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*On the COMPARATIVE EFFICIENCY and EARNINGS of LABOUR at
HOME and ABROAD. By J. S. JEANS, Esq.*

[Read before the Statistical Society, 16th December, 1884. The PRESIDENT,
SIR RAWSON W. RAWSON, K.C.M.G., C.B., in the Chair.]

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I.—*Introduction.*

It will probably surprise others, as it has greatly surprised myself, to find that the present is the first attempt that has been made to treat this subject before our Society from the point of view indicated by the title of the paper. And yet it need not, after all, excite our wonder that the treatment of so vast and complicated a question by a purely statistical process has not hitherto been undertaken. There is, in truth, a very considerable, and in regard to not a few points, insuperable, difficulty in establishing comparisons between one country and another, so far as labour questions are concerned. Of this difficulty I have been most fully convinced, and my conviction as to the extremely uncertain and incomplete *data* on which I should largely have to depend has been deepened in exact proportion to the extent of my investigations. But there are, nevertheless, many valuable official facts, the collection and collation of which are, in my opinion, calculated to throw much light upon the comparative condition of the labouring classes at home and abroad, and I have entered upon this work with a strong feeling that if, through this Society, such knowledge could be diffused in even the smallest degree, its accomplishment could scarcely fail to be of some little use, at a time when we are hearing so much of danger from foreign competition, of trade depression at home and abroad, of the

socialistic doctrine that the rich are becoming richer and the poor poorer—in spite of our undoubted advances in wealth and civilisation—and of demands for Select Committees and Royal Commissions to consider causes and to suggest remedies. Nor will it be without some use to future workers in the same field, if I point out, as I proceed, where the difficulties in the way of making this investigation more complete chiefly lie, and what is their character and extent.

II.—*Comparative Efficiency of English and Foreign Labour.*

It will probably in this place be an uncontested proposition that British labour, all other things being equal, is the best and cheapest in the world. Much as our working classes have been blamed for their undoubted shortcomings, and greatly though in not a few cases their action has tended to hamper and shackle the course of industry, it has not yet been found expedient to import the lower-paid labour of other countries on a scale of any importance, and we seem to be as far as ever from an invasion of “Chinee *cheap* labour.” The explanation is not far to seek. Neither the shorter hours of labour, which have now given the English working man much more favourable terms in reference to the length of his day’s work than are enjoyed by most other countries, nor the repeated strikes for higher wages, ill-judged and most lamentable in their results though many of them have been, have yet effected the ruin of English trade and industry that has often been predicted by pessimist and shortsighted observers. It has, indeed, been reserved for the English workman to prove that neither shorter hours nor higher wages necessarily mean relatively dearer labour, and that his superior energy, endurance, and skill have so far enabled him both to enjoy these advantages and fully hold his own.

Let us clear the way by remarking, at the outset, that there is no subject related to the labour question that is so difficult of just appreciation as the comparative efficiency of the working classes in different countries. The investigation is complicated by many dissimilar conditions and widely divergent practices and modes of working, by the proportions of women and children employed, by the character of the machinery, by the fineness or otherwise of the products obtained, by the relative dryness or humidity of the climate, and by many other factors which cannot readily be assessed. It is comparatively an easy matter to establish the rates of wages paid in different industries, and the purchasing power of money in reference thereto. The hours of labour in different countries are equally easy of estimation; nor is there in some cases great difficulty in determining the nationality of the work-

man who will turn out the greatest quantity of work in a given time. But even if the latter fact were always easily capable of ascertainment, which it is not, there is the scarcely less important determinant of quality to be taken into account, and much less easy to appraise. Nor should it be forgotten that the comparative efficiency of the machinery at the disposal of the workman, and the variety and perfection of the labour-saving appliances available, have much to do with determining the value of the operative's labour. To borrow an example from mining experience, in certain mines drilling machines are employed, by means of which a workman is enabled to produce three, four, or even six times the average quantity he could turn out unaided by these appliances; but then such machines can only be employed in certain mines, where the ore is of a certain thickness, inclination, and physical structure.

With these reservations, let us now examine the question a little more in detail. This may be done with sufficiently approximate accuracy for all practical purposes by comparing the official statistics of different industries in the chief nations of the world.

The first important industry that appears to invite a comparison of results is that of cotton. This occupation is followed more or less in all modern countries, and, considered as a whole, employs a larger number of members of the human family than any other except agriculture. The most obvious method of ascertaining how far the cotton operatives of one country are superior in efficiency to those of another would be that of dividing the total number of hands employed into the aggregate production of cotton. Another process is that of dividing the number of hands employed into the total number of spindles in each country. The first method is open to the twofold objection that the exact production of cotton in each country is not known, and that, even if it were otherwise, the exact quantity of each quality or description of cotton would require to be known before a really reliable comparison could be made. The second method of computation is also defective, although perhaps in a less degree, by reason of the fact that a certain unascertained and unascertainable proportion of spindles are unemployed, and as this proportion may, and probably will, be much greater in one country than in another at any given time, any comparative results founded on such a basis must suffer accordingly.

A recent writer* gives the number of spindles to each operative in the cotton industry as under:—

* Mulhall's "Progress of the World."

Great Britain	83
United States	66
Germany	46
France	24
Russia	20
Austria	20
India	20
Average	54

These figures are probably as near the truth as any that we can command. Taking them for what they are worth, they show that Great Britain is just 54 per cent. better than the average of the seven countries compared; but as Great Britain, having an enormous preponderance over all other countries in respect to the *extent* of her means of production, is likely to have a larger proportion of those means unemployed at any one time, it is probable that the actual difference in her favour is considerably less than that figure. Even so, however, there can be no doubt that English cotton operatives, judged from this point of view, are superior to those of other countries in average productiveness.

But the question whether this relative superiority is being increased or diminished is scarcely less important than the facts we have just been considering. Let us see, then, how the figures stand in this regard.

The number of hands and spinning spindles employed in the cotton trade of the United Kingdom, and the average number of spindles per *employé*, here follow, as under:—

Year.	Number of Hands.	Number of Spinning Spindles.*	Number of Spindles to each Operative.
1851.....	330,924	20,977,017	63
'61.....	451,369	30,387,467	67
'71.....	449,987	34,695,221	77
'74.....	479,515	37,515,772	79
'78.....	482,903	39,527,920	82

* In addition to the number of spinning spindles here given, there are several million doubling spindles, which numbered exactly 4,678,770 in 1878.

With regard to power looms the numbers were:—

Year.	Number of Hands.	Number of Looms.	Number of Looms per Operative.
1861.....	166,209	999,992	2'4
'71.....	165,341	440,676	2'6
'75.....	163,332	463,118	2'8

Let us now compare these figures with corresponding figures for the United States, so far as they are at command.

The following is a tabular view of the cotton industry of the United States, 1860-80 :—

TABLE I.—*Statement showing the Position of the Cotton Industry of the United States in each of the Years 1860 and 1880.*

	Year 1860.	Year 1880.	Amount of Increase.
Number of works or factories	1,091	756	—
„ spindles	5,235,000	10,653,000	5,418,000
„ looms	126,000	225,000	99,000
„ employés.....	122,000	172,000	50 000
Capital invested..... (dols.)	98,585,000	208,280,000	109,695,000
Amount paid in wages	23,940,000	42,040,000	18,100,000
Cotton consumed	(lbs.) 422,704,000	750,343,000	327,639,000
Value of products..... (dols.)	115,681,000	192,090,000	76,409,000

Showing that in the United States, between 1860 and 1880, the number of spindles *per operative employed* increased from 42·8 to 61·9; the number of looms from 1·03 to 1·3; the cotton consumed from 3,448 lbs. to 4,362 lbs.; and the value of the products from 948 dollars to 1,116 dollars. In the United Kingdom, however, between 1861 and 1878, the number of spindles *per operative employed* increased from 67 to 82, and the number of looms from 2·4 to 2·8. Put in another way, the product of labour as regards the number of spindles employed was roughly 32 per cent. better in the United Kingdom than in the United States, while as regards the working of looms it showed a superiority to the extent of 80 per cent. That the number of spindles *per operative employed* increased by 19·1 per cent. in the United States, while it only increased by 15 per cent. in the United Kingdom, is not, I think, so much an evidence of absolutely superior progress on the part of the former country as it is a proof that there was great inferiority existing at the earlier period, which required to be largely made up before a proper comparison could be made. With regard to loom-working, it will be observed that alike in amount and percentage of improvement, we are better than our friends on the other side of the Atlantic.* I do not think it necessary to carry this comparison beyond the United States, which is the only country that approaches our own in the conditions referred to.

Next to cotton, the greatest of our textile industries is that of

* This appears to be borne out by the fact that between 1860 and 1879, the export of cotton manufactures from the United States only increased by half-a-million dollars (from 11 million to 11½ million dollars), whereas in England the increase of exports of cotton in the same time was over 60 million dollars.

wool and worsted. In this industry, however, the comparison is not so easy as in that of cotton, on account of the greater variety of appliances used and of products obtained. What with carding machines, broad and narrow looms, hand looms, Brussels power looms, ingrain power looms, and knitting and sewing machines, it is difficult to form a reliable computation of the qualities of the workers apart from their mechanical aids. But basing an estimate on the number of spindles alone, the results obtained for three of the leading countries are as under :—

Country.	Number of Operatives.	Number of Spindles.	Number of Spindles to each Worker.
United Kingdom	265,269	6,408,695	24
France	110,904	3,037,837	28
United States	86,504	1,756,746	20

The figures show, as far as they go, that France has some superiority over both our own country and the United States, and when we divide the total number of workers into the total number of looms of all kinds, a corroborative result comes out, viz. :—

	Number of Operatives.	Number of Looms.	Number of Looms to each Worker.
United Kingdom	265,269	143,337	0·5
France	110,904	78,676	0·7
United States	86,504	35,625	0·4

It will be obvious that if the proportion of spindles and looms not at work in the United Kingdom was greater than in either of the other countries, the result would be affected to the extent of such difference.

With reference to the silk industry, the returns of the different countries as to the number of hands employed and the number of spindles and looms in existence, are as exact and as full as any returns of the kind can reasonably be expected to be. But the conditions of the industry, in reference to the methods of working, the machinery employed, and the products turned out, vary so much, as between one country and another, that a fair estimation of the comparative efficiency of the workers is rendered next to impossible. For example, in the United Kingdom, according to the latest returns, there were 24 spindles and 0·3 power looms per person employed in the silk manufacture, whereas in France there were 4 spindles and 1½ looms per person employed. Again, the returns for this country do not show that any hand looms were

employed, whereas in France, out of 74,000 looms, 61,000 were hand looms. It may here be noted that the silk trade is declining in England. It employed 48,000 hands in 1870, and only about 41,000 in 1878.

Let us now apply the figures that the official returns of mineral productions issued by the leading countries of the world place at our command, to the consideration of the comparative results of labour in the only two departments of mining that admit of such a comparison in any degree whatever, namely, coal and ironstone.

With respect to the latter, I have compiled a table from the Government returns of our own and other countries, showing, by a division of the total number of hands employed into the total production of iron ore, the average annual output per person employed in different countries, which I herewith present:—

TABLE II.—*Total Number of Miners Employed in the Ironstone Mines of different Countries, with the Total Production of Iron Ore, and the Average Annual Output per Miner in each Country.*

	Year.	Number of Miners in Iron Mines.	Total Production of Iron Ore.	Average Annual Output per Miner.
			Tons.	Tons.
England	1881	26,110	14,591,000	559
Scotland	'81	10,473	2,595,000	248
Ireland	'81	504	260,000	516
United Kingdom	1881	37,087	17,446,000	470
Germany	1882	38,783	8,268,000	213
United States	'80	31,412	7,162,000	228
France	'81	8,623	8,032,000	352
Austria	'80	4,414	628,000	142
Luxembourg.....	'81	3,423	2,161,000	631
Spain.....	'82	14,795	3,565,000	240

On the face of them, the foregoing figures prove that Luxembourg has the best individual result to show among the iron producing countries of the world, followed, at a considerable distance, by England, and at a much greater distance by France, Spain, and the United States. But to understand aright the foregoing table, it would almost be necessary to describe all the conditions under which iron ore is found and worked in the different countries enumerated. No two countries are quite alike in the character of their iron ore resources. In some countries the ore is found in thin and uncertain beds; in others in very thick and regularly defined horizontal strata; in others again, in veins or pockets which are liable every now and again to be disturbed by

throws or faults, and thus become lost, though admitting of a very large average production while they are at their best. Some mines, moreover, are worked by a shaft, others by a gallery or drift and others, again, like those of Bilbao and the Styrian Ezberg, by open workings. All these considerations, as well as the comparative hardness or softness of the ore, and the character of the machinery employed, should be taken into account in attempting to form any estimate of the comparative efficiency of the labour employed on the basis of the average output.

The difficulties and discrepancies to which I have called attention in discussing the conditions under which iron ores are obtained apply, *mutatis mutandis*, to the working of coal, so that there would be a very great liability to error in any attempt to judge of the comparative efficiency of the labour employed with only the average output per man as our basis of computation. The reason why the coal of one district is relatively cheaper or dearer than that of others is not alone because of variations in the rates of wages, but also because in some districts the coal is found under circumstances which render a large individual output a physical impossibility; and in proof of this it is only necessary to name such extreme variations as are represented in our own country by the so-called 10-yard coal of South Staffordshire on the one hand, and the 2-foot steam coal of Northumberland on the other. With these reservations, however, the following table, which I have compiled in every instance from the official statistics of the countries dealt with, may be said to have both a positive and a negative importance as showing:—

(1.) The average output of coal per person employed in each of the great industrial nations of the world.

(2.) The extent to which each separate nation is at a disadvantage or otherwise compared with all the others in respect of its resources for the production of coal, as exhibited by the average output per miner employed.

