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COTTON SUPPLY AND DEMAND.

By E. H. TAYLOR.

THE subject which I have the honour to bring before your notice to-day is one of the greatest importance to the world in general and more especially to those, who like most of us, are dependent upon the prosperity of the textile trades for our livelihood.

From mediæval times the city of Ghent has occupied an honoured place in the annals of textile industry. It might, in fact, almost be said to be one of the birthplaces of European textile manufacturing as it is understood to-day.

England undoubtedly owes much to those Flemish weavers who, on account of the Spanish persecution, settled in our country and assisted in laying the foundations upon which the greatest industry in the world, the English cotton manufacturing trade, was subsequently built up.

Few people who are not actively interested in the cotton trade—and I am afraid not also many who are engaged in it—realise what enormous progress has been made during the last 25 to 30 years in the volume of trade done in cotton goods. It is my intention to put before you as briefly as possible what results have been achieved, and to speculate upon what the requirements of the world are likely to be in the space of another quarter of a century.

The following table will show the approximate production in bales of 500 lbs. of the world's total crops of cotton. I have as far as possible estimated in standard bales of 500 lbs. each, in order to avoid the confusion that arises in so many statistical tables of classing American bales of 500 lbs., Egyptian bales of 700 lbs., East Indian bales of 400 lbs., and Russian bales of 280 lbs., together and giving the total simply as bales.

WORLD'S CROP PRODUCTION IN BALES OF 500 LBS.

	1885.		1900.		1912.
America	6,260,000	...	10,176,000	...	16,043,000
Egypt	587,000	...	1,221,000	...	1,485,000
India... ..	2,124,000	...	2,160,000	..	3,016,000
Other Countries ...	989,000	...	1,500,000	...	2,160,000
	<hr/>		<hr/>		<hr/>
	9,960,000	...	15,057,000	..	22,704,000
	<hr/>		<hr/>		<hr/>

This table is worthy of the closest attention and study. It will be seen that in the comparatively short period of just over a quarter of a century the production of raw cotton in the world has increased by nearly 130 per cent. Of course, the American crop in 1912 was an abnormally large one, but the great vitality of the industry is proved by the fact that in spite of this particular crop being four million bales greater than in 1911, and even $5\frac{1}{2}$ million bales larger than in 1910, it has practically all been absorbed by the extraordinary demand. The demand, moreover, although constantly fluctuating in individual years shows on the whole a remarkably steady increase. Thus, in the 15 years from 1885 to 1900 it increased 50 per cent., and in the 12 years from 1900 to 1912 a further increase of about 50 per cent. has to be noted. The average from these figures works out at a yearly increase of 340,000 bales for the first 15 years, and an average yearly increase of 637,000 bales for the last 12 years.

As far back as 1904, Mr. J. A. Hutton, the chairman of the British Cotton Growing Association, estimated the yearly increase required at the figures of 400,000 per annum. These calculations prove that his estimate was an extremely reasonable one.

So far we have only dealt with the question of supply. The figures given are those of the total crops of the world as nearly as I have been able to calculate from the most reliable figures available. We will now examine the question of demand. The reason I have reversed the usual order of things and dealt with demand last, is that in my opinion the demand has, on the whole, proved greater than the supply. This is shown by the fact that these hugely increasing supplies have been year after year absorbed by the trade, and in many years, notably 1902, 1904, and even as recently as 1910 more cotton could and undoubtedly would have been consumed had the supply been available. Also it must be noted that this increase in demand has taken place in spite of a general increase in the price of the commodity.

It may be said that during the last few years there has been a boom in trade and that conditions on this account are abnormal. The important fact is, however, that the increase over a quarter of a century has been gradual and practically steady in spite of temporary set-backs and the usual ebb and flow of the commercial tide, and there is every reason to believe that the future holds out even greater promise of good things than we have had in the past.

On every hand, in every country one visits there are evidences of the advance of prosperity. Now this general increase in wealth naturally reacts upon the prosperity of the cotton trade. As a country becomes wealthier, its demand and consumption for cottons increases. The masses of population in Europe and America are becoming more luxurious every year in their habits

and modes of living, and the more even distribution of wealth in the highly-civilised communities is eliminating that element of population which a hundred years ago was a menace to the public weal.

The great growth in the demand, however, for the products of the world's cotton manufactures in the future is not to be looked for so much from the highly-civilised States of the world as from the enormous populations existant in China, India and Africa.

In China alone we have a population of 400 millions, who, if they were to consume cotton goods to the same extent as some European peoples, would require more than 20 million bales per annum for their own use. In Africa we have 150 millions who are only partly clothed. The population of the world in the present year is estimated by Whitaker at 1,623 millions of people. According to this same authority the increase is approximately 5 per cent. since the last census, so that there is a prospect of an additional 80,000,000 people requiring clothing in a more or less degree in another ten years.

