes up about 80 per cent. of the total. Nearly all of the Australasian cross-bred wool comes from New Zealand, the conditions there being more favorable for mutton sheep, and it does not as yet form any considerable portion of the clip from Australia.³ The full significance of this will be understood when it is remembered that the clip of these two countries represents fully one half of the world's wool supply. This change in the

¹From 1878 on, almost without exception, Ohio medium wool has ranged in price above Ohio fine. See quotations of Mauger & Avery in the *Statistical Abstract of the United States*.

²From the *Annual Wool Reviews* of Helmuth, Schwartz & Co. A part of this increased percentage is due to the effect of the droughts on the output of Australia, which now makes up the greater part of the merino.

³For the years 1902-04 the average annual quantity of Australasian wool catalogued in London was 861,000 bales, of which 402,000 bales were cross-bred, and of this 344,000 came from New Zealand.

quality of the product of their chief competitors might have been of some relief to the wool-growers of this country, had not similar circumstances, to be considered later, brought about a corresponding change here. Formerly both were growing merino wool. Now they all give more attention to cross-bred, and the relative situation remains the same.

The extent to which our wool-grower is protected against the foreign wools by the tariff duties is a question often asked, but most difficult to answer. Ordinarily, the mere fact that a commodity is imported and the duty paid is taken as evidence that the price of the article in this country is raised to the full extent of the duty. This, however, presupposes that the article produced here and that imported are identical in quality. Yet it would be difficult to find another article which varies in so many respects as do different clips of wool. Fineness, elasticity, length, and strength of the fibre, working quality, and shrinkage, all enter into the question. Each separate fleece even may be sorted into six or eight different grades. It is obvious that under the circumstances the effects of a system of duties like ours are not simple or easily analyzed.

The chief complications have been caused by the varying shrinkage of wool in the process of washing and scouring, and by the practice of skirting the fleece. It was partly because of its heavy shrinkage that the South American wool was for a long time practically prohibited by the tariff; and it is generally agreed that no Australian wool is imported into this country that shrinks much more than 52 per cent.¹ Similar wool in this coun-

¹"American purchasers are confined to wools of the lightest shrinkage on account of the duty, and these purchases will not average to shrink more than 50 to 53 per cent. . . . The condition of Ohio wool has been growing heavier of late years, correspondingly decreasing the yield when scoured, while the Australian wools have as steadily improved in condition." Letter of Mauger & Avery, of Boston, in *Aldrich Report. Senate Reports*, 2d Session, 52d Congress, vol. iii., Part I., pp. 384-383. See also *House Document* 338, 54th Congress, 2d Session, p. 1366.

try, unwashed, shrinks from 60 to 80 per cent., perhaps averaging 66 per cent. Other things equal, what a manufacturer is willing to pay for his wool is of course determined by the amount of clean wool he obtains from it. Clearly, the American buyer can afford to pay more for Australian wool shrinking 52 per cent. than he can for otherwise similar American wool shrinking over 60 per cent., or even Ohio fine washed shrinking 55 per cent. Thus the duty of 11 or 12 cents a pound on these Australian wools (the improvement in the Argentina wools has frequently secured a similar result there) does not give protection of an equal amount to the American product.¹

A similar effect comes from the practice known as skirting the fleece, resorted to in both Australia and South America, though heretofore more complained of in the case of the former. As has already been stated, the wool found on a single fleece varies considerably both in fineness and shrinkage. In skirting the fleece, the coarser wool and that having the most dirt, such as comes from the belly, breech, and legs, is cut off, leaving simply the best and cleanest part of the fleece. Here, again, the manufacturer will gladly pay more for a foreign fleece improved in this manner than for an otherwise similar American fleece. A well-known American buyer says: "I know of no class of wool grown in the United States, which is sold in the fleece, that does not need 2 cents per pound added to the price paid in the fleece to make it equal to all Australian wool and all New Zealand wool and most of the English and Irish wools as they come to market.

¹Probably the possible gain is somewhat neutralized by centering the demand of the American buyers upon these low-shrinkage wools, thus slightly raising their price.

The duty on wool of Class I. that has been washed is doubled, and on that which has been scoured is tripled. Wool of Class II. that has been scoured is also subject to triple duty. These surcharges are so heavy that practically no wool is imported under them.

It takes the above 2 cents a pound to make our wool equal in condition as wool before estimating shrinkage."¹ Further indication that this practice acts as a loophole is found in the attitude of the manufacturers toward what is known as the "skirting clause" of the tariff, which makes particular exception for skirted wool in admitting it at the same rate of duty as unskirted.² They secured the insertion of this clause in the McKinley Act. Through their efforts it was retained in the Dingley Act also, in spite of the vigorous protests of the growers, who asked for a duty of at least 3 cents a pound additional on such

¹ Letter of the late Mr. Joseph Walworth, for forty-two years buyer of the Pacific Mills, Lawrence, Mass. He adds for illustration an actual transaction, showing how an American wool, selling in Boston at 20 cents at the same time that a similar grade of South American was selling there at 21 cents, duty paid, actually cost per scoured pound 7 cents more than the latter. *Bulletin of the National Association of Wool Manufacturers*, vol. xxxi. p. 381.

On this point the late Judge Lawrence, formerly president of the Wool-growers' Association, said, "Australian merino unwashed, as heretofore imported, will sell from 5 to 7 cents a pound more than our Ohio washed merino, because of the less shrinkage of the foreign wool and the value added to it in the skirting, and because of the special demand for a soft wool of that particular lustre, which, however, adds nothing to its utility, but, nevertheless, subtracts from the protective benefit of the wool tariff, leaving the protective benefit of a tariff of 12 cents a pound at less than 7 cents in competition with skirted Australian unwashed merino." *House Document 338*, 54th Congress, 2d Session, p. 1358. An estimate made by Mauger & Avery, based on the prices of 1891, showed that Ohio washed wool was enhanced, because of the duties and charges, $11\frac{7}{8}$ cents. A similar estimate, based on the quotations of July 1, 1893, showed the price to be raised but 6 cents. *Bulletin of the National Association of Wool Manufacturers*, vol. xxiii. pp. 252-263. It is evident that only an estimate covering a period of several years could be at all satisfactory.