TABLE III.—*Total Number of Persons Employed in the Production of Coal in Different Countries, with Aggregate Quantities Produced, and Average Annual Output per Person Employed.*

Country.	Number of Persons Employed in and about Coal Mines.	Aggregate Output of Coal.	Average Annual Output per Person Employed.
		Tons.	Tons.
England and Wales	381,763	133,233,000	349
Scotland	53,741	20,823,000	387
Ireland	844	127,585	151
United Kingdom	436,352	154,184,000	353

TABLE III.—*Persons Employed in the Production of Coal—Contd.*

Country.	Number of Persons Employed in and about Coal Mines.	Aggregate Output of Coal.	Average Annual Output per Person Employed.
		Tons.	Tons.
United States ..... { bituminous	100,116	37,400,000	374
{ anthracite	70,748	25,550,000	361
Germany*	186,335	48,688,000	261
Austria ..... brown coal {	35,990	5,378,604	149
	27,165	7,905,000	291
Italy	—	—	—
France	106,410	19,765,983	186
Belgium (Liège)	23,456	3,823,000	163
India	3,763	—	—
Nova Scotia	3,455	1,124,000	325
Victoria	—	—	—
New South Wales	4,857	1,485,000	306

* In Germany, and to a large extent also in France, a considerable staff is employed about the mines in washing the coal, which does not apply, at any rate not to anything like the same extent, in other countries. Were these workmen left out of the account, the average output would, of course, be higher.

It is quite clear from these figures that the United States leads the world with regard to the average productiveness of its coal mines, but Great Britain makes such a good second that it has little need to fear or be ashamed, and especially when its position is contrasted with the average of the other countries enumerated.

I have tried to establish a comparison of the work done in the shipbuilding yards of the United States and the United Kingdom respectively, based upon the amount of new tonnage turned out, and relatively to the number of men employed; but I have found the materials available for such a purpose so unreliable and wanting in correspondence, that I have been compelled to abandon the attempt. As an example, the total tonnage of the new vessels built in the United States is returned in the Census report for 1880 at 498,878 tons, whereas in the "Tables showing the Progress of British Merchant Shipping," issued by our Board of Trade, the figures are stated at 157,000 tons. Again, the number of men employed in the shipbuilding trade of the United Kingdom is returned in our Census reports for 1881 at 72,000, for an aggregate production of 608,000 tons of shipping, whereas the total number of hands employed in the United States' shipbuilding trade to produce 498,000 tons of shipping is only returned at 21,345. Obviously, in some important particulars, these figures do not mean one and the same thing.

It would be interesting if this comparison of the results of

labour in different occupations could be extended to agriculture, but the difficulties in the way of such a comparison are too serious to allow of its being usefully made. Not only would the total operative population, and each class thereof in each country have to be considered with reference to the area under cultivation, and the extent and value of the crops produced, but the character of the soil; the extent to which implements take the place of hand labour, and the comparative efficiency of those implements; the relative proportions of cereals to other crops and to cattle-breeding; the variableness of the climate, and many other factors difficult or impossible of ascertainment must come into the account before it could be deemed fit for audit.

With reference to the quantity of work capable of being produced by workmen of different nationalities under conditions as far as possible similar and parallel in every respect, the best information that I have found is that communicated to the Institution of Civil Engineers a few months ago by Mr. Charles O. Budge, as the results of his own experience in the execution of engineering contracts in different countries.

In these tables the labour dealt with was :—

- (1.) Earthwork.
- (2.) Ordinary bricklaying.
- (3.) Hammer-squared rubble (dressing and setting only).
- (4.) Painting on new work.

The results are herewith tabulated :—

I.—EARTHWORK.

Side cutting excavated and removed to embankment; the nature of the soil, the lift, and the lead, being approximately the same in each case.

	Amount of Work Done in a Given Time, Average English Quantity being Unity.	Cost of Unit of Work (Labour only), English Average being Unity.
Englishmen	1'00	1'00
Frenchman, Belgians, Germans	0'75 to 0'90	0'90 to 1'00
Southern Europeans	0'60 „ 0'85	0'60 „ 0'80
Hottentot half-breeds	0'50 „ 0'80	0'90 „ 1'25
Kaffirs, Zulus, &c.	0'40 „ 0'70	0'80 „ 1'00
Stronger Indian races	0'40 „ 0'70	0'25 „ 0'60
Inferior „	0'25 „ 0'40	0'20 „ 0'50

II.—IN ORDINARY BRICKLAYING.

	The Amount of Work Done in a Given Time, Average English Quantity being Unity.	Cost of Unit of Work (Skilled Labour only), English Average being Unity.
Englishmen	1'00	1'00
Frenchmen, Germans, Dutchmen, &c.	0'80 to 1'00	0'80 to 1'00
Natives of India (best class)	0'40 „ 0'50	0'50 „ 0'65
„ (inferior)	0'30 „ 0'40	0'43 „ 0'60

III.—HAMMER SQUARED RUBBLE (DRESSING AND SETTING ONLY).

Englishmen	1'00	1'00
Frenchmen, Germans, &c.	0'75 to 0'90	0'90 to 1'00
Southern Europeans	0'55 „ 0'70	0'70 „ 0'80
Natives of India (best class)	0'40 „ 0'60	0'65 „ 0'80
„ (inferior)	0'33 „ 0'50	0'60 „ 0'80

IV.—PAINTING ON NEW WORK.

Englishmen	1'00	1'00
Natives of India	0'40 to 0'60	0'60 to 0'80

It is not necessary to offer any comments on the foregoing figures, which show clearly the comparative capacity of workmen in different countries for doing work that is so greatly dependent on strength and energy. With reference to the cost of such work, Mr. Budge disputes the late Mr. Brassey's conclusion that difference of wages does not materially affect the price of work, contending that if Mr. Brassey "meant that wages generally "adjust themselves to the ability of the workmen his statement was "certainly open to question," and setting forth, with reference to "that class of work in which manual labour is the chief ingredient," that the result arrived at is, "in general this, that the lower the "wage, the lower is the price of the work, though of course not in "the same proportion."

III.—*Earnings of the Working Classes in Different Countries.*

In any attempt to estimate the average and aggregate earnings of the working classes in different countries, we are necessarily undertaking a work which no amount of investigation and care can render otherwise than only approximately near the truth. It is, to begin with, extremely difficult to obtain statistics of wages that will apply to precisely the same kind and character of work. But even if this were otherwise, it is practically impossible to arrive at a correct average for each class of workers in any particular

country, owing to the great variations in the wages paid in the different districts or provinces of that country. In our own land, there is often found a difference of 30 to 50 per cent. in the wages paid in the same occupation, as between one district and another. In America, the wages paid in the Eastern and Northern take a much higher range than those paid in the Western and Southern States. In France, as will be found on referring to a table printed in the appendix, the average wages paid in a certain number of selected leading occupations is in many cases more than double in Paris what it is in the provinces. In Germany, again, the wages paid in the provinces of Rhineland and Westphalia, where industries are carried on in competition with agriculture, are much higher, on the average, than in the South, where an opposite condition of things is the rule. There are, moreover, variations, more or less considerable in amount, between the wages paid in different districts of the same county or province, dependent mainly on local conditions.

Having disposed of these rather obvious considerations, we are called upon to face scarcely less formidable difficulties in regard to the various and often conflicting sources whence returns of the earnings of the working classes are to be obtained. In this matter England is certainly not in advance of some other nations. We are, indeed, very far from being as forward as we should be relatively to our unique position as a manufacturing country. In America there are bureaux of labour established in certain States, whose business it is to collect and collate the rates of wages paid in different occupations at more or less frequent intervals; and I cannot, in passing, refrain from paying a well-merited compliment to the Massachusetts Bureau, which annually supplies the Government and people of that State with a valuable collection of data as to earnings in different industries, and the relative cost of living both at home and abroad, which our own Government would do well to imitate.* In France, again, it is the function of the Minister of Commerce to collect annually, and publish in the "*Annuaire Statistique*," returns showing the average rates of wages paid both in Paris and in the different provinces or departments. In Germany there exist several organisations whose business it is, among other things, to collect and publish returns of wages, which are usually got out with great care and fulness, although their value is impaired by the limited area, geographical or industrial, over which they extend. In the United Kingdom the "*Miscellaneous Statistics*" issued at three-yearly intervals† by the Board of Trade, usually publishes

* I am glad to find that in this view I am supported by Sir Thomas Brassey, who in his "*Work and Wages*" enunciates practically the same opinion.

† The latest issue gives wages returns for 1880 only.

statements showing the rates of wages paid in the chief industries followed in different districts, but in the latest issue of that work, although the returns are fuller than usual, they only apply to about forty trades or industries, which is a very small proportion of the whole number.

In endeavouring to compare the average rates of wages in different countries, it is obviously of the first importance to take care that the occupations selected for comparison are such as are liable to the least possible amount of variation in the conditions under which they are carried on. Such are agricultural labour, the building trades, the textile industries, and, in a less degree, the industries of mining and metallurgy.

Keeping these considerations before me, I have compiled a table which is intended to show the average rates of wages paid in the four leading industrial countries of the world in 1880. There is no special reason why that year should be selected, except that no official returns of the wages paid in certain occupations are available for a later period in the case of both France and the United Kingdom. It may also be remarked of 1880 that it was a good year to adopt as a standard, trade generally being then in a fairly active, although by no means inflated condition, throughout the world.

The figures which have been compiled for the table (Appendix I*) show that for fifteen of the leading occupations followed in each country, and embracing in the United Kingdom $4\frac{1}{4}$ million male operatives out of a total of 6 millions engaged in agriculture and industry, being 70 per cent. of the whole, and in the United States nearly 5 millions out of a total of $7\frac{1}{6}$ millions similarly engaged, or 69 per cent. of the whole working population, the average weekly wages were as under :—†

	s.	d.
United States (Massachusetts).....	55	2
„ Kingdom (Lancashire).....	30	5
Germany (Westphalia)	21	8
France	18	10

giving to the United States a position superior to that of Great Britain by 84 per cent., and better than that of Germany and France by 162 per cent. and 205 per cent. respectively; while Great Britain comes out as 42 per cent. better than Germany, and 58 per cent. superior to France.

* The rates of wages given in this table are obtained :—1. *For the United Kingdom*—from Mr. Lord's tables for 1880, issued by the Manchester Chamber of Commerce. 2. *For the United States*—from the reports of the Massachusetts Bureau of Statistics. 3. *For Germany*—from returns obtained direct from Westphalian works. 4. *For France*—from the *Annuaire Statistique*.

† It will be understood that the figures in every case apply to adult male labour.

It is not without interest to compare these figures with those that relate to the wages paid in our Colonial Empire. I have accordingly compiled from the official statistics of wages issued by the various Colonial Governments a table (Appendix II) which shows the average wages paid in each of the four chief Australasian Colonies at about the same period as that to which the figures already quoted apply. This statement shows that in fifteen leading occupations, approximately similar in kind to those given in the preceding table, the average wages paid was 53s. 7d. per week, being 3·6 per cent. under the average of Massachusetts, but 77 per cent. above that of the United Kingdom, 157 per cent. above that of Germany, and 194 per cent. above that of France.

In Canada, according to statistics issued by the Government, the average rate of wages paid in the building trades in 1882 was about 46s. per week, being about 7s. 7d. per week under the average of the Australasian Colonies, but still considerably higher than the average of the same trades in European countries.

To extend the comparison to other countries would greatly amplify this already lengthy paper, and throw very little useful light upon the English labour question, which is mainly affected, so far as it is affected at all by external influences, by the rates of wages paid in the countries now dealt with.

Generally, it may be remarked that, in the East and South of Europe, wages usually take a much lower range, Italy, Austria, and Hungary being under the averages of both France and Germany, and Russia and Turkey showing a lower standard still.

It is the custom of some persons to speak of Russia as one of the countries of the future, and so far as low wages can assist a country in cheap production, it certainly does enjoy very great advantages. I have obtained a statement of the wages paid in eleven leading industries in St. Petersburg in 1880 (Appendix III), which shows a maximum wage of 2s. 5d., and a minimum of 10d. per day for labour that may generally be described as skilled.*

I now propose to institute a fuller comparison of the wages

* With respect to Russian workmen, an esteemed correspondent in St. Petersburg writes to me as follows:—

“The pay which workmen receive in St. Petersburg would always allow him something for a rainy day, if it were not for the habit they have of spending all the money they earn in vodka. There is, however, much to be excused on this ground, as the Russian workman has no cheap theatres, Sunday schools, or libraries, and as most of them cannot read, books are useless to them. In Petersburg most of the working men come to look for employment during the winter. In spring again most of them return to their own villages, as in this country every peasant has a piece of land which he is obliged to cultivate. Indeed, throughout Russia, only workmen receiving the highest rate of pay can be regarded as permanent *employés*, as only such can arrange to send a part of their earnings to their native villages to pay their share of the taxes and hire labour (if that should be needed) to cultivate their few acres of land.”

paid in the two leading industrial nations of the world—the United Kingdom and the United States—with the view of endeavouring to ascertain both the average and the aggregate annual earnings of the working population in each country.

The materials for such a comparison exist in the United States in much greater abundance than in our own country. The aggregate wages paid in each industry are collected every ten years for the United States Census Reports, which, I may be allowed to remark, by the way, are got up with a fulness and care that challenge favourable comparison with those of the English Census Commissioners.

From the report of the Tenth Census of the United States I have compiled two statements—the first (Table IVA) showing the average earnings in each principal class of occupations in the Census year 1880, and the second (Appendix IV) showing the aggregate and average earnings in each of the principal manufacturing industries of that country in the same year.

