

LOW PRICES, HIGH WAGES, SMALL PROFITS:—WHAT MAKES THEM?



THE minds of many persons have been and are greatly disturbed because there has been in recent years a great reduction in the prices of nearly all the leading articles of commerce, the principal decline dating substantially from the year 1873. This decline in prices began soon after the war in the United States, but the general decline in all countries on a specie basis may be dated from 1873.

By whatever standard prices are measured (and there are many carefully compiled tables), the average is found to be lower at the present time than at any period since a date anterior to the year 1850, in which year the great supply of gold from California, and a little later that from Australia, began to affect the volume of the money metals of the world.

In most of the discussions of the money question this great fall in prices has been treated as if it were a misfortune, and it is often held that any measure of legislation ought to be adopted which might tend to check it. Is not this a very partial and one-sided view of the subject?

Some one has wisely and wittily said that "it does not much matter what happens to the millionaire—how is it with the million?"

If it shall appear that out of this great reduction in prices the millions have gained higher wages; that hundreds of thousands of families have gained better homes and greater comfort in life; while those who have suffered temporary loss have been only the rich who have been incapable of adjusting themselves to the new conditions, or the unskilled poor who have been unable to grasp the greater opportunities for welfare which invention has offered them, then may we not come to the conclusion that diminished profits and low prices are merely the complement of higher wages and lower cost, and are, therefore, most certain indications of general progress from poverty to welfare, yet still leaving the problem open, how to help the unskilled poor?

It will be remembered that it has been stated that so far as the great mass of the people of this and of other lands are concerned, about one-half the cost of living is the price paid for the materials for food, the cost of food to common laborers who have families to support being as a rule much more than one-half their income.

The question of interest to those who as-

sume to be strictly "*the working classes*" is not so much what the price of the necessities of life may be, as it is how many portions of food, fuel, and clothing each one can buy at the retail shops in which they deal, and how good a shelter each one can procure for one day's or one year's earnings. In other words, what is, or what has been, the value of a day's labor when converted into the commodities which are necessary to existence?

If these so-called "working classes" have steadily gained in the purchasing power of their wages or salaries, while farmers, who number (not including farm laborers) 250 in each 1000, have also prospered during this period when prices have been falling and profits have been diminishing, then the economic history of the last 25 years may be presented in an entirely new aspect. In such case, instead of attempting to check the fall in prices by tampering with the standard of value or by other empirical devices "for making money plenty," it may be expedient to hold on to what has been gained and to fight it out on this line, even if several more years of so-called depression should follow this determination, these recent years of so-called depression having actually been years of greatest progress.

Since the end of the civil war in 1865, and yet more since the so-called panic of 1873, there has been greater progress in common welfare among the people of this country than ever before. It has been the period in which there has been the greatest application of science and invention to the production and distribution of food that ever occurred in any single generation in the history of this or any other country; and food is the prime necessity of material life.

In order to sustain this proposition, it is necessary to establish a standard of subsistence. This can be done with respect to the materials which are required for food, clothing, and fuel. Rent cannot be so surely included in this standard, because the conditions of shelter vary so much in different parts of the country and in different cities.

The cost of the materials for food, of materials for clothing, boots and shoes, and of fuel, probably represents about seventy per cent. of the cost of living on the part of well-to-do mechanics, railway employees, or of other persons in analogous occupations who may be considered in the average position of working people. All these elements of life have de-

clined very greatly in their prices in the period under consideration. In some regions rents have declined, in others they have been stationary; in crowded cities they have either advanced in some small measure, or else the apartments hired for a given sum of money have not been equal to those previously occupied. So far as I have been able to compare rents, however, either those paid to a landlord or the rental value of premises owned by the occupant, there has not been, on the average, much variation from the rule affecting commodities in the period under consideration.

The standard portions of food, cloth, boots and shoes, and fuel which are made use of in the subsequent computation of the purchasing power of a day's or of a year's wages, have been established in the following manner:

FOOD.

By comparing data gathered by myself with other data gathered by several State Bureaus of the Statistics of Labor, it has been fairly established that the average food-supply of mechanics and adult factory operatives in the Eastern and Middle States cost in 1880, '81, and '82 substantially 25 cents per day, and consisted of very nearly the proportions of different kinds of food given in Table A.

The consumption of dairy products, sugar, tea and coffee given, is probably greater than in other parts of the country; but if a deduction of 2 cents per day be made for this, it then becomes necessary to add 3 cents per day (probably more) to account for the known average consumption of wine, beer, and spirits. (60,000,000 at 3 cents per day average comes to \$657,000,000.) Recent computations put the cost of liquor to consumers \$700,000,000.

Although the actual consumption of food, cloth, and fuel may not in any single case have corresponded identically with these standards, yet it may be safely assumed that the proportions are correct, and that the variation in the prices of what has been actually consumed will have corresponded to the variation in the prices of these standard articles and quantities.