For further references as to skirting, see *Bulletin of the National Association of Wool Manufacturers*, vol. xxvii. pp. 127-132, 155-162, 282-288. *Tariff Hearings*, *House Document 338*, 54th Congress, 2d Session, pp. 1374-1378, 1588-1596; *Senate Miscellaneous Document 35*, 53d Congress, 2d Session, pp. 325-326; *Senate Miscellaneous Document 17*, 54th Congress, 2d Session, p. 36.

² The text of this clause (Section 383) in the Act of 1890 is suggestive, and runs as follows:—

"The duty upon wool of the sheep or hair of the camel, goat, alpaca, and other like animals, which shall be imported in any other than ordinary condition, or which shall be changed in its character or condition, for the purpose of evading the duty, or which shall be reduced in value by admixture of dirt or any other foreign substance, or which has been sorted or increased in value by the rejection of any part of the original fleece, shall be twice the duty to which it would otherwise be subject: Provided that skirted wools as now imported are hereby excepted." *United States Statutes at Large*, vol. xxvi. p. 595.

wool. Here, again, there can be little doubt that the growers fail to obtain the full benefit of the nominal duty.

Attempts have been made to throw some light on this subject by a comparison of prices here and abroad, and the period of free wool has given an added opportunity to secure data; but the results have been, at best, unsatisfactory. To find two clips of wool that are exactly alike has proved practically impossible. Those most frequently compared have been Ohio fine washed and Port Phillip (Australian) average grease. Even here the latter will probably sell in a free market a bit higher than the Ohio wool, because of its softer character. During the free-wool period this Australian product sold in London at a price sometimes a little below, sometimes a little above, the Boston price of the American wool; but at that time the market conditions in this country were abnormal. If we leave out the period of free wool, the quotations show for the period since 1890 a difference between prices for these two grades of wool varying from 3 to 11 cents, the general average being about 8 or 9 cents. The duty, it will be remembered, is on Class I. (clothing wool) 11 cents, on Class II. (combing wool) 12 cents.

All grades of our domestic wool fell in price together and to practically the same extent during the events which led to the repeal of the duty on wool; and on its reimposition they all rose again. There is little evidence that there is now any important grade of our domestic clip of which the supply is so large as to depress the price below the possible limits of the protective duties. We import nearly all grades of wool. While they do not exactly correspond in all respects to our own wools, one being a bit better for this purpose and the other for that, it is improbable, with the advance that has been made in adapting wools to varied uses, that the difference in quality

between any important grade of domestic and at least some grade of foreign wool would be so great as to stand seriously or permanently in the way of one competing with the other.

It thus appears that, while the difference between the price of the most important competing wools here and abroad is less than can be accounted for if the tariff protects to the full extent of the duty, there is little reason to believe, in view of the character of our imports, that this failure of the domestic wool to advance in price is caused by any pressure of competition at home. Other causes seem sufficient to explain this discrepancy. It is reasonable to conclude that, because of the better condition in which the wool of our only really serious competitors comes to market, the specific weight duties do not, indeed, raise the price of American wool by the nominal amount of the duty, but that the price is raised, under normal market conditions, to the full amount of the protection possible and actually given by these duties. To that extent the wool-growers do benefit by the tariff.

Another form of competition which the wool-grower of this country has to face—one the importance of which he himself has perhaps not always fully realized—is the importation of wool in the form of manufactured goods. This is especially worthy of attention now because of the remarkable change which has occurred, as is indicated by the following table, in the period under review:—

	<i>Average annual value of the imports of manufactures of wool.</i>	<i>Average rate of duty paid.</i>	<i>Estimated average annual amount of wool imported in the form of manufactures of wool.</i>
1884-90 .	\$45 million	67 per cent.	135 million pounds
1891-93 .	38 "	91 " "	114 " "
1895-97 .	47 "	49 " "	141 " "
1900-04 .	17 "	92 " "	51 " "

The amount of wool imported in the form of manufactures of wool can only be estimated in a very rough manner, but, accepting the generally used basis of 3 pounds of wool to the dollar in value, we find such a drop under the present tariff as can be of no slight importance to the wool-grower. The full weight of this change is better realized when it is stated that in only two years since 1850 (1862 and 1894) have the imports of manufactures of wool been so low in value as they have every year since the Dingley Bill went into force. Or, continuing our calculations on the above basis, up to the year in which the McKinley Bill went into operation there had been but three years (1863, 1880, and 1886) since the records began in 1822 when the imports of raw wool exceeded the imports of wool in the form of manufactures, whereas in every year since (except 1894) the case has been exactly the reverse.¹

This change is so notable as to deserve more detailed inquiry as to its cause. It is a point of some significance that on the question of excluding manufactures of wool the interests of both the wool-grower and the wool manufacturer, usually so diverse, happen to coincide. The growers have at times opposed higher duties on woollen goods, but only to force from the manufacturers the concession of higher rates on the raw product, not because they would not have been satisfied to exclude these goods. The manufacturers, on the other hand, generally admit that in being deprived of free wool they suffer under a handicap, perhaps better realized now than ever before.² Apparently, they only consent to duties on wool (though

¹ Some allowance should properly be made for the higher price of wool and the more expensive methods of manufacture of the earlier years; but this does not seem sufficient to seriously detract from the general significance of this statement. Furthermore, this explanation would have much weight only if we go back for a long period, while the decline has been comparatively recent.

² See the manufacturers' *Bulletin*, vol. xxvii. pp. 122-127, 234.

some declare for free wool in any case) because of political necessity, fearing that, unless this were granted, they could not obtain protection for their own product. The growers have evidently felt that they could safely leave the care of protecting woollen goods to the manufacturers, and certainly the results have entirely justified their expectation.