With reference to the table forming Appendix IV it should be remarked that the wage-earners, the aggregate and average of whose annual earnings are there tabulated, represent a total of 2,322,980, or 60 per cent. of the total number engaged in manufacturing and mechanical industries in the United States. Of that number, however, only 396,280, or 17 per cent., are females and young children, and if we eliminate the tailoring and cotton industries from the group, the proportion of females and young children would be reduced to 193,000, or only a little over 8 per cent. of the whole. It will be observed also, as might be expected, that the average wages paid generally take the lowest range in those industries that embrace the largest number of females, the only notable exceptions to this rule being sawyers and brick and tile makers. The highest average wages paid in the United States are received by shipbuilders, among whom there are only seven operatives that are not males above 16 years; and the next highest wages appear to be paid to printers, who, however, number, in a total of 58,280, no fewer than 12,400 women and young children. It will further be observed that while the average wages received per *employé* over the Census year ranged from 42*l.* 5*s.* 10*d.* in the case of brick and tile makers, to 124*l.* 3*s.* 4*d.* in the case of shipbuilders, the average over the whole twenty-five selected occupations was about 77*l.* 10*s.* per annum, which is just 35*l.* 9*s.* above the figure which is computed (Appendix V) as the average annual earnings of the working classes in the United Kingdom, and 5*l.* 10*s.* above the average of *all persons of both sexes* employed in the manufacturing industry of the United States as set forth in Table IVA, presented herewith—

TABLE IV A.—*Total Number of Hands Employed in Different Occupations in the United States, with Total Amount Paid in Wages, and Average Annual Earnings per Person Employed.*

Occupation.	Total Number of Persons Engaged. [000's omitted.]	Total Amount Paid in Wages in Census Year. [000's omitted.]	Average Annual Earnings per Person Engaged.
		\$	\$ £
Agricultural labourers	3,332,	833,000,	250 = 52
Domestic and personal service....	3,386,	1,015,800,	300 = 63
Manufacturing industry	2,732,	947,953,	347 = 72
Mining (non-precious metals)	220,	71,992,	327 = 68
Railways	418,	195,350,	467 = 97
Steamships	56,	25,982,	464 = 97
Totals and averages	10,144,	3,090,077,	305 = 64

The total earnings of the 10 millions of so-called wage-receiving classes in the United States would appear from these figures to be about 643,315,000*l.*, which is 225,281,000*l.* more than the amount estimated by Professor Levi as the earnings of about 11 millions of wage-earners in the United Kingdom thirteen years before.* It is an obvious comment on these figures that if the same proportion of the whole working population that is employed in the manufacturing industry of the United Kingdom was so employed in the United States—23 per cent. instead of only 7·6 per cent.—both the average and the aggregate wages paid in the latter country would be much higher.

In framing this table, the earnings of the population employed as agricultural labourers, &c., have been estimated from returns of the wages paid in different States, as set forth in consular and other reports. The wages earned by those engaged in domestic and personal service have been estimated in the same manner, the cost of board being reckoned as part of the wages in the case of domestic servants. With reference to the other four classes of occupations in the table, the total amount of wages paid has been ascertained by the enumerators, and is specifically set forth in the Census Report.†

It will be noted, moreover, that the persons employed in professional and commercial occupations are eliminated, as are also all farmers and planters owning their own land, or tilling it as responsible tenants. It has not been possible to separate the owners from the operatives engaged in manufacturing and

* The above table does not, however, embrace any who are engaged in what is described as commerce—including an army of nearly 400,000 clerks—numbering altogether 1,336,000, and many of whom were included in Professor Levi's figures.

† In compiling the Census of 1870, the United States Government collected statistics of the wages actually paid in agricultural work, but no such figures appear in the Census Report for 1880—presumably by reason of the difficulty experienced in procuring them.

mechanical industries, so that, in dividing the numbers engaged into the gross amount of wages paid, a certain unascertained proportion of employing and non-wage-receiving persons has necessarily been included. The same remark will apply to those engaged in mining and transportation; but while the average of wages earned per individual would take a higher range if employers, whose earnings are otherwise accounted for,* could be eliminated, this circumstance does not disturb the aggregate amount paid *as wages*.

With the average wages paid in the United States as one factor, and the total numbers employed in the different classes of occupations in the United Kingdom as another, I have constructed the following tabular statement:—

TABLE VA.—*Total Amount of Wages that would be Received by the Wage-Earning Classes of the United Kingdom, in 1881, on the Basis of the Average Wages ascertained to have been Paid to the same Classes in the United States during the Census Year 1880.†*

Class of Occupation.	Numbers Employed in United Kingdom in 1881.	Average Wages Paid in United States per Employé, in 1880.	Amount of Wages that would be Paid to numbers Engaged in United Kingdom on United States Averages.
		£	£
Agricultural labourers, &c.	1,443,628	52	75,068,656
Domestic and personal services..	2,406,536	63	151,611,768
Manufacturing and mechanical } industry	7,463,016	72	537,337,152
Transportation	789,398	97	76,571,606
Miners.....	511,698	68	34,795,464
Totals	12,614,276	Average 70	876,144,646

This statement brings out several important points of comparison, the more obvious being:—

1. That in the five classes of occupations tabulated, there were 2,470,000 more wage-earners in the United Kingdom in 1881 than in the United States in 1880, notwithstanding that the latter country had an aggregate population exceeding that of our own by nearly 13 millions.

2. That this excess would give the wage-earning population of the United Kingdom over 233 millions more as earnings than the

* When I say that “the earnings of employers are otherwise accounted for,” I mean that it is possible approximately to estimate them from the Census Reports, by subtracting the wages paid and the value of the raw materials used in each industry from the gross product—all three factors being given.

† As in Table III, so in this, the commercial classes, including clerks, have been excluded from consideration.

amount received in the United States if our working classes were paid at the same rate as those of that country.

Probably some will object that the foregoing statement is more curious than useful; but I have compiled it mainly for the purpose of comparison with another table (Appendix V), in which I have set forth the total number of persons engaged in each occupation employing more than 6,000 hands in the United Kingdom, distinguishing males from females, and their average weekly and total annual earnings. It would be absurd to claim for this or any other estimate of the average or total earnings of the working classes, or even any considerable section of them, more than a rough approximation to the actual facts. The most that can be done is to endeavour to ascertain the average rate of wages ruling for each class of *employés* in one or two leading districts, and to build thereon a general average, whence the total earnings may be deduced. This I have carefully endeavoured to do, selecting my returns of average wages in particular industries chiefly from the figures published in the "Miscellaneous Statistics of the United Kingdom," supplemented, where necessary, by returns obtained on direct application to manufacturers, personal knowledge, and otherwise.

The statement in question excludes from separate enumeration an additional number of 1,570,000 who are employed in a multitude of minor industries and occupations, and, for obvious reasons, it takes no account of the professional class, whose average earnings it would be quite impossible to estimate.

It will be observed that of a total of about 14,300,000 persons employed in the United Kingdom in so-called productive (including commercial) occupations, 12,677,000 are embraced in Appendix V. Assuming our calculations as to their average earnings to be approximately near the mark, these 12,677,000 persons would earn upwards of 535 millions sterling a year. We have seen that, in addition to this number, there are more than a million and a half, after deducting the professional classes, properly so-called, who are more or less in receipt of wages. If we estimate that this remainder will earn approximately the same average wages as those employed in the 181 occupations we have tabulated in Appendix V, there would be a further 66 millions to add to the sum total of earnings, bringing it up to over *six hundred millions sterling*.

This sum, it will be noticed, does not include the earnings of the army, navy, or ordinary seamen. The former are scarcely wage-receiving classes, in the ordinary sense of that word, while the average wages of the latter are very difficult of estimation.

From the *six hundred millions* which we have reached as the earnings of the working classes of this country in 1880, there falls to be deducted a certain unknown and unknowable proportion in

respect of the employers who are included in the figures given. This has been inevitable in consequence of the failure of the Census to distinguish operatives from employers.* As to what that proportion should be, probably no two of us will quite agree. Professor Leone Levi, in his calculation of the earnings of the working classes made in 1867, put it at $2\frac{1}{2}$ per cent.† For my own part, I should be disposed, as I have already indicated, to put it at a higher figure than this; but adopting Mr. Levi's deduction for the time being, we have still more than *five hundred and eighty million* pounds sterling as the annual wages bill of the English working classes.

Let us now compare these figures with those that Mr. Leone Levi found to represent the condition of things existing in 1867. Dealing then with 11 millions of workers—of whom 300,000 were professional, including the army, navy, and police—that gentleman found the *average* annual wages paid over the whole to be 38*l.*, against the average of 42*l.* per head shown in the returns I have ventured to bring before you. Hence it appears that if both computations can be accepted as approximately true, the average increase in the interval has been 4*l.* per head or about 10 per cent.

Again, Mr. Leone Levi found the aggregate earnings of the eleven million hands embraced in his calculation to be 418 millions. In the statement that forms the basis of my calculations, the total number dealt with is over 14 millions, and their aggregate earnings, after the same deduction for masters as that made by Mr. Levi, is more than 580 millions, being an *increase of one hundred and sixty-two millions*. If the earnings of the army and navy and merchant seamen were included in this, as in Mr. Levi's computation, the difference would, of course, be much more.

A reference to the preceding table (IV*A*) will show that the average wages paid in the United States in 1880, over more than 10 million persons, was 64*l.* per annum, against the average of 42*l.* which we have computed for the United Kingdom. According to these figures, therefore, the average wages paid to all classes of wage-earners in the United States may be taken roughly at 22*l.* a year, or 52 per cent. more than in the United Kingdom.

IV.—*Recent Increase of Wages Earned in Different Countries.*

That there has been a very great increase in the average earnings of the working classes within the last quarter of a century is a fact sufficiently well known to the Fellows of this Society. Our

* This distinction is made in the census returns of France, Germany, Austria, &c., but not in the United States census.

† "Wages and Earnings of the Working Classes," p. 16.

late President, in one of the most able papers* that we have ever had, made it so clear that "he who runs may read." It is not my intention to follow Mr. Giffen over the ground that he has already so well covered, but I would like to show briefly how other countries compare with our own in the improvement of the condition of the working classes.

Since the year 1850, there has been a more or less considerable rise of wages throughout the whole civilised world—a rise exceeding that of any previous period of equal duration, both in range and volume. The causes of this fact are not far to seek. They are mainly to be found:—

1. In the facilities for the transaction of business and the exchange of commodities supplied by the development of the railway system, and the growth and improvements that have marked the progress of steam shipping.

2. In the general introduction of labour-saving machinery in all industries of national importance, whereby a much greater production has been rendered possible with the same amount of labour in a given period of time.

3. In the enormous increase in the imports and exports of all the leading countries of the world, involving, as a necessary corollary, a better demand for the specialities of each country on the part of all other countries.

4. In the discoveries of gold in Australia and California, whereby a greater abundance of the precious metals has been secured to all civilised nations.

The extent of the advance of wages previous to 1850 may be measured by the circumstances of agricultural labour, as ascertained by Sir James Caird. In 1770 the average wages of that class of labour in England amounted to 7s. 3d. per week; in 1850 they had advanced to 9s. 7d. per week; and in 1878 they were not less than 14s. per week. Hence, the increase that took place during the eighty years preceding 1850 was only 2s. 4d., or 32 per cent., whereas in the next twenty-eight years the amount of increase was 4s. 5d., or 46 per cent. In Cleveland, and in some parts of Lancashire and Cheshire, agricultural labourers have recently been commanding as much as 17s. per week.†

There can be little doubt, I think, that the price at which ordinary agricultural labour can be purchased in the open market,

* "On the Progress of the Working Classes during the Last Half-Century." By Mr. Giffen. *Statistical Journal*, vol. xvi, p. 593.

† In the Report of the Royal Commission on Agriculture, a table is given showing the wages paid on a large estate in Northumberland in each year between 1831 and 1880. In the former year it was 11s., and in the latter 18s. per week, both sums being in addition to cottage rent free, 60 to 80 stones of potatoes, and 2 bushels of wheat yearly.

is largely a determinant, in a rough and ready sort of fashion, of the cost of other labour. Whenever the wages paid to miners, artisans, &c., show an increase beyond a certain percentage over the wages paid in agriculture, labour is so far attracted from the latter to the former as to readjust the balance which temporary fluctuations of supply and demand had disturbed. Agricultural labour necessarily takes, and always will take, a lower range than the more or less skilled labour employed in industry. It is more easily acquired, involves no apprenticeship or technical training, is more constant, and less subject to the vicissitudes of good and bad trade, is less exposed to risk and danger, and, being pursued in the open air, is more agreeable and healthy. But once the wages paid in industry have passed beyond the point at which they meet the special conditions differentiating manufactures from agriculture, the exceptional supply of labour so created is furnished chiefly from the ranks of the agricultural population, as have been the enormous accretions within recent years to the railway, mining, and other great labour-employing interests.† It therefore becomes important to consider the earnings of agricultural labour in different countries, and the extent to which they have increased in recent years. With these introductory remarks I proceed to give the following figures:—

TABLE VIA.—*Wages Paid to Agricultural Labourers at different Periods.*

Country.	Average Weekly Wages Paid in the Years			Percentage Increase, 1880 on 1850.
	1850.	1870.	1880.	
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	
England (Cheshire)	9 7	15 —	17 6	66
France (general average)	9 —	12 6	14 —	55½
Germany (Hesse)	8 6	10 6	12 6	50
United States (Massachusetts)*.....	16 —	20 —	25 —	56½

* With board.

Showing that in the United Kingdom the percentage increase has been larger than in any other of the four chief industrial countries

† Between 1861 and 1881 the numbers employed in certain industrial occupations, increased in England and Wales as under:—

	1871.	1881.
Coal mining	271,342	511,000
Shipbuilding	47,400	72,000
Railway labour	180,000	259,800

of the world, although the amount has been slightly greater in the case of Massachusetts.* In every case except that of France the figures are subject to the obvious criticism that they apply only to particular districts, which may be very far from representing the average of the country; but it is an equally obvious reply that wages could scarcely have advanced so materially in one locality without affecting the cost of the same class of labour, although not of course necessarily in an equal degree, in other districts.

It is extremely difficult, even in so apparently simple a matter as agricultural labour, to get exactly parallel conditions. In France, for example, a certain proportion of the agricultural population follows some other occupation whereby they are enabled to increase their earnings to an extent estimated by Lord Brabazon at 7*l.* to 8*l.* a-year.† Again, in the United States the wages of agricultural labour are stated to vary, *without board*, from 3*s.* per day in Rhode Island to 10*s.* per day in Connecticut.‡ In America, however, the rule is to board and lodge the agricultural labourer, and where this is not done an allowance of about 2*s.* per day is generally made as an equivalent.