If the proportional increase of demand for cotton in the next quarter of a century proves to be as great as in the last 25 years, that is, if it increases again by 100 per cent., we should require a world's crop of from 40 to 45 million bales by, say, 1940.

If the increase is actual and not proportional, we should want 35 million bales. One cannot, however, expect that the demand can for ever be maintained at this rate. There are the questions of labour to be considered, both with regard to the cultivation of cotton and the labour involved in the production of the manufactured article. Still, one can safely say that, given a prolonged state of peace, such as the great nations of the world have enjoyed for the last forty years, it is practically certain that the demand will increase, and probably increase somewhere about the rate of 400,000 bales per annum, so that it is not unreasonable to expect a consumption of 30 to 35 millions of bales in 1940. The only reason I can see to prevent this increased demand would be for some calamitous war to take place amongst the great European nations or in the areas where cotton is principally produced, that is, the United States of America, India or Egypt, and there are fortunately no signs or portents of coming storms in the political atmosphere that would lead anyone to predict such a dire calamity.

We will now consider where we are likely to be able to obtain this future supply of the raw material, which we all hope for the progress of the textile industries will eventually be required. Suppose, for instance, that in 1940 the world's requirements were to be 35 millions of bales, it is rather interesting to speculate from where this quantity is to come.

Judging from the rates of progress in the past, and to a certain extent on the possibilities of the situation, it seems to me that we

shall require at least 4,000,000 more bales from India. Egypt and the Soudan will probably produce an additional 2,000,000 bales, and America say, a further 4,000,000 bales, making:—

ESTIMATE OF SUPPLY IN 1940.

America, United States	20,000,000
India... ..	7,000,000
Egypt and the Soudan	3,000,000
Other Countries	5,000,000
	<hr/>
	35,000,000

The other countries include principally, Nigeria, Uganda and East Africa, Brazil (where the possibilities of extension are great), the Russian cotton States, China, etc.

These figures are, of course, entirely chimerical and imaginary, and my only excuse for introducing them is to draw attention to the requirements.

This great work of increasing the supply is primarily under the control of the Governments of those countries where cotton can successfully be grown. Firstly, the American Government is taking the most active interest in this question. Its Bureau of Agriculture is doing excellent work in carefully compiling the fullest statistics relating to the crop and tabulating the results for the guidance of the growers.

In England the British Cotton Growing Association, in conjunction with the Government Colonial Departments, has for years been experimenting in various parts of Africa, and good results may subsequently be looked for.

The body, however, that has done the most to bring this matter into the prominence to which it is entitled is undoubtedly the International Federation of Master Cotton Spinners and Manufacturers, whose headquarters are at Manchester. In conjunction with the British Cotton Growing Association, it has recently succeeded in inducing the British Government to spend a sum of £3,000,000 in the Soudan in order to increase the cultivation of cotton in that district.

At the present time it is urging upon the Indian Government the advisability of taking more energetic steps to promote cotton growing in India. I understand that Mr. Arno Schmidt, the secretary of the Federation, is shortly to take another journey through India to study more closely the methods in use in that country, and to see what can be done to improve the quality as well as the quantity of the cotton grown there. If India could produce a cotton of longer staple, it would be of inestimable advantage to the trade, because at present we are practically entirely dependent upon the United States of America for the production of medium qualities of cotton. Hitherto, Indian cotton has been too poor, and Egyptian cotton too expensive to be used by the bulk of the cotton spinners in England.

From the experiments made in India up to the present it

appears that cotton grown from selected American seed produces a staple of usual length for the first crop, but that subsequent crops revert back to the smaller staple of the indigenous Indian variety. From this it would appear that the soil was not entirely suitable. No doubt improved methods of cultivation and fertilisation of the land will in time remove this difficulty. I saw a suggestion a few weeks ago in the "Manchester Guardian" of the advisability of sending out a few experts in cotton agriculture along with Mr. Schmidt, in order that a complete investigation of this question could be carried out. It is to be hoped that the Employers' Federation will press this matter for the consideration of the British Government. Government officials are generally more of an administrative than a technical turn of mind, but this case is one that calls for the utmost technical knowledge; otherwise, both time and money may be wasted by working upon the wrong lines.

However, whatever experiments in improving the Indian staple may be carried out, there still remains a great demand for Indian cotton in its present form. England uses very little of this cotton, but Germany and other European countries of late years have consumed large quantities, and thus liberated American cotton for use by other countries whose machinery is more especially adapted for it. So that there is no reason to call a halt while these experiments are being carried out.

While we are dealing with this question, I should like to touch upon the international aspect of the case. It may be thought onerous that the work and expense of developing the increased cotton supply should principally fall upon the English and American Governments and peoples, and that other countries are likely to reap the advantages without having the trouble of sowing the seed. The nations are now commercially so dependent upon each other that any considerations of this kind are unworthy of notice. England and America are in the position with regard to cotton supplies of trustees for the world at large, and it is their duty to provide for its requirements if possible. When also by performing their duty they further their own interests there is every reason to expect that this question will receive their most benevolent attention.