That the decline in imports, as we may most naturally suppose, is due to heavier protection, further examination seems to substantiate. After the enactment of the tariff of 1890 the duties paid on the imports of manufactures of wool showed higher ad valorem rates, and the total value of these imports fell off somewhat. Under the present law the duties paid indicate the same level of rates as under the Act of 1890; yet the amount of these goods imported, as shown not only by the value, but by the quantity (where such comparison is possible), has undergone a very sudden drop when compared with the figures under the Act of 1883, as well as with those under the McKinley Act. Thus in the two classes of goods where by far the greater share of this decline occurred, at least as regards the absolute amount, we have the following:—

	<i>Average annual imports of cloths.</i>		<i>Average annual imports of women's dress goods.</i>	
	<i>Pounds.</i>	<i>Dollars.</i>	<i>Pounds.</i>	<i>Dollars.</i>
1891-93 . . .	14 million	13 million	82 million	17 million
1900-04 . . .	4 million	4 million	33 million	6 million

There was also a decrease in nearly all the other classes, the only instance of any considerable increase being under "carpets," in this case apparently in the class of Oriental rugs. Heavier protection has been secured in some instances by higher rates of duty, but probably with more effect by adopting new dividing points in the valuation and by changes in classification; with the result that what little foreign competition remains has been shifted to a

grade of goods even higher than before. Undoubtedly, the American manufacturers learned much during the period of free wool, from obtaining a better acquaintance with foreign wools, as well as from the necessity of meeting more severe competition from abroad, and are now better prepared to cope with their European rivals than formerly. But it is equally certain, as they themselves readily admit,¹ that the Dingley Bill affords them greater protection than any previous tariff.

The actual effect of these duties on manufactured goods upon the grower deserves a little closer attention. When the present system of duties was adopted in 1867, the specific weight duties on goods were supposed to compensate the manufacturers for the duty on their raw material. It was then estimated that, allowing for a shrinkage of $66\frac{2}{3}$ per cent. in the wool and the loss in the process of manufacture, it took 4 pounds of raw wool to make 1 pound of cloth. The compensatory weight duties were adjusted accordingly, and on the supposition that the price of wool was raised to the full extent of the duty. Here, it may at first appear, the wool-grower benefits to the full extent of the duty; and so he probably does, as far as the imports of goods are concerned. But, on further consideration, it is clear (even if we grant that the estimate of 4 pounds of wool to 1 pound of cloth is not generally excessive) that, just so long as the duties on raw wool do not actually protect to the full amount of the tariff, these full protecting duties on the manufactures are unable to

¹ In the September, 1897, issue of their *Bulletin*, Mr. S. N. D. North, then secretary of the National Association of Wool Manufacturers, wrote: "So far as the most critical examination can now detect, there is no weak spot in the woollen schedule. . . . Our belief is that it will be found in practical operation to be the most perfect woollen schedule which has ever been enacted." That these hopes have come true is indicated in an address by the same gentleman before this association, though no longer its secretary, this winter, when he said: "The present wool and woollens schedule, whatever its defects, is, on the whole, as satisfactory to the wool-grower and to wool manufacturer alike as any that has ever been enacted. . . . So long as the wool and woollen schedule remains as it is, you are safe." See their *Bulletin*, vol. xxxv. pp. 46, 47.

give a particle of additional aid. The manufacturer may gain, but not the grower; for ere the price of domestic wool rises to the full extent, as estimated for the compensating duty, the former will turn abroad for his raw material.

The actual extent of the competition which the tariff permits of, so far as that can be determined by the amount of foreign wool imported, is shown by the following table:—

(IN MILLIONS OF POUNDS.)

	<i>Average net imports of wool. Class I. and II.¹</i>	<i>Average imports of wool in form of manufactures.</i>	<i>Total average imports of competing wools, raw and manufactured.</i>	<i>Average domestic wool supply.</i>
1884-90 . . .	26	135	161	321
1891-93 . . .	45	114	159	329
1895-97 . . .	153	141	294	272
1900-04 . . .	52	51	103	297

These figures show that, although the imports of raw wool of the grades competing with our own have been advancing in spite of the duties, yet, when we take into account the amount imported in the form of manufactured goods, the total shows a falling off as compared with that which prevailed under either the tariff of 1883 or that of 1890. We now manufacture a greater proportion of the foreign wool consumed in this country than formerly, but the total amount consumed has rather decreased; and, although the American product does not advance, yet it is easily holding its own against the foreign invader.²

¹As the carpet wool does not seriously compete with our domestic wool, it is omitted. Similarly, a portion of that coming in as manufactures might be excluded, but the amount is so small as to be negligible. The figures for the domestic production are the estimates of Mr. Lynch, Mr. Truitt, and the manufacturers' *Bulletin*.

²That it will continue to hold its own much longer is doubtful. Certainly, if the domestic supply is not increased, we shall have to go abroad for wool. This is just what is being done now under the pressure of high prices. The imports of Class I. and II. wools for the first ten months of 1905 (103 million pounds) are greater than for any previous complete year when under a duty.

The net result of this review of the competition from abroad since 1890 leads us to believe that the tariff has increased the price of domestic wool as far as possible, though not to the extent of the nominal duty, and that the consumption of foreign wool, aside from the free-wool period, has remained about stationary. Let us now see how the wool-growing industry of the United States has fared under this aid.

In studying the economic history of wool-growing, probably the most striking feature which characterizes it is the large number and the complexity of the factors entering into the problem. Wool is the economist's classic example of a by-product; and one who picks up a textbook on the subject will learn that the grower has to consider the price of the other products of the sheep to determine the price at which he can sell his wool or whether he can keep sheep at all. In many cases, however, this proves to be but a small part of the problem, for the raising of sheep is frequently but a by-product in the industry of general farming. Here there at once arise before us a most intricate mass of interdependent factors, all of which must be taken into account by the farmer in determining the size of his flock. This calculation must then include not only the cost and selling price of wool, lamb, and mutton, but also that of wheat, corn, beef, pork, butter, cheese, and various other farm products. Wherever land can be put to numerous uses, these questions arise, and in studying the economic history of any product of agriculture one must constantly bear in mind the great complexity of the problem.