One of the most valuable records that we possess of the range of wages in different industries since 1850 is that furnished by the compilation which Mr. Lord prepared last year for the Manchester Chamber of Commerce. Mr. Lord's figures showed that in ten different industries (including four departments of the cotton trade) there had been a percentage increase in 1883 on the wages earned in 1850 of 39·18 per cent., the increase ranging from 10·30 per cent. in the case of mechanical engineering to 74·72 per cent. in the case of medium cotton spinning and weaving. Only in one of the industries dealt with—that of iron and steel—had there been a decrease in the later as compared with the earlier period. It is to be remarked, that while Mr. Lord's figures do not adequately represent the iron trade proper, of which Manchester is scarcely a centre, they may be taken as faithfully presenting the actual condition of things in respect of the other industries dealt with, which are all more or less largely carried on in that district. The *average increase* of wages paid in the following leading industries between 1850 and 1883 was found to be as under:—

* It should be pointed out—although the fact is perhaps sufficiently obvious—that in Massachusetts the wages paid in agriculture take a higher range than they do in the West and South, where they are affected by negro labour.

† “Reports respecting the Condition of the Industrial Classes, &c., in Foreign Countries.”

‡ Ibid.

TABLE VII.—*Average Increase of Wages paid in Manchester District between 1850 and 1883.*

	Average Increase of Wages.	Total Number Employed in United Kingdom.
Cotton trade	40'70	523,754
Bleaching, &c.	50'00	39,691
Calico printing	50'00	39,318
Fitters, turners, &c.	10'30	78,828
Smiths	24'00	147,456
Carpenters and joiners ...	50'00	295,958
Bricklayers	46'00	129,966
Masons	34'00	131,476
Plasterers	31'00	34,662
Labourers	32'00	771,501
Mechanics	77'00	36,481
Average increase	40'00	2,220,091

If it were safe to assume (which is very doubtful) that the above increase applied to the country generally, as well as to the Manchester district, it would be found to cover 30 per cent. of our whole industrial population.

The foregoing trades have not been selected with any pre-conceived idea of showing a desired result, but simply because they are those which appear in Mr. Lord's returns, which I have adopted in preference to many others that might have been selected. It is, however, not a little remarkable that they show an average increase of wages that almost exactly corresponds with that brought out by a comparison of the total amount paid in wages in the industries of the United States for almost the same dates. For reasons which I have already explained, the returns of the wages paid in the United States are generally more to be depended on than those ascertained or computed for other countries, and hence I have some confidence in presenting the following tabular statement showing the total number of persons employed in the manufacturing industries of the United States, with their total and average annual earnings, in each of the Census years 1850, 1860, 1870, and 1880 :—

Census Year.	Average Number of Persons Employed. [000's omitted.]	Total Amount Paid in Wages during Year. [000's omitted.]	Average Annual Wages Paid per Person Employed.
1850.....	956,	\$ 236,755,	\$ 248
'60.....	1,310,	378,878,	289
'70.....	2,050,	775,584,	378
'80.....	2,731,	947,953,	347

From which it will be observed that between 1850 and 1880 the *average wages* paid in the United States increased by 39·9 per cent., as against an average increase of 40 per cent. shown in the eleven industries embraced in Mr. Lord's tables.

This increase, however, as might be expected, has been very far from uniform. The industries in which the greatest rise or fall has occurred are set forth in Appendix VI, whence it appears that in the State of Massachusetts, between 1860 and 1883,* the greatest increase (79 per cent.) took place among stone workers; the next greatest (48 per cent.) among machine makers; and the next (39 per cent.) among flax and jute workers. In the cotton, furniture, paper, dyeing and bleaching, and shipbuilding industries, the wages paid were lower in 1883 than in 1860.

Some of our ardent free-trade friends may perhaps be disposed to regard these facts as a triumphant vindication of their economic theories. The complexion of the case is, however, somewhat changed when we examine the detailed figures relating to France, which appears to have made greater progress during the period under review than either this country or America. A valuable series of official statistics, published in the "*Annuaire Statistique de la France*," shows the average rates of wages paid in Paris and in the provinces in twenty-three leading industries during the years 1850 and 1880 respectively. I do not know how these averages were got by the French Government, but taking them for what they are worth, they show that in the interval referred to the mean advance in Paris was 53 per cent., and in the provinces 65 per cent. As these figures apply to 1,497,000 workmen out of a total of 1,554,000 ascertained to be occupied in industry by the French Census of 1876, it may be assumed I think, that they are of pretty general application.

I do not happen to possess, with respect to other countries, the same authoritative figures that I have just given you with reference to the improvement in wages in this country, the United States, and France. On consulting general returns in my possession, I find a very considerable advance of wages to have taken place in the north of Germany, and also, although to a less extent, in Belgium.

It is not without interest, in view of the rivalry that is so often heard of as threatened or successfully achieved by the latter country, to examine the rates of wages in the industries in which that rivalry is understood chiefly to obtain. The official reports to

* I am compelled to select the year 1860, because I have no reliable figures of a similar kind for 1850.

the Belgian Government show that the average rates of wages paid in Belgium in 1882 were :—

At blast furnaces.....	3'09 frs. per day.
In rolling mills	3'81 "
„ steel works	3'58 "
„ lead and zinc works	2'75 "
„ coal mines	3'09 "

thus giving an average of 2s. 6d. per day, or 15s. per week, for a total of 132,000 *employés*, which is a very considerable proportion of the total industrial population of Belgium.* In the United Kingdom the average wages paid in the same occupations will probably be 50 or 60 per cent. higher, and we have already seen that in the United States they are 92 per cent. higher.†

V.—*Female Labour.*

I now propose to invite you to consider some of the circumstances that determine both the efficiency and the earnings of the working classes in different countries. The industrial circumstances of the community, as distinguished from the individual, are more or less affected by :—

(1). The extent to which the labour of women and young children comes into competition with that of male adults.

(2). The proportions of the whole population engaged in productive, as distinguished from unproductive labour.

(3). The relative cheapness of the cost of living.

In order that the facts as to the first of these points may be fully before you, I have compiled a table (Appendix VIII) which shows the total number of women engaged in each of seven classes of occupations in the United Kingdom, the United States, France, Prussia, and Austria. The facts brought out by this table are summarised in the following statement, which shows the total numbers of both sexes employed in specified or productive occupations in each of the five countries dealt with, together with the total number of females, and the percentage of females to the total working population in the most recent Census years :—

Country.	Total Working Population.	Total Number of Females Employed.	Percentage of Females.
United Kingdom	15,107,000	4,573,443	30
France.....	16,550,000	5,089,000	31
United States.....	17,392,000	2,645,079	15
Prussia	11,006 000	2,937,000	26
Austria	11,394,000	4,363,000	38

* In this figure are included about 10,000 women and a considerable percentage of children under 16 years of age.

† The average wages paid to ironworkers and miners together in the United States in 1880 was 75*l.* per annum, against 39*l.* for Belgium.

It may be observed that evidence is afforded by these figures of the fact that the employment of women in competition with men tends to the lowering of wages, for we find that in France and Austria, the countries that employ the largest number of women, wages generally take a lower range than in the other countries tabulated, while in the United States, where wages are considerably higher than in any of the other four countries, the number of women labouring for their daily bread is proportionately small. In Great Britain, the relative percentage of females employed is exceptional, owing to the great magnitude of the textile trades.

VI.—*Juvenile Labour.*

The next table to which I invite your attention (Appendix IX) shows the number of children under 15 years of age employed in different industries in the United Kingdom and the United States. Relatively to the whole industrial population employed, the United States has a larger number of children at work than ourselves, the average percentage of juvenile *employés* being 6·6 per cent. of the whole working population in the former country, as compared with only 5·1 per cent. in this country. In Prussia, on the other hand, on account of the stringent laws that are enforced with respect to juvenile labour, it only represents 2·7 per cent. of the whole working population, the total number under 15 years of age being 299,000 in a working population of 11 millions.

VII.—*The Industrial Classes.*

Another point that is pertinent to the question we are discussing is that of the percentage number of the population of each country engaged in industrial, as distinguished from agricultural, domestic, and professional pursuits. The relative position occupied by the several leading countries of the world in this regard is shown in Appendix X, whence it appears that while 23·0 per cent. of the total population of England were engaged in manufacturing industries in 1880, the numbers so employed in other countries were :—

	Per Cent.
In the United States.....	7·6
„ Prussia	13·0
„ France	12·0
„ Belgium.....	17·2
„ Austro-Hungary ..	8·4
„ Italy	0·9
„ India	14·6
„ Canada	5·8

Francis II is said to have remarked to Napoleon that “the English are a nation of shopkeepers,” and that to secure for our-

selves the commerce of the world, we would not hesitate to set the continent in flames. These figures may be held to prove that we maintain the former, without needing to fulfil the latter, condition.

VIII.—*Unproductive Population.*

I come now to examine the proportions of the populations of different countries who are not in any way wage-earners. This large order is made up mainly of four classes, viz. : women, young children, pensioners, and persons receiving annuities, &c. I have not attempted to distinguish the numbers belonging to each of these several classes, but the total numbers of non-wage-earners relatively to the whole population of each country is set forth in Appendix XI.

Briefly stated, the figures embraced in this table show that the unproductive classes vary from 65 per cent. of the whole population in the United States, to 5 per cent. in the colony of Victoria. The United Kingdom, France, and Prussia, with 54 per cent., 56 per cent., and 59 per cent. respectively, come within 5 per cent. of each other; while in Austria only 31 per cent. of the population is returned as unproductive.*

IX.—*Distribution of Population according to Occupations in Different Countries.*

The last, but in some respects the most important, of the tables bearing on the subject of the occupations of the people, which I have to lay before you is a summary statement showing the distribution, in this regard, of the population of nine of the principal countries of the world (Appendix XII). To those who wish to obtain a knowledge of the industrial condition of those countries, I commend the study of this statement. In reference to its compilation, I would only remark that owing to the different systems adopted in the enumeration of occupations for Census purposes, it has involved a very great deal of labour. There is no class with respect to which so much difficulty is found in assigning their proper place in the Census reports as those who are described as in commerce or trade. In the Census of the United Kingdom the commercial class is divided into eleven different occupations, all of them, excepting only those who come under the elastic term "merchant," being easily recognisable; but in the United States' Census, in lieu of that general description, we have no fewer than thirty distinct descriptions of so-called traders, all or the majority of whom would figure in the English Census reports

* In the "productive classes" I have included both the professional and the domestic classes, because they are both wage-earners, although strictly speaking they do not produce wealth.

among the industrial class, to which, accordingly, for the sake of securing uniformity, I have relegated them. I have done the same with over 53,000 hucksters, and 19,000 boarding house keepers, who are doubtfully provided for in our Census among the industrial classes. Even, however, when we have taken the utmost pains to have the conditions of comparison strictly relevant and parallel to each other, the liability to error is such that the results formulated can only be accepted as approximate. For after all the transpositions possible have been made, there are still obvious discrepancies which it is impossible entirely to reconcile.

X.—*Comparative Cost of Living in Different Countries.*

The length to which this paper has already run is such as to render it impossible to consider as exhaustively as their importance deserves the differences that distinguish one country from another in regard to the purchasing power of money. And yet, if this point were not to be included, we should only present one view of the question, for obviously if the additional wages earned in one country by comparison with another are all absorbed in the greater cost of living, the gain is nil. Confining these remarks more especially to industrial as distinguished from agricultural countries, I have come to the conclusion that an examination of the statistics of the retail prices paid for commodities in different countries will show that there is not such a material difference, as between one country and another, as is commonly supposed, and that the tendency towards a further equalisation of prices is becoming increasingly apparent, for two obvious reasons, viz. :—

(1.) That countries which have an excess of agricultural and other produce of domestic consumption, tending to make prices rule very low, are enabled by exportation to level up to the European average.

(2.) That countries whose consumption of such commodities is in excess of their production, are enabled, by importations from countries differently circumstanced, to level down to the average, prices that would otherwise have a tendency to rule exceptionally high.

This is a law that will be found to operate more or less in all countries that do not artificially raise the cost of food products by imposing abnormally high duties ; and it applies to all articles of domestic consumption subject to international exchange. The breadstuffs of the United States are increasingly finding their way into other European countries besides our own, and the universal increase of both imports and exports in all progressive countries testifies to the operation of the law just enunciated.

It is, however, quite a different matter when the items of

clothing and house rent are considered; and as these are mainly made up of wages, both must rule highest where the highest wages prevail. The proportions of a working man's income required for his necessary expenditure, propounded some years ago as an economic law by Dr. Engel, of Berlin, allow an average of 16 per cent. for clothing and 12 per cent. for lodging out of an income of from 50*l.* to 55*l.* a-year. Hence, in a general way, only 28 per cent. of a working man's wages would go towards meeting these two items of outlay, leaving 72 per cent. as a remainder which, for reasons that have just been cited, are but little liable to variation as between one industrial country and another.*

The facts just stated receive a remarkable corroboration from certain statistics recently published as to the comparative cost of living in Great Britain and Massachusetts.† It is shown that on any basis of yearly expenditure the prices of articles entering into the cost of living in the year 1883 were, on the average, 17·29 per cent. higher in Massachusetts than in Great Britain; that of this figure 11·49 per cent. was due to higher rent, leaving 5·8 per cent. as indicative of the higher cost of living in Massachusetts, compared with Great Britain, as regards the remaining elements of expense.‡

Nothing would be easier than to burden this paper with many pages of figures designed to show the cost of provisions, &c., in different countries; but for what appear to me to be sufficient reasons I refrain from doing so. In the first place, I believe it to be impossible to institute a just comparison of this kind unless the *quality* of the commodities enumerated has been exactly ascertained, —which it cannot be—since we know that with some articles in everyday use, as, for example, that of tea, the retail price varies from 50 to 100 per cent. In the next place, it is quite an impossibility to furnish a figure that shall represent fairly the *average* price of any given commodity in our own or any other country, since we further know that as between one district and another the prices of the same commodities vary enormously. It may suffice to remark generally, that as the result of examining many tables of figures furnished by our own and other consular and diplomatic agents, I have come to the conclusion that the cost, as well as the standard, of living is approximately as much below that of our own country in France, Germany, and Belgium, as that of the United States is

* Dr. Engel assumes 62 per cent. of the whole income as necessary for subsistence, and apports the other 10 per cent. to fire and light, education, health, and recreation.