Moreover, this interdependence of commercial interests is the greatest asset there is for universal peace. The more the interests of the great nations are interwoven and mutual, the greater likelihood there is that at times of political tension and stress, wise councils will prevail. The commercial interests of every country are becoming more powerful year by year. As commerce cannot thrive except under conditions of peace and confidence they exercise an important and ever-increasing influence upon the political views of the different Governments.

Fortunately in the cotton trade, we can meet our competitors as friends and talk over with them the difficulties and dangers to which we are all exposed. That this spirit is recognised universally is proved by the magnificent response made to the

efforts of the English Master Cotton Spinners and Manufacturers' Association when they first formed the International Federation in 1904. Now 90 per cent. of the total spindles of the world are represented by members of this Association, all working together with a common interest and pledged to assist each other in any of the crises which from time to time arise in all trades. You will probably have read an article by Sir Charles Macara, published in July of this year by the "*Revue Economique Internationale*," of Brussels, in which an account is given of the work done.

One point I should like to dwell upon is mentioned by Sir Charles Macara in speaking of the possibilities of increasing the world's cotton supply, and that is the great impetus that would be given to production by the invention of a mechanical apparatus for cotton picking. Many attempts have been made, but none so far has been a complete success.

The difficulty seems to be that as all the bolls do not ripen at the same time, the crop has to be picked three times by hand in order to obtain the full supply. Now one would think that a machine could be invented that at any rate would facilitate the gathering in of the last crop, even if the difficulties of dealing with the first two pickings cannot be overcome. At any rate this problem is worthy of the close attention of our rising young engineers of all nationalities. The inventor of such a machine would not only reap a large fortune, but would be conferring one of the greatest benefits upon humanity.

To stimulate effort in this direction one might suggest that some Government or interested body might offer annually a monetary reward for the best work done in connection with such a discovery, or scholarships might be endowed to encourage research.

And now, not to trespass too long upon your time, I will conclude by again emphasising the importance of the study of this question. The more it is realised that the world's need for a great cotton supply is imperative, the easier it will be to provide for that supply. Every country can assist in the realisation of these hopes. There is a growing demand for agricultural experts who have made a special study of cotton growing. Some of those who are seeking future careers for their sons might do much worse than give them a course of tuition on a cotton plantation or on one of the experimental farms that are being conducted by the various Governments. There are honours to be won, and fortunes to be made in this field of enterprise, vast tracts of land to be brought by the aid of science and industry to contribute their share to the necessities of the world.

These operations will have to be carried out in tropical countries under conditions more onerous and tedious than life in these pleasant European countries, and much capital will need to be expended in the operations to be undertaken. When one realises that the cotton crop for 1912 (the raw material only) was valued at more than £290,000,000 or 7,250 millions of francs, one

can understand how far spreading are the ramifications of the industry, and how great is the community of interests between the countries engaged in it.

DISCUSSION.

The PRESIDENT said he would like to ask Mr. Taylor if there were no other reasons, in addition to the growth of the population and the increased prosperity, to account for the increased demand for cotton goods. He noticed to-day that more cotton goods were being worn throughout the world than ever before, and in a greater variety of articles. If he were in the cotton trade he would look upon that as a very healthy sign. There was cotton in the overcoat which he himself was wearing. He would not have thought of wearing an article with cotton in it, say, fifteen years ago. Personally, he thought that cotton had been so used, through the application of science and training and education, that it was now looked upon in quite a different light to what it was a few years ago. The mercerising of cotton had placed that material in a different category. He thought a great increase in the demand for cotton had been brought about through the brains that had been put into the industry.

Mr. OSCAR S. HALL (Bury) said he could give two other instances of demands for cotton which did not formerly exist. One was in the motor car trade. Complete weaving mills had been put up for weaving nothing but the cotton cloth which was used for the insides of motor-car tyres. The other instance had reference to the use of cotton belting. Owing to the very high price of leather, cotton belting was taking the place of leather belting.

Mr. W. BLEAKLEY (Manchester) remarked that the cotton industry was very much indebted to those engaged in other branches of the textile trades for the support they had given to the Government grant of three millions sterling for cotton growing in the Soudan. Only a few years ago it was considered unlikely that the Government would interest themselves, specially with the trade of one section of the textile industry, but Lancashire people were very pleased that it had done so, and that Sir William Priestley, who sat for one of the Bradford constituencies in Parliament, had supported the grant referred to. Those in the cotton industry were very grateful to those in the woollen and other textile industries for their support.

Mr. TAYLOR, in reply to the discussion, said he thought one reason why there had been such an enormous increase in the demand for cotton was the growth of civilisation. As soon as a nation became civilised the people immediately began to put themselves into clothing, even though the climate was hot. That would continue as nations become more civilised.

In the absence of Mr. J. H. LESTER (Manchester), Mr. FRANK WARNER (London) read the following paper:—