Under these circumstances it is clear that any satisfactory view of the industry of wool-growing in this country will require that the regions where agricultural con-

ditions are very dissimilar be treated separately. For the purposes of the present cursory survey we may divide the country into two divisions, one embracing the region to the north of the cotton belt and to the east of the arid districts of western Kansas, Nebraska, and the Dakotas, the other stretching westward from these districts to the Pacific coast ranges, and extending from the northern boundary of the country to the southern. The former includes what was once the great wool-growing district of the land, the latter the centre of the industry to-day.¹

About 1870, except the sheep in California and New Mexico and scattering flocks in the South, practically all the sheep of the country were in the eastern region. In the Atlantic coast States a decline had set in after 1840, and during the 50's signs of a similar tendency appeared in the States to the north of the Ohio River. The stimulus given during the Civil War and the period of inflated prices produced a remarkable but unstable growth, and about 1870 the decline was renewed. The opening up of the western area, and the increasing wool production from there and abroad, led to a lower range of prices, beginning about 1880. It has already been shown how abroad this fall helped to start the movement toward mutton sheep; and similar results were brought about here, at least where sheep were not abandoned altogether. But the latter case proved the more general, and by 1890 the industry in this eastern region was on a slow but steady decline.

On the passage of the McKinley Bill the hopes of the farmers in this section revived, as is shown by the increase

¹ The South has paid but scant attention to sheep, if we except the ephemeral flocks of Texas. The physical conditions seem favorable; and many efforts have been made to induce the people of this region to try the experiment, but without permanent result. Other crops attract their attention, and the ever-present cur is a most serious obstacle.

in their flocks;¹ yet the rise was but slight, and in many States did not even last through the year 1892, while 1893 brought a marked falling off all around. During the reign of free wool the flocks of the region experienced a decline of about two-fifths. Then ensued a slight rise until 1902, since when the tendency has been once more downward. But the most striking fact of all, one surely

¹ THE NUMBER OF SHEEP, 1890-1904 (00,000 OMITTED).

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
New England	12	12	12	9	7	6	6	5
Middle Atlantic	27	27	28	33	29	23	19	17
South	76	78	78	76	66	60	54	49
North Central	102	104	110	124	107	92	74	65
Middle West	27	26	31	37	35	30	28	26
United States	443	434	449	472	435	399	364	347

	1898.	1899.	1900.	1901.	1902.	1903.	1904.
New England	5	5	5	5	5	5	5
Middle Atlantic	17	17	17	18	20	16	16
South	46	42	41	43	34	33	34
North Central	65	68	69	74	79	67	62
Middle West	27	28	28	32	30	31	29
United States	356	369	402	419	421	392	383

These figures are taken from the *Bulletin* of the wool manufacturers.

For the years 1890-93 they are the same as those of the Department of Agriculture. Except for these years and 1901, when they are for January 1, they give the number on April 1. About one and one-half million of the decline between 1893 and 1894 is due to this change. The North Central States included Ohio, Indiana, Illinois, Wisconsin, Michigan, West Virginia, and Kentucky,—the wool-growing centre of the East. The South includes Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Arkansas, and Tennessee; the Middle West, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Indian Territory.

The estimates of the Department of Agriculture for the years since 1900 appear erroneous. At the time it was announced that the figures for 1901 were withheld pending revision when the census returns came in. The census showed 40 million sheep and 21 million lambs, or a total of sheep and lambs of 61 million. When the Department of Agriculture published its delayed estimate for January 1, 1901, the figures showed 59 million sheep,—an increase of nearly 18 million over their figures for 1900, and of 19 million over the census returns for seven months previous. This is incredible. Other available data fail to substantiate it, and certainly there was no such increase in the domestic wool supply as this would entail. The most obvious explanation is that the figures of the department, through some error, included lambs as well as sheep. The sharp decline in their estimates for the last two years may be an attempt to rectify this.

embodying an important lesson, is that in the New England, Middle Atlantic, North Central, and Southern States, as here grouped, there are now, after eight years under the duties of the Dingley tariff, fewer sheep than at any time throughout the period when wool was admitted free!

The point upon which most of the explanation for this phenomenon hangs is that nearly all of the land in this region that had been used for sheep could be used for other purposes as well. *It was not land which was pre-eminently fitted for sheep and little else.* Some idea of what were these other things to which the farmer has turned may be gathered from the following table, which covers all the important wool-growing States of this section:—

PERCENTAGE OF INCREASE OR DECREASE OF FARM PRODUCTS, ETC., 1890-1900. COUNTIES WITH FIFTY OR MORE SHEEP PER SQUARE MILE IN 1890

	Sheep.	Dairy cows.	Im-proved land.	Total farm area.	Wheat acre-age.	Corn acre-age.	Oats acre-age.	Hay and forage acreage.
Ohio	36—	2+	10—	3+	35+	23+	6—	1—
Michigan . . .	39—	5+	8+	5+	19+	31+	15—	6+
Indiana	19—	4+	7+	5+	3+	25+	13—	2—
West Virginia	45—	11+	13+	8+	12+	9+	53—	5—
Kentucky . . .	19—	3+	4+	2+	44+	26+	70—	19+
Pennsylvania	41—	8+	1—	2+	23+	12+	8—	3—
New York . . .	36—	8+	2+	3+	27+	34+	13+	5+
Vermont . . .	51—	22+	25+	8+	78—	35+	30—	3+

COUNTIES WITH LESS THAN FIFTY SHEEP PER SQUARE MILE IN 1890.