† “Report on the Statistics of Labour, 1883,” p. 469.

‡ It is claimed that in respect of the higher rent charged, a certain proportion of value was returned to the working classes in the form of better lodging.

above it; while in our Australasian colonies and in Canada the greater cheapness of provisions is counterbalanced, or nearly so, by the increased cost of house rent, clothing, and other items.

That there has, within recent years, been a tendency towards the cheapening of articles of every-day consumption in all countries is, I think, incontestable; and that this movement, running concurrently with a better rate of remuneration for labour, has induced a higher standard of living than formerly, is equally obvious to the student of economic statistics, notwithstanding all that we are accustomed to hear of the dangers of population pressing on the means of subsistence. Mr. Giffen has already shown you the very considerable fall that has taken place in the prices of commodities in recent years in our own country,* and it would be comparatively an easy matter to prove that like causes have produced like results elsewhere, although not probably to the same extent. Our unique shipping facilities, our great command of capital, and an insular geographical position, must always enable us to take advantage of any fall in the values of commodities abroad more readily and to a greater extent than countries that do not equally possess those advantages; and it is unquestionably to this fact that we owe it that we can purchase to-day American-grown wheat even cheaper than it can be bought in many parts of the United States. I do not, of course, overlook the fact that in many cases the development of the means of commercial intercourse has increased the price of bread-stuffs, &c., by bringing producer and consumer together, and thus enabling the former to command the higher rates of a great market to which he would not otherwise have had access. But if this fact has raised the nominal value of food staples in many rural districts, compensation has been found in the greater flow of capital thereby induced, and other commodities, scarcely less necessary, being thereby acquired at a lower cost.

XI.—*Recapitulation.*

In concluding this paper, I feel that although it has greatly exceeded such limits of your time and patience as I was entitled to claim for the importance of the subject, it can only still be considered as suggestive rather than exhaustive. There are many other phases and aspects of the labour question necessary to be dealt with in a survey of this kind which I am reluctantly compelled to let alone. Among others, I may refer to the character of the houses available for the occupation of the working classes, their hours of labour, their sanitary surroundings, their dietary, their taxation, their savings, and their means of providing their

* "On the Fall in the Price of Commodities in Recent Years."

families with a cheap and a good education. As it is, I think the facts and figures brought forward in this paper justify me in presenting the following recapitulation:—

(1.) That as regards industries that allow of a comparison being made on approximately similar *data*, English labour is more efficient in reference to the *quantity* produced than that of other countries.

(2.) That in agricultural, and very largely, also, in industrial labour, the conditions are such as to render impossible any reliable estimate of the comparative efficiency of workers at home and abroad.

(3.) That in labour (such as earthwork and mason work) requiring endurance and strength, as well as a certain kind of skill, English labour compares very favourably with all others.

(4.) That in a number of selected occupations, which may fairly be regarded as typical of the whole, the wages paid in the United Kingdom are 45·4 per cent. under those paid in the United States, as represented by Massachusetts, and 42 per cent. and 58 per cent. above those of Germany and France respectively.

(5.) That in our Australian colonies the average wages paid in the same occupations are 3·6 per cent. under the average of the State of Massachusetts, and 77 per cent., 157 per cent., and 194 per cent. above the averages of the United Kingdom, Germany, and France, respectively.

(6.) That in other European countries wages generally take a lower range than in those just specified.

(7.) That in the United Kingdom the total amount of wages paid to the working classes in 1880, as computed largely from official returns of their average earnings, was over 580 millions sterling, being an average of 42*l.* per worker.

(8.) That between 1850 and 1883 the average earnings in a number of typical occupations advanced by 40 per cent. in the United Kingdom; that between 1860 and 1883 the average wages ascertained to have been paid in the United States *in all occupations* (excluding professional) increased by 39·9 per cent.; and that in France the average wages paid in a great majority of manufacturing industries increased 53 per cent. in Paris, and 65 per cent. in the country.

(9.) That the largest proportion of wage-earning females, relatively to the whole population, is found in Austria, France, the United Kingdom, Prussia, and the United States, in the order in which these countries are enumerated.

(10.) That juvenile labour is more largely employed in the United States than in Great Britain and Germany.

(11.) That the largest industrial population is to be found in

the United Kingdom, where it numbers 23 per cent. of the total population, against 13 per cent. in Prussia, 12 per cent. in France, and 7·6 per cent. in the United States.

(12.) That so far as Census enumerations can be depended on, they show that the United States possess the largest unproductive population, and that the proportions of the whole population in that category are 54, 56, and 59 per cent. in the United Kingdom, France, and Prussia, respectively.

(13.) That except in reference to house rent and clothing, there are not any very remarkable differences in the average cost of living as between one leading country and another, and certainly not such differences as would be found to correspond with the variations in wages.

One word more. If as Voltaire says, “life is thickly strewn
“ with thorns, and there is no other remedy but to pass quickly
“ through them,” we have at least some grounds for believing that it is not less tolerable in our own, than in other countries, for those who labour for their daily bread; scarcely even excepting that wonderful Republic of which I have had occasion to speak so much, where, in Southey’s burning words—

“ Washington hath left
His awful memory
A light for after times.”

APPENDIX.

I.—Statement showing the Average Weekly Wages Paid in the Building and other Trades of different Countries in or about 1880.

Trade.	England.	United States.	North Germany.	France.	Average of Four Countries.
	s. d.	s. d.	s. d.	s. d.	s. d.
Joiners	36 4	52 8	21 6	19 6	32 $\frac{1}{2}$
Bricklayers	22 8 $\frac{1}{2}$	55 —	20 6	17 6	28 11
Masons	32 8	53 6	21 —	18 —	32 6 $\frac{1}{2}$
Plasterers	36 4	55 2	20 —	17 9	32 3 $\frac{1}{2}$
Labourers	22 9	35 10	16 —	14 —	22 1 $\frac{1}{2}$
Blacksmiths	33 —	67 3	28 —	19 6	36 11 $\frac{1}{2}$
Fitters	32 —	53 5	27 —	22 6	33 8 $\frac{1}{2}$
Turners	32 —	50 —	25 6	22 —	32 4 $\frac{1}{2}$
Colliers	26 3	51 3	20 6	19 —	29 3
Painters (house)	31 6	61 1	21 6	18 —	33 $\frac{1}{4}$
Plumbers	37 4	75 —	22 8	17 6	38 1 $\frac{1}{2}$
Shoemakers	27 3	50 —	19 —	16 4	28 1 $\frac{1}{2}$
Tailors	25 6	57 —	18 6	16 —	29 3
Puddlers	43 —	87 1	29 —	31 6	47 7 $\frac{3}{4}$
Agricultural labourers	17 6	34 —	14 —	13 —	19 7 $\frac{1}{2}$
Average	30 5	55 2	21 8	18 10	31 9

II.—Statement showing the Daily and Average Weekly Wages Paid in specified Occupations in Australia and New Zealand.

Occupation.	New South Wales.	Victoria.	Queensland.	New Zealand.	Weekly Average of Four Colonies.
	s. d.	s. d.	s. d.	s. d.	s. d.
Carpenters	10 —	10 —	10 —	9 —	58 6
Masons	11 —	10 —	10 —	9 —	60 —
Bricklayers	11 —	10 3	10 —	9 —	60 —
Plasterers	11 6	10 —	11 —	9 —	60 3
Labourers	8 6	7 —	7 6	7 —	45 —
Painters and glaziers..	9 6	9 —	9 —	7 —	51 9
Cabinet makers	10 —	9 6	9 —	9 —	54 —
Plumbers	10 6	10 —	11 —	—	63 —
Blacksmiths	9 6	11 6	11 —	9 —	60 —
Moulders and turners	9 6	11 —	11 6	8 6	60 —
Tin smiths	9 —	8 6	8 6	8 —	48 —
Shoemakers	9 —	8 6	8 —	7 6	48 —
Wheelwrights	11 —	9 6	—	—	61 6
Tailors	9 —	9 —	7 6	9 —	50 —
Farm labourers	3 6	4 3	5 —	3 6	24 —

III.—*Wages in Russia in 1880 (Neighbourhood of St. Petersburg), in Paper Money.*

	Copecks per Day.	Sterling.	
		s. d.	s. d.
Braziers	75 to 120 =	10 to 1	5½
Ironfounders	60 „ 110 =	8¾ „	1 4
Labourers	60 „ 70 =	8¾ „	10½
Machinists ..	100 „ 120 =	1 2½ „	1 5½
Masons	80 „ 100 =	11½ „	1 2½
Moulders.....	150 „ 200 =	1 9¾ „	2 5
Smiths.....	75 „ 150 =	11 „	1 9¾
Stokers	60 „ 75 =	8¾ „	11
Turners	120 „ 200 =	1 5½ „	2 5
Unskilled workmen	60 „ 70 =	8¾ „	10½
Whitesmiths	120 „ 200 =	1 5½ „	2 5

IV.—*Statement showing the Number of Hands Employed in the Leading Industries of the United States in 1881 (distinguishing Males above 16 Years of Age from Females and Young Persons), with the Aggregate and Average Wages Paid during the Year.**

Industry.	Number of Hands Employed.		Total Amount Paid in Wages during Year [000's omitted.]	Average Wages per Employé per Annum.	Equivalent in Sterling.		
	Males above 16.	Females and Young Persons.			£	s.	d.
Sailors (steamer)	56,811	—	25,982,	457	95	—	—
Agricultural implement works	38,313	1,264	15,359,	388	80	16	8
Blacksmiths	33,992	524	11,126,	322	67	1	8
Railway employés	418,957	—	195,350,	466	97	1	8
Boot and shoemakers	104,021	29,400	50,995,	382	79	11	8
Bread bakers	18,925	3,560	9,411,	419	87	9	10½
Brick and tile makers	59,032	7,300	13,443,	203	42	5	10
Carpenters	53,547	594	24,582,	454	94	12	8
Carriage and waggon builders	43,630	1,700	18,988,	419	87	9	10½
Tailors.....	77,255	83,558	45,940,	286	59	11	8
Coopers	24,435	1,900	8,992,	341	71	—	10
Cotton operatives	64,107	120,320	45,614,	247	51	9	2
Millers	58,339	168	17,422,	298	62	1	8
Ironfounders and machinists	140,459	4,880	65,982,	454	94	11	8
Cabinet makers	45,186	3,430	20,383,	419	87	9	10
Iron and steel workers	133,203	8,200	55,476,	393	81	17	6
Workers in leather	23,287	5,300	9,204,	322	67	1	8
Sawyers, &c.	141,564	6,350	31,845,	215	44	15	10
Mixed textile workers	17,471	25,900	13,316,	307	63	19	2
Printers, &c.	45,880	12,400	30,531,	523	108	19	2
Shipbuilders	21,338	7	12,713,	596	124	3	4
Tin, copper, and sheet iron	23,903	2,300	10,722,	409	86	4	2
Workers in tobacco	40,099	13,198	18,464,	346	72	1	8
„ woollen goods... ..	46,978	39,520	25,836,	299	62	5	10
Miners—coal, iron, &c.....	195,968	24,507	71,992,	326	67	18	4

* This table is compiled from the Tenth Census of the United States.

V.—*Total Number of Persons Employed in different Leading Occupations in the United Kingdom, with Average Weekly and Total Annual Earnings.*

	Total.	Males.	Females.	Average Earnings per Week		Total Earnings per Annum.
				s.	d.	£
Agricultural labourers	1,333,448	1,212,999	120,449	12	—	41,603,578
Bakers.....	95,534	86,370	9,164	16	—	3,974,214
Bargemen, &c.....	32,158	31,796	362	18	—	1,504,994
Bathing and washing } service.....	205,353	3,601	201,752	12	6	6,673,971
Bellhangers and lock- } smiths.....	8,154	7,802	352	21	—	445,208
Blacksmiths	147,456	147,102	354	20	—	7,667,712
Board and lodging keepers	45,633	5,337	40,296	25	—	2,966,145
Boat builders	22,855	22,816	39	18	—	1,069,614
Boiler makers.....	34,862	34,862	—	20	6	1,858,145
Bolt and nut makers.....	8,823	6,386	2,437	15	—	340,084
Bonnet and hat manu- } factures	31,185	3,021	28,164	12	—	972,972
Bookbinders	25,497	11,443	14,054	12	—	795,506
Boot and shoe makers	267,352	228,361	38,991	16	—	11,121,843
Box makers and turners..	16,654	13,651	3,003	15	—	649,506
„ and paper bag makers	11,469	1,310	10,159	11	—	328,013
Braziers, &c.	32,682	31,625	1,057	18	6	1,572,004
Brewers	27,195	26,803	392	16	6	1,166,664
Bricklayers	129,966	129,881	85	21	—	7,096,143
Brick and tile makers	53,740	50,607	3,133	18	—	2,515,032
Broom and brush makers	14,836	9,892	4,944	17	6	675,038
Builders	34,003	33,866	137	22	6	1,989,175
Butchers	96,563	92,435	4,128	17	6	4,393,615
Button makers	6,449	2,324	4,125	12	6	209,593
Cabinet makers, &c.	70,241	61,223	9,018	20	6	3,743,844
Cabmen, flymen, &c.....	34,817	34,817	—	17	6	1,584,173
Calenderers, &c.....	23,720	18,299	5,421	21	6	1,325,948
Calico printers, &c.....	39,318	29,189	10,129	22	—	2,248,989
Cane and rush workers	13,012	10,290	2,722	18	—	608,962
Carmae, carriers, &c.....	157,209	156,445	764	19	6	7,970,496
Carpenters and joiners	295,958	295,734	224	24	6	18,852,524
Carpet and rug makers	17,210	10,906	6,304	18	—	805,428
Carvers and gilders	9,764	9,405	359	22	6	571,194
Cellarmen	7,108	6,757	351	17	6	323,414
Cemetery and church } officers.....	6,289	4,582	1,707	15	—	245,271
Chain and anchor makers	5,116	4,124	992	22	6	299,286
Charwomen	99,528	—	99,528	9	6	2,458,341
Chemists and druggists....	22,506	21,778	728	18	6	1,082,538
„ (manufacturing)	16,679	15,233	1,446	19	6	845,625
Chimney sweeps.....	7,858	7,779	79	17	6	357,539
China and porcelain	60,028	30,865	29,163	15	—	2,341,092
Coffee, tea, and grocery	169,577	133,539	36,038	13	—	5,731,702
Cider and beer sellers	17,165	13,422	3,743	15	—	669,435
Civil service messen- } gers, &c.	21,180	20,627	553	18	6	1,018,758
Civil service officers } and clerks	25,568	22,352	3,216	20	—	1,329,536
Carried forward	3,801,718	3,101,656	700,062	—	—	156,002,764

V.—Total Number of Persons Employed in Leading Occupations—Contd.