	Sheep.	Dairy cows.	Im-proved land.	Total farm area.	Wheat acre-age.	Corn acre-age.	Oats acre-age.	Hay and forage acreage.
Ohio	21—	5+	17+	8+	53+	16+	14—	3+
Michigan . . .	12+	40+	50+	44+	61+	134+	12+	16+
Indiana	6—	3—	11+	1+	14+	25+	7—	6+
West Virginia	13—	8+	24+	2+	33+	26+	43—	6+
Kentucky . . .	27—	1—	20+	3—	65+	14+	48—	2—
Pennsylvania	40—	10+	10+	6+	14+	19+	11—	2—
New York . . .	34—	4+	4—	3+	10+	33+	14—	5—
Vermont . . .	39—	15+	15—	7+	79—	52+	27—	10+

¹ Less than 1 per cent. decline or increase.

These tables, based on the census, show that the total farm area increased in every case but one, though in Pennsylvania, New York, and Vermont the improved land declined or failed to increase as rapidly. Apparently, farming was not on the decline. In every case but one¹ the number of sheep fell off, and the losses were, as a rule, proportionately greater in the sheep counties. From this it seems reasonable to infer that, where the sheep were the most numerous, the flocks presumably the largest, and the industry specialized in, there sheep-raising proved more unprofitable than where the flocks were smaller and had been kept as incidental to general farming. In the sheep counties in every case, and in the others in every case but two, there was an increase in the number of dairy cows. Moreover, this increase was proportionately greater in those very counties where the losses of sheep were the heaviest,—certainly strong presumptive evidence that it was the dairy business which was driving out wool-growing, especially when we remember that in these States most of the land used for the one purpose is, as a rule, as well suited for the other. But the dairy is not the only rival, for the figures give, in every instance, a considerable rise in the corn acreage, and in every State but Vermont a similar tendency towards wheat. The hay and forage area has remained fairly stationary. The absolute figures would show that a small part of the extension of the wheat and corn acreage could be accounted for by the decrease in oats, and still more by the increase of that portion of the improved land which had been included in or replaced by a part of the new farm area. Yet, when allowance is made for the amount of the improved land which is turned to still other purposes, the figures would seem to show (and general observation

¹These counties represent an abnormal condition, including as they do the northern part of Michigan, which was undergoing a rapid development at the time.

bears this out) that some of this land has been diverted from the use of sheep.¹ The causes leading to these changes are most instructive.

The years when wool was free happened to be unusually trying ones for the farmer, as well as for industry in general.² Nearly all farm products were low in price, wool and mutton naturally suffering most. It was then that the possibilities in the raising of other farm products were most vividly brought to the notice of the wool-grower, for almost anything seemed to pay better than sheep. Cattle and dairy produce suffered less than other farm products in the general drop in prices, and so, where the conditions were favorable, the farmer naturally turned to these. Such, for instance, seems to have been the case in Vermont, eastern New York, south-eastern Ohio, West Virginia, and Wisconsin. On the other hand, where the soil offered better opportunities for cultivation, he turned to grains. In western New York, northern Ohio, and Kentucky it was to wheat, while in the belt extending westward from Ohio it was to corn, accompanied by the feeding of stock, notably hogs, and frequently also by the dairy. But when the period of distress had passed over, and the Dingley tariff sent forth its warming beams of protection to revive the stricken industry, the response of the Eastern wool-grower was but faint. Some increased their flocks again, but have since given them up. Still more seemed content to let the change remain permanent. They had learned the lesson. It had taken a long time, and the blow which finally brought conviction proved a costly one; but it was learned, and well learned.

¹ In the case of wheat, at least, it is perfectly possible for both sheep and wheat to increase together; but here there is no indication that such was the case.

² The index numbers for farm products for the years 1894-97 were 95.9, 93.3, 78.3, and 85.2, respectively, 100 being the average for 1890-1899. For this and other prices for this period, see *Bulletin of the Department of Labor*, March, 1903, p. 245.

The burden of that lesson was that times had changed, and economic conditions were different. There *had been* a time when the conditions in the region centring about Ohio were admirably adapted for the industry of growing wool. As early as 1855 there were some indications that these conditions were passing away; but then came the abnormal and artificial stimulus during and following the Civil War, and the real state of affairs was hidden from view. Thereafter the situation grew worse, while the wool-grower battled against his impending fate; but, when the truth was so sharply revealed to him by the period of free wool, he at last became convinced. In this revelation he saw that, as the means of communication and transportation had improved, and new regions had been opened up and developed, there had appeared, both here and abroad, lands *economically* better fitted for this industry than his, while, on the other hand, his own acres were well adapted to the raising of other commodities in the production of which these new lands were unable to compete. In effect, the change was a step in advance towards a better and more nearly world-wide division of labor.

In this division of labor, as it now appears arranged, there are other things for which this section of the United States is economically better fitted than the growing of wool. Pre-eminent among these is the raising of corn. The great corn belt of our country stretches from central Ohio westward to eastern Nebraska, including a part of Kansas and northern Missouri. Probably no other region of equal area on the earth is so well fitted, both by climate and soil, for the raising of corn as is this. Along with the corn there naturally goes the feeding of stock, especially cattle and hogs, and the closely related dairy. May we not predict that the more immediate future growth of this belt will be along these lines? In those parts better

suites for wheat they are at present able to compete with the world, though their relative advantage does not seem as great as in the case of corn. The future here is perhaps less certain, but that sheep will play any prominent part in it seems unlikely.¹ In the districts unsuited for the plough the outlook for the sheep is not much better. Sheep can be kept where dairy animals cannot. The pasture here will keep either. So long as there are many other regions which support the dairy animal only with difficulty or not at all, the chances are that in the competition between the two for the better pasture of the East the sheep will be worsted. Further, the dairy secures an additional hold on these Eastern lands because it has more to gain from being near the centres of population than has the sheep industry. We are thus led to believe that the industry of growing wool in this section of the country as an independent industry is doomed. At present there is little prospect here for the sheep, except as an incidental part of general farming. The general farmer can easily keep a small band (though it must be mainly for mutton and lamb), as it entails almost no serious additional expense, and helps to improve his fields, while making use of much that would otherwise be wasted. As the grain fields become less fertile and farming becomes more diversified, the opportunity for the flock of sheep along this line may be greater; but, to find the industry carried on separately and with any independence, we must look elsewhere.

The real wool-growing section of the United States at the present time is to be found in that district, previously outlined, which lies in the Far West. Here alone has there been any progress in this industry during the years since 1890; and it is here alone, if anywhere in this country,

¹ Small flocks of sheep are frequently kept in connection with wheat, but they are incidental, and their purpose is to raise mutton and improve the land rather than to grow wool.

that the business of growing wool can have any future as an independent pursuit. For it was not until this region was opened that the wool-grower at last found a place where he could feel fairly secure before the ever-advancing march of cultivation which had driven him nearly across the continent from the Atlantic and was threatening to make a like attack from the side of the Pacific. Here he first reached soil upon which the cultivator could not trespass,—land too arid for farming, yet suitable for sheep.

This vast area had hardly been entered by the wool-grower until after the completion of the Union Pacific Railroad in 1869. Conditions here were very unlike those in the East, the sheep being on ranges instead of farms, and most of the first flocks coming into the region being brought to supply mutton, not wool. There had been, from the first, some neglected bands of sheep in New Mexico and southern California, but they did not spread until the opening of the various mines—gold, silver, lead, and copper—created a great demand for mutton. Later, when the railroads opened up the interior region, it rapidly developed as a centre for wool-growing. The early growth came in the central and southern tiers of States, this section having contained such original flocks as there were, as well as the mines first worked and the first railroads. The more northern States—Wyoming, Montana, Idaho, and eastern Washington and Oregon—did not become prominent in wool-growing until later. Although they made a good start in the decade following 1880 (the Northern Pacific was completed in 1883), yet it was not until after that period that the greatest growth took place,—a growth which has been the most striking feature in the recent history of wool-growing in this country.

The trend of events in the different districts of this

section, as illustrated by the table below,¹ shows that, beginning with 1890, the flocks in the southern section were declining, under the McKinley Act as well as the Wilson Bill, while in the north a rapid advance was taking place,—an advance so determined that even the terrors of free wool could not check it. In fact, beginning with April 1, 1894, and ending April 1, 1897, there appears to have been a gain in the number of sheep in Idaho every year, and in Montana, Arizona, Nevada, Wyoming, and Colorado in every year but one. All of these end the period with more sheep than they started with,²—a result which leads one to wonder as to the necessity of a protective tariff for the wool-grower of those States. On the reimposition of the duty the advance became more rapid, and in Montana, Idaho, and Wyoming assumed phenomenal proportions; but by 1902 the maximum had been reached, the flocks

¹THE NUMBER OF SHEEP IN WESTERN STATES, 1890-1904
(00,000 OMITTED).

	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Northern Rocky Mountain	34	36	37	44	46	47	52	57
Southern Rocky Mountain	83	80	78	72	70	73	70	70
Pacific Coast	76	68	72	74	70	64	59	56

	1898.	1899.	1900.	1901.	1902.	1903.	1904.
Northern Rocky Mountain	63	75	90	109	121	116	116
Southern Rocky Mountain	73	80	97	91	85	80	76
Pacific Coast	57	51	50	43	42	41	41

See note to corresponding table for the East, *infra*, p. 630.

The Northern Rocky Mountain States include Idaho, Wyoming, and Montana; the Southern Rocky Mountain States, Nevada, Utah, Colorado, Arizona, and New Mexico.

²This statement is based on the figures of the wool manufacturers' *Bulletin*. According to the estimates of the Department of Agriculture there was a gain every year from January 1, 1894, to January 1, 1898, in Montana, Arizona, Nevada, Wyoming, Colorado, and Idaho. See its *Year Books*.

in the region to the south having previously fallen off, and the decline then became general.

The chief reason for the stationary or declining conditions of very recent years seems to be that the range, under the present conditions, has about reached its capacity. That there is a great deal of unnecessary waste of the free range is certain,¹ and less extravagant methods would enable a considerable increase in the flocks; but, on the other hand, there are many factors tending to counteract this. The policy of establishing forest reserves, so rapidly pushed by the government of late, has considerably reduced the range area, though it is hoped arrangements can be made such as will give the flock-owner greater freedom in the use of these restricted parts. There has also been an increased tendency on the part of individuals or companies to buy up large tracts, or at least such water rights as secure a practical control of large tracts; and here, again, the free grazing lands are cut down. While this involves additional expense, it also will secure greater economy in the use of the pasturage, but probably will tell more in favor of the cattlemen.² Then, of course, there are a large number of comparatively small strips which it has been found possible to cultivate, the number being increased as the irrigation systems are extended. Frequently, however, these prove a boon to the wool-grower, for the crop enables him to enlarge his flock. Here alfalfa has been found especially valuable, growing readily in these lands, and being excellent for feeding sheep. Again, the good work done by the Department of Agriculture in introducing new plants suited to this dry region further encroaches upon the wool-grower's

¹ See the *Bulletin of the National Association of Wool Manufacturers*, December, 1904.

² In the contest between the cattlemen and the shepherds the latter had under free range an advantage in that their sheep could feed where the cattle could not, as well as grazing other regions so close that cattle could not follow.

domain. Thus the macaroni wheat is said to occupy some ten million acres formerly used for pasturage. Yet despite all this there can be little doubt that for some time to come vast tracts in these States will remain devoted solely to grazing.

The point which it is of especial importance to understand is that with the filling up of the northern group of these States there has come to an end the time when the wool-grower of this country could turn to still unoccupied lands for refuge from the ever-menacing competitors in other branches of agriculture. Ever since the industry arose in this country, such advances as have been made came through the opening up of new regions; and it has been upon such advances that we have had to rely to offset the decline (increased, though not primarily caused, by these advances) which took place elsewhere. This is a factor which for the future has been eliminated. On the other hand, we now find the industry located under conditions such as promise to make its refuge less insecure than in former cases. Because of the character of the region there are not as many other agricultural pursuits likely to become serious rivals as was the case in the East. This means that the actual direction which the industry takes will be determined to a greater extent than formerly by the competition it meets from others in its own line of production. But it is here, if anywhere in this country, that wool-growing as an independent industry has a future. Under the economic conditions which seem likely to prevail, this region is better suited for wool-growing than any other. Hence new domestic competition need not be feared. All of which points to the conclusion that in the future of the real industry of wool-growing in the United States a greater part than ever before will be played by the competition from abroad.