	Total.	Males.	Females.	Average Earnings per Week.		Total Earnings per Annum.
				s.	d.	£
Brought forward	3,801,718	3,101,656	700,062	—		156,002,764
Commercial clerks.....	219,816	212,067	7,749	17	6	10,001,628
Cotton goods manufacture	523,754	193,055	330,699	14	6	19,745,525
Clock and watchmakers, } &c.	27,657	26,829	828	19	—	1,366,256
Cotton printers, } bleachers, &c.	39,691	29,540	10,151	17	6	1,805,940
Clog and patten makers...	7,868	7,792	76	18	—	368,222
Coachmakers, &c.	29,821	29,600	221	20	—	1,550,692
Coachmen and grooms	83,418	83,418	—	17	—	3,687,076
Coalheavers	16,313	16,304	9	16	—	678,621
Coal miners	436,348	432,848	3,500	18	6	20,988,339
Commercial travellers	41,829	41,829	—	30	—	3,262,662
Confectioners, &c.	31,193	14,790	16,403	16	—	1,297,629
Coopers and hoop makers	28,459	28,345	114	19	—	1,405,875
Copper goods workers, &c.	8,248	8,198	50	20	—	428,896
„ miners, &c.	5,181	5,181	—	18	—	242,471
Cord and twine makers....	19,145	13,358	5,787	16	—	796,432
Corn millers, &c.	33,909	33,237	672	21	—	1,851,431
Costermongers, &c.	55,706	33,851	21,855	14	—	2,027,698
Curriers	17,615	17,049	566	22	—	1,007,578
Cutlers	18,517	16,930	1,587	24	—	1,155,461
Dairymen, milk sellers	33,847	25,997	7,850	18	—	1,584,040
Dealers, general	93,162	45,036	48,126	20	—	4,844,424
District and parish officers	14,912	11,895	3,017	16	—	620,339
Dock and harbour service	50,772	50,649	73	18	—	2,373,790
Domestic gardeners, &c....	95,483	78,572	16,911	16	—	3,972,093
„ indoorservants	1,695,887	98,645	1,597,242	14	—	61,730,287
Drapery, linen, &c.	104,053	70,525	33,528	20	—	5,410,756
Dressmakers and milliners	447,467	3,048	444,419	14	—	16,287,799
Drivers, stokers, &c.	27,441	27,441	—	20	—	1,426,932
Engine drivers and } firemen	78,085	78,085	—	20	6	4,161,931
Engine and machine } fitters	78,828	78,828	—	22	—	4,508,962
Engine and machine } makers.....	47,731	47,362	369	21	6	2,668,163
Factory labourers	37,454	22,888	14,566	15	—	1,460,706
Fancy goods (textile)	18,886	2,009	16,877	14	—	687,450
Farm bailiffs	23,001	23,001	—	20	—	1,196,052
Farriers, &c.	8,643	8,643	—	25	—	561,795
Fellmongers and tanners .	11,369	11,272	97	22	—	650,307
File makers	9,106	7,899	1,207	24	—	568,214
Fishermen	72,869	69,988	2,881	18	—	3,410,269
Fishmongers, &c.	24,300	19,283	5,017	24	—	1,516,320
Flax and linen manu- } facture.....	119,951	33,053	86,898	14	—	4,366,216
Florists and nurserymen	9,035	8,138	897	21	—	493,311
French polishers	12,491	10,049	2,442	20	—	649,532
Fruiterers and green- } grocers.....	34,982	24,852	10,130	15	—	1,364,298
Furriers and skinners	9,024	5,480	3,544	14	—	328,474
Carried forward	8,604,935	5,208,515	3,396,320	—		356,513,756

V.—*Total Number of Persons Employed in Leading Occupations—Contd.*

	Total.	Males.	Females.	Average Earnings per Week.		Total Earnings per Annum.
				s.	d.	£
Brought forward	8,604,935	5,208,515	3,396,320	—	—	356,513,756
Fustian makers, &c.	8,187	3,011	5,176	14	—	298,007
Gamekeepers	17,981	17,981	—	17	6	818,134
Gardeners (not domestic) ..	74,342	71,739	2,603	17	—	3,285,916
Gasfitters	13,052	12,905	147	21	—	712,639
Gas works service	21,804	21,800	4	17	6	992,082
General labourers	771,501	757,840	13,661	16	—	32,094,442
Glass manufacture.....	23,638	23,113	525	18	—	1,106,258
Glaziers and painters	116,317	115,809	508	17	6	5,292,424
Glove makers	15,583	2,298	13,285	14	—	567,221
Goldsmiths and jewellers.	26,675	22,826	3,849	17	6	1,213,711
Grooms, horsekeepers, } &c. (not domestic).... }	40,863	40,819	44	16	—	1,699,901
Guards (railway)	12,064	12,064	—	20	—	627,328
Gunsmiths	8,156	7,937	219	21	—	445,318
Gutta percha, &c.	5,912	4,157	1,755	17	—	261,310
Haberdashers and hosiers	10,363	5,300	5,063	21	—	565,820
Hairdressers, &c.....	17,115	16,303	812	18	—	800,982
Hardware dealers and } ironmongers	20,840	19,629	1,211	18	—	975,312
Harness and whip makers	28,790	26,736	2,054	17	6	1,309,945
Hat makers, &c.....	25,376	14,885	10,491	21	—	1,385,530
Hosiery manufacture	43,684	20,236	23,448	14	6	1,646,887
Hospital and institu- } tion service	20,036	5,399	14,637	15	6	807,451
Hotel and inn service	67,198	39,799	27,399	14	6	2,533,365
House, life, ship, &c., } service.....	15,068	14,821	247	15	—	587,652
Iron and steel workers	241,346	239,398	1,948	23	—	14,432,491
Jute, hemp, &c.	19,884	4,961	14,923	14	9	762,551
Ironstone miners	37,095	36,856	239	22	—	2,121,834
Labourers (railway) and } navvies	42,212	42,212	—	17	6	1,920,646
Lace makers	45,785	11,675	34,110	14	6	1,726,095
Law clerks, &c.	24,602	24,502	100	16	6	1,055,426
Lead miners	11,908	11,704	204	16	—	495,373
Leather goods.....	6,288	4,838	1,450	17	—	277,930
Level crossing and } pointsmen	7,406	7,229	177	16	6	317,717
Lime burners	3,677	3,636	41	17	—	162,523
Lithographers, &c.....	7,613	7,284	329	23	—	455,257
Machinists (undefined)....	20,918	5,748	15,170	15	—	815,802
Maltsters.....	9,850	9,792	58	22	—	563,420
Masons	131,476	131,348	128	24	—	8,204,102
Mechanics, artisans, &c. } (undefined)..... }	36,481	34,124	2,357	25	—	2,371,265
Messengers and porters....	155,811	151,629	4,182	18	6	7,494,509
Millwrights ..	8,961	8,960	1	21	—	489,271
Mine service	4,658	4,628	30	23	—	278,548
Miners (undefined)	3,359	3,288	71	21	—	183,401
Musical instrument } makers.....	9,690	9,663	27	25	—	629,850
Carried forward.....	10,848,500	6,476,989	3,599,103	—	—	461,299,402

V.—*Total Number of Persons Employed in Leading Occupations—Contd.*

	Total.	Males.	Females.	Average Earnings per Week.		Total Earnings per Annum.
				s.	d.	£
Brought forward	10,848,500	6,476,989	3,599,103	—	—	461,299,402
Nail manufacture	21,422	12,269	9,153	20	—	1,113,944
Needle makers	4,455	2,381	2,074	21	—	243,243
Office keepers (not } Government)	6,193	1,892	4,301	17	6	281,781
Paper manufacture	27,111	13,942	13,169	15	—	1,057,329
Paperhangers	10,168	10,073	95	20	—	528,736
Parasol and umbrella } makers.....	9,046	4,568	4,478	17	6	411,593
Paviors	4,771	4,771	—	18	—	223,284
Penmakers	2,723	220	2,503	16	—	113,277
Pewter manufacture, &c..	5,629	4,791	838	17	6	256,119
Photographers	6,661	5,352	1,309	22	—	381,009
Plasterers	34,662	34,620	42	24	—	2,162,909
Platelayers	26,156	26,156	—	21	—	1,428,117
Plumbers.....	45,801	45,548	253	25	—	2,977,065
Police	32,508	32,508	—	19	—	1,605,895
Printers	73,611	70,337	3,274	24	—	4,593,326
Provision curers, &c.....	21,909	14,895	7,014	20	—	1,139,268
Quarriers (slate)	15,764	15,764	—	21	—	860,714
„ (stone)	36,542	36,541	1	20	6	1,947,689
Railway, &c., wagon } makers.....	7,912	7,854	58	22	—	452,566
Railway officials and } servants (unspecified) }	120,437	119,901	536	18	—	5,636,452
Sailmakers	5,225	5,178	47	21	—	285,285
Salesmen and buyers } (unspecified)	6,403	3,719	2,684	25	—	416,195
Salt workers	2,982	2,823	159	24	—	186,077
Sawyers	30,049	30,046	3	21	—	1,640,675
Seamen (merchant service)	121,035	120,977	58	—	—	—
„ (royal navy)	16,811	16,811	—	—	—	—
Seamstresses and shirt- } makers.....	165,584	2,437	163,147	12	—	5,166,221
Shepherds	39,900	39,795	105	14	—	1,452,360
Shipbuilders, &c.	28,024	27,969	55	22	—	1,602,973
Shipwrights, &c.....	44,057	44,035	22	23	—	2,634,609
Silk goods manufacture...	61,131	19,716	41,415	14	—	2,225,168
Slaters and tilers	13,884	13,869	15	21	—	758,066
Soldiers (non-commis- } sioned)	56,935	56,935	—	—	—	—
Spinning and weaving } machine, &c., makers }	22,433	21,362	1,071	22	—	1,283,168
Stationers, &c.....	18,885	13,210	5,675	17	6	859,268
Stoncutters, &c.....	12,851	12,844	7	21	—	701,665
Sugar refiners.....	4,411	4,285	126	18	—	206,435
Tailors	201,880	143,963	57,917	16	—	8,398,208
Telegraph service	10,173	7,795	2,378	13	—	343,847
Thread manufacture	7,633	1,156	6,477	12	6	248,072
Timber workers, &c.	14,556	13,532	1,024	16	6	624,452
Tin miners	12,402	10,499	1,903	17	6	564,291
„ plate manufacture, &c.	38,937	34,387	4,550	17	—	1,721,015
Carried forward	12,287,762	7,588,715	3,937,039	—	—	520,031,768

V.—*Total Number of Persons Employed in Leading Occupations—Contd.*

	Total.	Males.	Females.	Average Earnings per Week.		Total Earnings per Annum.
				s.	d.	£
Brought forward	12,287,762	7,588,715	3,937,039	—		520,031,768
Tobacco manufacture, &c.	24,099	13,841	10,258	12	—	751,880
Tool makers, &c.	10,307	10,088	219	22	—	589,569
Trimming makers	6,617	1,616	5,001	13	—	223,655
Warehousemen (not } Manchester) .... }	34,347	29,830	4,517	19	—	1,696,742
Waterworks service	2,972	2,964	8	20	—	154,544
Weavers (undefined).....	25,584	7,087	18,497	15	—	997,776
Whitesmiths, &c.	12,251	12,112	139	18	—	573,347
Wireworkers	10,230	9,621	609	21	—	558,558
Woodmen	11,544	11,539	5	18	—	540,259
Woollen cloth manu- } lature..... }	150,655	72,846	77,809	14	—	5,483,842
Worsted manufacture ...	101,026	35,917	65,109	13	6	3,546,013
Total	12,677,794	7,796,176	4,119,210	Average 18 4		535,147,953

VI.—*Statement showing the General Average Weekly Wages Paid in the State of Massachusetts in 1860 and 1883.**

Industry.	1860.	1883.	Per Cent. Increase, 1883 on 1860.
	\$	\$	
Cotton	6'50	6'45	—
Flax and jute	4'63	6'46	39
Food	8'81	9'81	11
Furniture	11'77	11'04	—
Leather	10'01	10'65	6
Machines	7'90	11'75	48
Metals.....	9'07	11'25	24
Paper	8'63	8'11	—
Printing, &c.	11'06	11'37	2
Dyeing, bleaching, &c.	9'90	8'67	—
Shipbuilding	20'84	20'44	—
Silk and silk goods	5'91	7'58	28
Stone	8'01	14'39	79
Woollen goods	5'38	6'90	28
Worsted „	6'10	7'32	20

* “Reports of the Massachusetts Bureau of Labour Statistics.”