There is one other form of competition to which wool-growing is subject, that of mutton-raising, or the question of mutton *versus* wool. Wool-growing has generally been spoken of above as if it were the sole, or at least the main, object in keeping sheep; and for most of the existence of this industry in the United States such has been the case. But there are many indications that for the future here also a change is impending.

The people of this country seem to have been slower than most in recognizing the good qualities of lamb and mutton, probably due in part to the fact that most of the flocks in earlier years were not of the species best suited for mutton. Though the taste for this meat has been steadily growing, yet the chief increase in the demand (the exports are insignificant) has come from the needs of a rapidly increasing population.

As has already been stated, the movement towards mutton did not begin in the region to the west of the Alleghanies until the fall of wool prices after 1880. But by 1890 it was estimated that fully 50 per cent. of the sheep to the east of the Mississippi River were of mutton breeds.¹ These sheep need to be kept in smaller flocks, besides requiring a richer pasture and greater care than the ordinary merino; and such requirements this region was well prepared to meet. It was found that as a part of general farming a small flock could be kept with very little additional cost, and there was a good market for their sheep near at hand. Then the raising of spring lambs proved especially profitable, the practice being to buy Western ewes in the fall, cross them with a mutton ram, sell the lambs early in the spring, and fatten the ewes for slaughter later. Feeding his grain in this manner has frequently proved the farmer's most profitable way of marketing it, not to mention the improvement of

¹ For figures in 1893 see the wool manufacturers' *Bulletin*, vol. xxv. p. 110.

his land thereby. That these advantages are generally recognized is indicated by the fact that at present fully 80 per cent. of the sheep of this region are of mutton breeds.¹ At present the chief object in keeping sheep in this section of the country is mutton and lamb, not wool; and such it is likely to continue, for few regions where sheep are kept are so well adapted to the mutton breeds. We have already found that sheep-raising here is but a part of general farming. Now, it seems, wool-growing is but incidental to the raising of lamb and mutton.

Turning to the West, we find that even there wool no longer holds undisputed sway as against mutton. The introduction of mutton rams has proceeded so rapidly that in 1900 it was figured that 30 per cent. of the wool grown here came from mutton sheep. This tendency is more general in the northern and central States than in the more barren and dryer districts further to the south. The demand for "feeders" from the granger States, where most of the Western sheep sent to market are fattened, has had much to do with this. With the increasing demand for mutton, the advantages to be gained will certainly lead the sheep-raiser, where possible, to give more of his attention to the meat-producing qualities of his flock, and less to the fleece. In brief, wool-growing as the main object in sheep-raising has already practically disappeared from the East, and seems destined to play a less and less important part in the West. So that the future domestic wool supply is likely to depend less on the wool market than on the market for lamb and mutton.

¹ *Census of 1900*, vol. v. p. cciv. These include the French (Rambouillet) merino and delaines, the mutton breeds of the merino race, as well as the English breeds, the most popular of the latter being the Shropshire and Southdown. For a detailed statement of the proportion of each breed in the flocks of Ohio see *Ohio Agricultural Report*, 1902, pp. 30-36.

Thus far it has been the competitors affecting the supply side of this industry which have received our attention. But our survey would be incomplete without some consideration of those which affect the side of demand. The most striking feature here is the great falling off in the consumption of wool which has taken place in the country since 1890. Up to that year, according to the census figures, there had been an increase in the consumption of wool every decade since the figures began in 1840; yet in 1900 it dropped back nearly to the point reached in 1850.¹ The chief cause of the fall is the smaller importation of manufactures of wool; but as there is no present indication that these are likely to increase, and the imports of raw wool have not risen fast enough to offset this fall in consumption, we may fairly infer that it is not simply temporary. Moreover, the phenomenon, it appears, is not limited to this country, but general in its extent. Thus there proves to have been a slight falling off in the consumption of the United Kingdom,² while the figures of a well-known London firm indicate that the decline is general over both Europe and North America.³

¹ CONSUMPTION OF WOOL IN THE UNITED STATES (MILLION POUNDS).

	Imports. Raw wool.	Home production.	Net Supply.	Imports in form of manufactures @ 3 lbs. per \$1 value.	Total consumption.	Per capita consumption.
1890 . .	109	276	385	162	548	8.75
1900 . .	128	310	437	46	483	5.97

Census of 1900, vol. ix. p. 94. Also a comment on the figures for 1900.

² British Board of Trade, *Charts for the St. Louis Exposition*. These are based on figures of Helmuth, Schwartz & Co.

³ *Wool Report*, March 8, 1904, of Helmuth, Schwartz & Co. Commenting on the situation, they say: "The change is particularly striking in the United States where during the seven years 1887-93 the actual consumption of raw wool (in-

The explanation, of course, is to be found in the competition met with by this comparatively expensive fibre from less costly substitutes. The use of shoddy and similar forms of wool is on the increase. Competition between manufacturers in their efforts to undersell one another inevitably leads to a greater use of these cheaper raw materials,—a movement spurred on by improved methods for employing them, the result of efforts to meet the demand of the public for a less expensive fabric. The most dangerous rival, however, has been cotton. The consumption of cotton in this country has steadily advanced at a faster rate than that of wool,—a feature particularly marked since 1890.¹ Wool has been low in price during these years, but the fall in cotton has been proportionately greater. For the decade 1881-90 the average price of upland middling cotton was 10.8 cents, between 1891 and 1900 it averaged 7.6 cents, and yet the former figure was lower than for any like period since the 40's.² Not only do cotton goods seem to increase in favor faster than woollen, but cotton is invading its rival's own home. The use of cotton in the "manufactures of wool" is rising faster than that of wool itself.

cluding the equivalent of imported manufactures) was over 8½ pounds per head, in the succeeding eight years, 1894-1901, it was still over 7½ pounds on the average, while during the last two years it was barely more than 6½ pounds per head." Their figures give the quantity of wool, raw and cleaned, at the disposal of the industry on average periods per head of population for Europe and North America.