VII.—*Average Wages Paid in Paris and in the Departments of France, in each of the Years 1853 and 1883.**

	Daily Wages Paid in Paris.		Daily Wages Paid in Provinces.		Numbers Employed in 1880.
	1853.	1883.	1853.	1883.	
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>	
Brickmakers.....	2 6	5 —	1 6	2 6	1,497,686
Quarrymen	2 6	3 4	1 8	2 8	
Shoemakers	2 6	4 2	1 6	2 4	
Carpenters	4 2	5 —	1 10	3 2	
Wheelwrights	3 4	5 —	1 8	2 10	
Coppersmiths	3 9	6 —	1 10	2 11	
Ropemakers	2 6	3 4	1 5	2 4	
Slaters	4 2	6 —	1 9	3 3	
Blacksmiths	4 2	5 10	2 —	3 1	
Masons	3 6	6 3	1 10	2 11	
Farriers.....	3 —	5 —	1 7	2 8	
Carpenters	2 11	5 10	1 8	2 10	
House painters	3 4	5 10	1 10	2 11	
Plumbers	3 4	5 —	1 10	2 11	
Potters	2 11	3 4	1 7	2 6	
Sawyers.....	2 11	4 10	1 8	2 11	
Locksmiths	3 4	5 5	1 9	2 10	
Tailors	4 2	6 8	1 11	3 2	
Navvies and ordinary labourers }	2 6	4 —	1 3	2 4	
Turners (wood)	3 4	4 —	1 7	2 8	
„ (metal)	4 2	5 10	2 1	3 2	
Glaziers	3 1	4 7	1 8	2 7	
Average increase	—	53 p. ct.	—	65 p. ct.	—

* From the “Statistique Annuaire.”

VIII.—*Statement showing the Number of Women Engaged in each Class of Occupation in the United Kingdom, France, the United States, Germany, and Austria.*

(Compiled from the official Census Reports of each country.)

Class of Occupation.	United Kingdom.	France.	United States.	Prussia.	Austria.
Agriculture.....	199,218	1,546,000	594,000	1,230,000	2,649,000
Professional	288,919	151,000	269,000	124,000	28,500
Domestic.....	2,038,941	1,399,000	1,092,000	855,000	644,000
Trade	26,344	428,000	57,000	145,000	74,000
Transportation	14,612		2,000		3,500
Manufactures	1,999,182	1,565,000	631,000	583,000	955,000
Mines	6,227		79		9,500
Totals	4,573,443	5,089,000	2,645,079	2,937,000	4,363,500

IX.—*Statement showing the Number of Children from 10 to 15 Years of Age Employed in each Class of Occupations in the United Kingdom and the United States respectively, with Percentage Proportion of Total Employés.* (Compiled from the official Census Reports.)

Class of Occupations.	United Kingdom. Number of Children Employed.	United States. Number of Children Employed.
Agriculture.....	13,771	720,729
Professional	132,186	107,637
Domestic.....	75,505	127,748
Trade	103,692	25,223
Transportation		3,402
Manufacturing		122,448
Mining	346,870	11,159
Totals	672,024	1,149,346

X.—*Total Number of Persons Employed in Industrial Occupations in each Country.* (Compiled from Census Reports.)

Country.	Total Population. [000's omitted.]	Total Number Employed in Industrial Occupations. [000's omitted.]	Percentage Total Population Employed in Industry.
United Kingdom	35,003	7,979,	24'4
England and Wales	26,094,	6,373,	24'5
Ireland	5,174,	691,	13'3
Scotland	3,735,	932,	24'4
United States.....	50,155,	3,837,	7'6
Prussia	27,279,	3,650,	13'4
France.....	37,321,	4,465,	11'9
Austria-Hungary ...	36,000,	2,279,	10'0
Belgium	5,520,	952,	17'2
Italy	26,801,	238,	0'9
India	253,891,	33,741,	13'3
Canada	4,324,	254,	5'8

XI.—*Statement showing the Number of Persons without specified Occupations in different Countries.* (Compiled from Census Reports.)

Country.	Total Population. [000's omitted.]	Total Number without Specified Occupation. [000's omitted.]	Percentage of Total Population without Specified Occupation.
United Kingdom	35,003,	19,703,	56
England	26,094,	14,786,	56
Scotland	3,735,	2,128,	56
Ireland	5,174,	2,788,	53
United States	50,155,	32,760,	65
France (1876)	37,321,	20,771,	56
Italy	28,010,	11,773,	40
Austria (1876)	22,144,	10,750,	31
Hungary (1876).....	13,218,	8,181,	61
Prussia	27,279,	16,273,	59
Belgium	5,520,	2,834,	50
Spain (1879)	16,809,	3,680,	21
India	253,891,	134,988,	53
Victoria	862,	45,	5

XII.—*Summary Statement, showing the Distribution, as regards Occupations, of the Population of different Countries.*

(Compiled from Census Reports.)

Country.	Population at Last Census. (1=1,000.)	Professional Class.		Domestic Class.	
		Total Number.	Per Cent. of Total Population.	Total Number.	Per Cent. of Total Population.
England and Wales	26,094	647,075	2·4	1,803,810	6·9
Scotland	3,735	96,103	2·6	176,565	4·7
Ireland	5,174	198,684	3·8	426,161	8·2
United Kingdom	35,003	941,862	2·7	2,406,536	7·0
„ States.....	50,155	939,157	1·8	3,135,081	6·3
Prussia	27,279	587,210	2·1	886,177	3·2
France.....	37,321	665,000	1·8	2,339,683	6·3
Austria	22,144	429,000	1·9	890,207	4·0
Belgium	5,520	167,000	3·0	498,100	9·0
India	253,891	3,293,000	1·3	2,801,595	1·1
Totals	431,313	7,022,229	1·6	12,957,379	3·0

Country.	Commercial Class.		Industrial Class.		Agricultural Class.	
	Total Number.	Per Cent. of Total Popula- tion.	Total Number.	Per Cent. of Total Popula- tion.	Total Number.	Per Cent. of Total Popula- tion.
England and Wales	980,128	3·7	6,373,367	24·5	1,383,184	5·3
Scotland	132,126	3·5	932,653	24·4	269,537	7·0
Ireland	72,245	1·4	691,509	13·3	997,956	19·0
United Kingdom	1,184,499	3·3	7,997,529	23·0	2,650,677	7·5
„ States.....	1,810,256	3·6	2,837,112	7·6	7,670,493	15·3
Prussia	911,706	3·3	3,650,326	13·0	4,692,348	17·0
France.....	1,573,000	4·2	4,465,000	12·0	6,632,200	18·0
Austria	451,000	2·0	2,279,000	10·0	6,155,000	28·0
Belgium	244,247	4·4	952,947	17·2	807,464	14·6
India	3,679,000	1·4	33,741,000	14·6	71,198,000	28·0
Totals	9,853,708	2·3	56,922,914	13·2	99,806,182	23·1

DISCUSSION *on* MR. JEANS'S PAPER.

THE PRESIDENT suggested that it would be well if the discussion were directed to some definite objects pointed out in the recapitulation in the paper, especially as Mr. Jeans did not read it. Four points especially presented themselves for notice. In the fourth, fifth, and sixth articles of the recapitulation the question was raised as to the rates of wages in different countries; in the seventh the average annual earnings of our labouring population; in the eighth the increase in recent periods, and in the thirteenth the cost of living.

Mr. GEORGE HOWELL, after thanking Mr. Jeans for the very fair and candid manner in which he had grappled with the labour question, said that the facts and figures he had brought together were well worthy of attention. As a rule he did not agree with those who were in the habit of seeking averages with regard to wages. The average was generally placed too high, and certain circumstances were not sufficiently taken into consideration, and he was not quite sure that the author of the paper had not done the same thing. With regard to the proportionate increase of wages, he could state with confidence that the time lost perforce among the working classes of this country was greater now than it was twenty, thirty, or fifty years ago; not because of any fault of their own, but because of the number of holidays that had been established, and the fluctuations in trade. There was another factor which must be taken into account, and that was that the age at which men were dispensed with by their employers was being pressed more and more downward; until those who had a streak of grey hair on their heads were refused, and younger men were set to work. This would affect the average amount of wages earned from year to year, and drive a number of elderly men back upon their trade and benefit societies for subsistence. Latterly he had sent out a number of letters to men connected with some of the larger organisations in the country, and in every case the replies had confirmed his prior convictions. With regard to the cost of living, he thought the proportion set down in the paper for rent was a low one, as sufficient account had not been taken of the taxation in this country as compared with that in other countries. The local taxation would generally be found to be not less than one-fifth of the rental, while very frequently it amounted to one-fourth. The rent ought therefore to be increased by that amount. Although in the towns many of the artisans and labourers might live in lodgings, yet the price of lodgings was raised in exactly the same proportion as the house rent with the taxation added. Speaking generally, with regard to the tone of the paper, there was a very marked difference in the manner in which industrial subjects were now dealt with, from that which prevailed a few

years ago. It was beginning to be considered worth our while as a nation to pay some attention to the actual condition of the working population. He joined with Mr. Jeans in regretting that the English Government could not afford to pay for the collection of statistics relating to labour. It was a disgrace to the country, spending from 80 million to 85 million pounds a year, that it did not possess a bureau of statistics of labour, for Englishmen were now obliged to go to foreign countries for the most elaborate reports on this subject. More than twenty years ago he submitted to some of the members of the then existing Government a proposal with regard to this matter, and he had never ceased to press it more or less in the interval. Most of the statistics furnished by the Government, even those in the miscellaneous statistics, were very inadequate indeed. Surely it ought to be worth the while of "a nation of shopkeepers," a nation almost entirely dependent upon her artisans, to furnish the best and truest information with regard to the condition of workers in other countries. He could not say whether the Government were afraid that a greater number would be drafted off to other countries if the real state of things were known, he could not say, but such a feeling might exist among certain of the employers. It would be a good thing for our artisans if they could realise what underlay the fact of the difference between the wages of the labouring classes in America and in England. The larger the amount of wage earned by the industrial population of a country the greater would be its consumptive powers. America was able to maintain itself, and to rest almost entirely upon its own consumption, but where would England be in six months if the exports were entirely stopped? She would become bankrupt, and her industrial population would be in absolute poverty. If the wages of the wage-earning classes could be increased 20, 40, 60, or 100 per cent. throughout the country, though he could not suggest how that could be done—there indeed was the practical difficulty—they would have a proportionately increased purchasing power that would be equivalent to an immense foreign trade, and therefore he contended that the great difficulty was not so much over-production as under-consumption among the mass of the population.

Mr. CORNELIUS WALFORD thought that if the rate of wages was increased in anything like the proportion suggested by the last speaker, the export trade of the country would disappear for ever, because every other country would be able successfully to compete with us. If the rate of wages was to be increased at all, the increase must extend to all the wage-earning classes; and if a carpenter with 5s. a week more had to pay an additional 5s. to the shoemaker, in what way would his condition be improved? He had for many years made the rate of wages in America a subject of special attention. It was higher than in England, but did it follow that the working classes were better off there than in this country? Some years ago, when the price of provisions was very low indeed, the working classes were better off there, but at the present time they were not, and the fact that thousands were now

coming back to England was some argument in that direction. As a whole the condition of the working classes in America might be better than in England, but there was a reason for that other than the rate of wages. In the neighbourhood of Philadelphia and other large towns there were miles of beautiful cottages owned by working men, and possession of them was obtained by means which were open to the working men of this country, namely, through building societies, and by not spending one-quarter or one-third of their income in beer and tobacco. Whenever the time arrived that the working classes in England became really frugal, intelligent, and self-elevating, then not only would they be better off, but trade would be made so much more secure. He had lately visited some of the largest steel works in America, and one of the first things that struck him was the small number of hands at work on the operations as compared with those in the works at Sheffield and other districts. Nearly all the work done by hand labour at the iron and steel furnaces in this country was done by machinery in America. A man stood on an elevated platform in the corner of a workshop, and by means of a series of levers put into force machinery which produced the required result more quickly and effectually than hand labour in England. He had seen ingots of steel poured out, carried on to the different rollers, and lifted on the rollers by the one man who directed the force from the corner of the shop. Although each workman there might obtain 50 per cent. more wages than he would in this country, still if only half the men were employed there would be 25 per cent. at least in favour of the manufacturer. It had been stated in the paper that English earthworkers were very much superior in almost every respect, physically especially, to those of any other country; but perhaps it had been overlooked that the Italians and the Chinese were now rivalling us in that class of work. In making the Mont Cenis and St. Gothard tunnels the Italians proved themselves quite equal to the English navvy, and at the present moment the works at Forth Bridge were being carried out by Italians, not altogether on account of their physical excellence in labour, but because of their superior knowledge of scientific appliances. The Union Pacific Railway would never have been built but for Chinese labour. Although the Chinamen were not physically as strong as English navvies, yet by their intelligence and industry they managed to get through quite as much work. There must be some slight mistake in the paper with regard to the statistics of the unproductive classes in America; but he thought he could see how the mistake arose. While in this country a very large proportion of the daughters of labourers went out to service or worked in cotton mills, in America it was not the custom for even working men to send their daughters out to work; and out in the West, away from towns, the females had no means of employment. If the circumstances were equal, and towns only were included, he thought there would be very little difference between the unproductive classes in America and in England.