PERIOD.	Clean wool.	Year.	Raw wool.
1881-1890	2.57 lbs.	1880	4.46
1891-1900	2.76	1890	4.74
1901-1903	2.65	1900	4.45

See also the manufacturers' *Bulletin*, vol. xxxii. p. 75.

¹See table in the *Census of 1900*, vol. ix. p. 12. The advance in the exports of cotton goods does not sufficiently account for the greatly increased domestic manufacture, and, besides, the imports have increased.

²Based on the figures of the *Statistical Abstract of the United States*.

	<i>Approximate total of wool consumed in condition purchased.¹</i>	<i>Total consumption of cotton and cotton yarn in manufactures of wool, including hosiery and knit goods.</i>
1890	434 million pounds	210 million pounds
1900	475 million pounds	332 million pounds

By far the greater proportion of this increased use of cotton has come in hosiery and knit goods. All this reveals one reason why the decline in the world's wool supply of late years was for so long unable to advance the price of that staple. That cotton will continue to be produced at such prices as ruled between 1890 and 1900 seems evident, though probably not at prices much lower. Recent events make plain that any increased demand tending to raise the price can at once be offset by an extension of the cotton acreage. But as a further decline to a lower level is not to be expected, it is unlikely that the use of cotton in place of wool will continue to increase so rapidly as it did while a lower price was coming in; provided, however, that the quotations for wool do not show a material and sustained advance.

Another feature of some significance in the demand for wool has been the change which has taken place in the grades most called for. The preference for coarser fabrics, which has been slowly growing ever since about 1840,² now prevails so extensively that in the last census it appeared that the manufacture of worsted goods used more wool than even that of woollens. As a result, the medium and coarse grades of wool used for worsted goods have been much in demand. In fact, these wools could never have maintained their relatively high price level in the face of the increased supply of cross-bred wool, had it not been for this favorable turn in the tide

¹Based on figures in *Census of 1900*, vol. ix, pp. 93-95, 118.

²This is illustrated by the changes in men's apparel. Formerly it was all preferably broadcloth, then worsted coatings grew in favor, and now the fashion dictates the coarser goods for the frock coat and dress suit.

of fashion. This development, if lasting, will be of no little importance to the sheep-raiser of this country, in case he is destined to be primarily a producer of mutton; for it means that the wool grown upon his sheep, being of these grades, will sell at so much the better price. It is also favorable to the consumer, for it is evident that, under the conditions which will increasingly prevail through the more advanced countries, growing wool upon mutton sheep must be the more economical method and thus produce the cheaper wool.

What conclusions now are to be drawn from this review of the struggle between the industry of wool-growing and its varied competitors? The very multiplicity of the competitors, with the numerous possible combinations of factors in the problem, and the differences in the strength of each, must render any deductions uncertain. The attempt has been but to point out certain dominant tendencies, and the results to which, under given conditions, they lead. To gain an understanding of these tendencies, we have studied the recent past. There, among other things, it was found that foreign wool has of late failed to gain ground against the domestic product, and, if anything, has lost. This, however, has not resulted, unless negatively, in any gain to the home grower; and that gain which he might perhaps have had, or at least divided with his foreign rival, has instead gone largely to the cotton planter. That the tariff is of benefit to the wool-grower is clear; but it is deceptive, and the extent of the aid received is generally less than the nominal duty would seem to indicate. Although there has been no marked alteration in the total wool clip of the country, and the falling off in the flocks has not been very serious, yet there have been marked changes in their distribution. A study of the causes for this makes it

clear that general agricultural conditions have been the determining factors in the course actually taken by this industry. The tariff, though not vain, has failed of the end desired. Inadequate for the task imposed, it was defeated by superior powers.

For the future these tendencies point to a decline in sheep-raising as an independent industry mainly for wool. Mutton will increasingly dominate the situation, and wool become but secondary. In the East, where sheep promise to be incidental to general farming, and wool incidental to mutton, the basis of the industry will be such that the tariff can be of but comparatively slight importance. In the West, which offers sheep-raising far better prospects and a more independent basis, protection can do much more for the wool-grower. Here the competition of the foreign grower is likely to become a more serious factor. But, just in so far as mutton becomes the main objective here in place of wool, to that extent the weight of this foreign rivalry will be lessened and the security of the industry strengthened.

Finally, as the new lands of the world are developed and made easily accessible, the location of industries depending largely on natural resources is more and more determined by physical conditions. In the United States these conditions are such as to render a further advance in wool-growing highly improbable, and a gradual decline likely. The power to prevent this, as experience shows, is not to be found in the present tariff. Hence, if such better division of labor as present progress permits is not to be taken advantage of,—if it is settled policy that an independent industry of wool-growing must be fostered and maintained in this country, both in the West and in the East,—then it is not enough to levy a duty which will simply offset such advantages as the foreign wool-grower may have, one designed simply to enable the domestic

grower to compete for the home market on equal terms. The foreign fleece is by no means the only rival of his sheep. Equally serious competitors are to be found at home in other products of agriculture. The very advantages and great resources of the country become obstacles. Therefore, he must have a duty that will not only enable him to compete with foreign wool, but one that will make his industry at least as profitable as any other that might be carried on in its place,—only thus can his flocks be maintained. Yet even then there remain the many forms of competition which operate upon the market for wool, so as to lessen the demand. Here the power of the tariff ends. Against these, duties are of slight avail; and, whether the industry would thrive in spite of this, only experience could tell. The deeper one studies this industry of wool-growing, the better he will realize how varied is the guise which its competitors assume, how manifold are the factors which determine its course, and, above all, how difficult it is to control that course artificially.

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