Mr. H. MONCREIFF PAUL said that Mr. Jeans, in his introductory

remarks, had thoroughly recognised the difficulties attendant on the comparison of the efficiency and earnings of labour at home and abroad; just as no precise comparison could be made between the earnings of any one of the operative classes now and fifty years ago, by reason of the fact that, for example, the blacksmith of to-day does not do exactly the same work as the blacksmith did then; so in the present time the labour performed in different countries, although nominally the same, is not so in reality. Agriculturists, for instance, in America did different work from agriculturists in Germany or England, and therefore it was very difficult to compare their respective earning powers. Speaking from personal observation, he differed from Mr. Walford with regard to the efficiency of Chinese labour. At the gold mines in Australia Chinamen had to work for seven days in the week, ten, twelve, or fourteen hours a-day, without turning out so much work as Englishmen did in six days of eight or nine hours each. This was the case, notwithstanding the assiduity, patience, industry, and temperance of the Chinamen. These qualities were prominently exhibited by the fact that in parts of the gold fields which had been abandoned by Europeans, Chinamen not only contrived to make a living, but to save money. This, too, showed the difficulty of comparing the efficiency and the earning power of different nations even over the same work. Mr. Walford had pertinently called attention to the fact that where labour was dear and wages high, the tendency was to economise it by means of machinery. As an example of this he had cited the application of machinery to steel works in the United States, and the same thing was observable in connection with agricultural operations in that great centre of grain production. Mr. Jeans's remark that climatic conditions affected the power of labour was a very important one, for in a dry climate men worked more assiduously, and apparently with less effort, than in a moist one, although in reality they taxed their powers more severely. He rather joined issue with Mr. Jeans in his views with respect to the woollen and worsted manufactures in one particular. It was perfectly true that labour in France was cheaper than in this country, and the result had been that many of our manufacturers in Yorkshire opened establishments in France for the purpose of carrying on their business there more economically than they could in England. But Germany was now beginning to go ahead of France. Official statistics to show this were not yet issued, but in a little while it would be found that in Germany, as regards woollen manufactures, the power of production was surpassing the production in France. The paper referred to the discoveries of gold in California and Australia adding to the earnings of the people by increasing the supplies of the precious metals; but there was another phase of that question. These gold discoveries stimulated emigration all the world over while the fever lasted, and in proportion as it did so, raised the wages in the countries from which the emigrants started. The gold fields also caused a great rise in the value of all commodities in their immediate neighbourhood; but, unfortunately, where wages rose suddenly, waste increased also, of which many instances could be

cited on the gold fields of Australia. In Appendix II he submitted there was a slight mistake with regard to the earnings of the various labouring classes in Australia. The weekly wages of farm labourers were put at 24s., and of town labourers at 45s., but the former had their rations found for them, while in the latter, in common with all the other occupations named in the table, the operatives had, speaking popularly, "to find themselves." This being so, the weekly average of the whole would be slightly affected, and the table would require modification accordingly. There were certain special considerations in France which led to the rise in wages between 1860 and 1880. Mr. Jeans seemed to think that it was rather a staggerer to free traders that this should occur in a quasi-protectionist country; but it was well known that the late Emperor Napoleon pressed forward public works both in Paris and throughout France, and the price of labour increased accordingly. Then the increase in the population of France was very slight as compared with that of many European countries, and therefore the proportion of labourers did not increase as it did elsewhere. There was also a great loss of men during the Franco-Prussian war, which diminished the working power; and as an outcome of the communistic elements after the close of the war, a good deal of compulsory emigration ensued. It was perfectly true, as stated in the paper, that American wheat might now be bought in England at a price below the proper cost of production, but that was not altogether the result of our insular position, because the same observation would apply to France or Germany. To a great extent it was the result of the establishment of telegraphic communication, the tendency of which was to make the price of any commodity at the point of production as high, if not higher, than that ruling at the centre of consumption.

Mr. WALTER PEACE wished to ask Mr. Jeans whether in his comparison of the averages of wages as paid in this country and in some colonies, he had estimated the hours of labour. As a matter of fact the payment in the colonies was given as 77 per cent. more than in this country, but it should also be remembered that the hours of labour were 20 per cent. less. A day's work in this country was on the average ten hours, in a colony it was eight hours, and that of course would affect the statistics.

Mr. GEORGE HURST questioned very much whether the statistics given in the paper could possibly be relied upon. People who made returns as to the wages they paid, very often did so inaccurately. He had known it done with regard to agriculturists, and manufacturers frequently spoke of the maximum wages, and kept the average altogether out of sight. The fact must also be taken into consideration that during the last few years a reaction had taken place so far as agricultural labourers were concerned. The ordinary agricultural labourer's wages were spoken of as 14s., but at present it was reduced to 11s. The great loss of time by lack of employment must also be considered, for some large manufacturers, while keeping up their rate of wages, were working only

three-quarters or half time, and the actual earnings of the workmen were reduced in that proportion. The paper stated that a great deal of the price of cotton depended on the price of labour, but it also depended on the value put upon it by the manufacturer.

Mr. BENJAMIN WHITWORTH, M.P., said he did not think there was any improvement in steel manufacture in America which was not adopted in this country. Unfortunately he himself was engaged in the cotton trade, and he could say that for the last five or six years 2 per cent. per annum had not been made on the whole of the capital employed in this country in that trade. With regard to the rise in wages, for twenty years, from 1840 the average price paid for cutting cotton velvets was 6s. a piece, but during the last three or four years not a single piece could be done for less than 18s. He thought that Mr. Jeans had not taken into account the shorter hours of labour in this country; and to equalise the returns it would be necessary to add at least 20 per cent. to the wages of the English workmen. Mr. Howell had a very wrong impression about the present state of labour in America, and he did not believe that the wages of the artisan in America would buy the same amount of comforts and necessities that the wages of a workman in England would buy, rent itself being 50 or 60 per cent. higher there than here, so that the 1*l.* that the English labourer earned would certainly go further than the 30s. or 35s. that he might earn in America. At the present time, owing to the great depression and the unsound system of protection, wages were more rapidly decreasing in America and France than in England. Unless there was an improvement in trade shortly, he believed wages would have to be reduced here, because all the losses now fell upon the employers and not upon the employed; each should bear a fair proportion of the burden.

Dr. G. B. LONGSTAFF said that during the past summer he was surprised to hear on the Canadian Pacific Railway that the labour of the Englishman was considered inferior even to the Indian, the best labour being Swedish or Italian; the reason for the inferiority being that the Englishman was most discontented and most difficult to manage. When he asked if the Italian was really a first-class excavator and platelayer, the reply was: "No, not according to the old standard, but unfortunately we are not able to get anything in this country equal to the old English navy; but of that labour which we can get access to, that which we have recently got from England is the worst."

Professor LEONE LEVI said that the paper displayed great power of research, and of digesting materials of much value. Mr. Jeans stated that for productiveness the British labourers were superior to those of most other countries, but he had only given instances where physical labour was mostly required. For mental power and fertility of invention, however, the French labourer would probably excel the British labourer, whilst moral qualities must be taken into account. Mr. Howell had said that there was much forced

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suspension of labour in England, but what would he say about the voluntary absence from labour? St. Monday appeared to be an important institution in this country, and in some instances as many as 20 per cent. of the labourers had been reported to him to have absented themselves for no justifiable cause. In the economy of industry all were interdependent, and if one voluntarily absented himself others must suffer. Of course it was important to consider how much a person gave for the wages he received. Some years ago he was engaged in an inquiry on agricultural labour, and had to compare the earnings of the Devonshire labourer with those of the Northumbrian labourer. The former worked from about eight in the morning, after giving the freshest hours to his own allotment of land, to four or five in the afternoon, whereas the latter went to his work early in the morning and remained till late in the evening, so that the Devonian got 8s. or 9s. a week, and the Northumbrian 16s. or 17s.; the latter deserved the higher wages. He was disappointed to find that no comparison had been made of the taxation in different countries, for that bore very materially upon the cost of living, and he joined in the complaint that the Government did not give the statistics required for such inquiries. The miscellaneous statistics came out in a slovenly manner, the last giving the particulars down to 1880, and since then there had been a considerable reduction in the rate of wages. The miscellaneous statistics had also given the rate of wages upon different industries almost every year, so that they were scarcely comparable one with another. Upon the question of wages the late reports were therefore to a large extent valueless. He hoped that the Society would impress upon the Government the necessity of paying more attention to commercial and industrial statistics. It was much to be lamented that the last census was decidedly inferior to that of 1871 upon this point. One might almost desire that Dr. Farr would come again and give the impetus of his energy and zeal to the statistical department.

Mr. F. DEBENHAM, referring to the large proportion of juvenile labour in America, said that something like three-quarters of that labour appeared to be employed in agriculture. As this question was intimately connected with education, it would be exceedingly interesting if Mr. Jeans could give some explanation of how—whether by some system of half-time or otherwise—so large a proportion of juvenile labour in the United States, where there was supposed to be a magnificent educational system, could be so employed.

Mr. H. D. POCHIN desired to join Professor Levi and Mr. Howell in urging upon the Government the necessity of making public the truth with reference to these wage questions, for what a single individual could do towards obtaining such statistics was as nothing compared with what the Government might do. He did not believe that there was any desire to hide the facts of the case, but every department of Government had so much to do that unless a question of this kind was earnestly pressed upon them

from the outside there was little hope of improvement. He wished to protest against Mr. Howell's statement that no sooner did a man get a grey hair on his head than he was dismissed from his employment. There never was a time when such a proceeding was less the action of employers than at present. There was now greater consideration on the part of the master for his workman than in any past time, for all now knew that the interests of all classes were bound up together. Mr. Howell had also referred to *enforced* idleness, but the tendency on the part of the workmen to lesser hours of labour was never greater than in the present day. There was a difficulty in getting men to work not only on Monday, but also on Tuesday; and most manufacturers, particularly in busy times, were seriously inconvenienced because their men could not be induced to work with any degree of regularity. The difficulty of estimating the relative value of wages in different parts of the world was almost insuperable. The number of cold and wet days, even the constitution of different races of individuals, were important considerations. The spirit of the workman in the different workshops also affected the value of his work. Sometime ago he wanted a certain class of machine made, but he was told that they had better be obtained from America, because they could in that way be obtained more cheaply and of a better quality, as the American workmen would not tolerate bad workmen in their shops. The spirit in the English workshops was, as all knew, widely different to that. The legitimate way of increasing wages was that the workman should produce all that he himself consumed or its equivalent; then he might go on to produce more, and so add to the national wealth. If he did that he had a right to share that national wealth, and he was glad to believe that there was a natural law that secured to each worker a fair share in the wealth he produced. Unfortunately that law was, by restrictions, often prevented from working out its legitimate results.

Mr. R. PRICE-WILLIAMS entirely disagreed with the last speaker as to the want of spirit and educated skill of the English workman. Only on Saturday last, on going over the large locomotive works of Messrs. Beyer, Peacock, and Co., of Manchester, with Mr. Peacock, that gentleman pointed out an engine which he said had a remarkable history, which, in his, Mr. Price-Williams's, opinion, afforded a remarkable illustration of the great skill and unrivalled workmanship of the English mechanic. Mr. Peacock explained that some years ago he supplied some engines of this type for the Queensland railways. Complaints, however, reached him after a time that although the engines worked admirably themselves, they had a tendency to destroy the road; and, shortly afterwards, a pushing American locomotive builder who went there got an order to supply some locomotives, which are known in that country as of the Mogul type. The absence of any destructive effects upon the permanent way which resulted from the use of these Mogul engines was very marked, and further orders for them were given; but very soon grave complaints began to be made that these locomotives were all tumbling to pieces from bad workman-

ship, and the authorities again applied to Messrs. Beyer, Peacock, and Co., who, after investigating the matter and discovering the cause of the destructive effects of their engines upon the roads, modified their structure and design so as to obtain all the advantages of the Mogul engine, combined with the better workmanship and material of their own engine; the result being that the engine, of which this particular one was the type, was at once adopted, and that no complaint had ever been made since of these destructive effects upon the permanent way, and the American Mogul engine was fairly beaten out of the field. The fact must be admitted, in spite of what Mr. Pochin had said, that the high character and finish of the work of the English mechanic was still unrivalled throughout the world. The illustration Mr. Walford had given of the advantage which the Americans possessed in labour-saving appliances in manufacturing steel by the Bessemer process was singularly unfortunate, as those who, like himself and Mr. Jeans, had a practical knowledge of the manufactures knew very well that all these ingenious mechanical appliances were the invention of the great originator of the Bessemer process, and had largely contributed to its success.

Mr. WILLIAM MILLER having made a few remarks,

Mr. J. B. MARTIN drew attention to the fact that though the paper mentioned the discoveries of gold in California and Australia as having secured a greater abundance of the precious metals to all civilised nations, there was a large school of economists, with Mr. Göschel at their head, who held a direct contrary theory, and the late President of the Society held the same view. The purchasing power of gold was an important factor in the relative prosperity of nations. When he was in Montreal this year, he asked the Economic Section, when the vastly higher rate of wages in Canada as compared with England was spoken of, how it was that he had to pay ten cents for having his boots blacked, and five cents for a penny newspaper. He had not at the time had any direct answer to his question, but when on his return to England he had found on board the "Germanic" 200 steerage passengers, and when he read in the "Times" of the day on which he landed at Liverpool that the emigration for the first nine months of 1884 to Canada and the United States had fallen off in each case to the extent of 25 per cent. as compared with the corresponding period of 1883, he had thought that his inquiry was in some measure answered, that the effective purchasing power of wages was not by any means greater or less as the wages themselves might appear to be on paper.

Mr. JEANS, in replying, said he would not detain the meeting at any length after so full a discussion, and considering the lateness of the hour. Replying to Professor Levi, he had not referred to the subject of comparative taxation in different countries because his opinion was that his paper had already run to an inordinate length. He might, however, state that he had prepared a table

showing the amount of imperial taxation per head in the chief countries of the world, from which it appeared that England was the most heavily taxed, with the single exception of France, our total imperial and local taxation together being between 3*l.* and 4*l.* per head of the population. The taxation of the United States for imperial purposes was comparatively small, because there was no standing army to maintain worth speaking of. One or two speakers had rather extolled the progress made in textile industries in Germany at the expense of this country. He had not referred to the textile industries of Germany in his paper because he could not possibly cover the whole ground; but he might mention that an article which appeared in the "*Times*" some years ago stated, on the authority of figures supplied by Dr. de Leeuw, of Berlin, that in Saxony it required 5·9 hands to work 1,000 spindles, whereas the same work was done in England with 3·1 hands; the effect being that a factory with, say, 64,000 spindles could afford to pay English workers 16*s.* 10*d.* per week, against 11*s.* 10*d.* per week to Saxon workers, and still have an excess profit of 3,200*l.* a-year, notwithstanding the sufficiently well known fact that in Saxony longer hours were worked. As had been very properly remarked, the hours of work in different countries had a very important bearing on the labour question, but time did not allow of his pursuing the investigation so far. Briefly, however, he might state that in this country the hours of labour were shorter than in any other of which industrial returns were procurable, not even excepting the United States. He could not quite assign the reasons why juvenile labour was employed so much more largely in the United States than in our own country, but it was unfortunately the fact that large numbers were employed in the factories there under 10 years of age.

A cordial vote of thanks was given to Mr. Jeans for his paper.