For convenience in computation the small quantities of the single ration of food have been extended so as to cover 400 portions, which may be taken as the consumption of one year by one adult, 35 rations being added for extras.

TABLE A.—Standard of a single day's ration, with its average cost in 1880, '81, and '82.

TABLE B.—Standard of 400 rations, or 1 year's supply for 1 adult with 35 extra rations.

It is assumed that the prices of meat, fish, and poultry, fresh or salt, will have varied substantially with the variations in salt and smoked meats, and as the prices of the latter are more uni-

formly quoted, the prices used in making up the general standard are those given for salt and smoked meats. In the same way the price of potatoes has been taken as a standard for the variation in the price of all green vegetable food or roots.

A.—ONE RATION PER DAY.		B.—400 RATIONS.	
½ to 1 lb. meat, poultry or fish, varying according to kind and quality, costing on average..	10	} 200 lbs. corned beef. 100 lbs. salt pork. 100 lbs. smoked ham. 100 quarts milk. 30 lbs. butter. 20 lbs. cheese.	
½ to ¾ pints milk.....	5		
1 to 1½ oz. butter.....		½	} 17 doz. eggs. 1 barrel flour. ½ barrel corn meal. 20 bushels potatoes. 80 lbs. sugar.
½ to ¾ oz. cheese.....			
1 egg every other day.....	2½	} 4 lbs. tea. 8 lbs. coffee.	
¾ to 1 lb. bread.....	2½		
Vegetables and roots.....	2 @ 2½	} \$6 worth assumed at all dates.	
Sugar and syrup.....	2		
Tea and coffee.....	1		
Salt, spice, fruit, ice, and sundries	1½ @ 2		
	25 cts.	\$100	

Standard portion of cloth for 1 year:	Standard of boots and shoes for 1 year:
10 yards medium brown cotton.	2 pairs men's heavy boots.
10 " standard gingham.	
10 " 36-in. bl'ched shirting.	Standard of fuel for 1 year:
20 " printed calico.	1½ tons anthracite coal, or its equivalent in bituminous coal or wood.
10 " 4-oz. woolen flannel, or worsted dress g'ds.	
5 " 16-oz. cassimere.	
5 " Kentucky jean-satinet, or light cassimere.	

In establishing the average cost of a day's portion of the above, the prices given in Vol. XX. of the U. S. Census, in 10 shops east and 10 shops west of Buffalo, 1860-1880, have been averaged for each year designated. These prices have been verified from other sources of information. Prices of dry goods have been verified fully. Prices for 1885 and '86 have been derived from typical establishments and from market reports. The average of 1885 and '86 was probably less than the estimate used.

CLOTHING.

By a computation made by the undersigned when engaged in the compilation of the Census of the cotton manufacture of the United States in 1880, it appeared that if all the fibers of cotton, wool, silk, and flax, imported or raised, were carried through the factories and then converted into clothing, carpets, and other forms for final use, with the imports of textile fabrics added, the average consumption of textile fabrics by the people of this country in that year was substantially \$30 worth per head, of which about \$25 worth was for clothing. It being impossible to set up a standard of the exact cost of clothing, certain quantities of cotton and woolen cloth have been taken which are a little above the average consumption of the whole country. In a final computation, cloth is converted into clothing at the ratio of three parts materials, and two parts for manufacturing and distributing.

In this computation I have made great use of the XXth Volume of the United States Census. It was prepared by Mr. Joseph D. Weeks, and is of the greatest value in statistical research.

BOOTS, SHOES, AND FUEL.

THE standard of boots and shoes, and of fuel is of necessity somewhat arbitrary. It has been set at two pairs of men's heavy boots, as

the equivalent of a customary supply, and one and one-half tons of coal per adult per year; it being assumed that, as the prices of these quantities have varied, actual use and cost will have varied.

The quantities assigned to this specific standard of subsistence have risen and fallen in the following proportions, the figures representing so many cents per day for each standard portion, and the lines representing the relative variation at different periods.

Cost of standard portions of materials for food, for clothing, boots and shoes, and fuel, per day, in each year as designated.

Materials for Food.

1860	22 $\frac{88}{100}$ cts.	
1865	38 $\frac{38}{100}$ "	
1870	33 $\frac{34}{100}$ "	
1875	29 $\frac{10}{100}$ "	
1880	25 $\frac{12}{100}$ "	
1885 } 1886 }	22 cts. Est.	

Materials for Clothing.

Add two-fifths for conversion into Clothing.

4 $\frac{51}{100}$ cts.		6 $\frac{31}{100}$	
10 $\frac{44}{100}$ "		14 $\frac{61}{100}$	
5 $\frac{07}{100}$ "		7 $\frac{10}{100}$	
4 $\frac{38}{100}$ "		6 $\frac{13}{100}$	
4 $\frac{12}{100}$ "		5 $\frac{76}{100}$	
3 $\frac{60}{100}$ " Est.		5 $\frac{4}{100}$	

Boots and Shoes.

1860	1 $\frac{60}{100}$ cts.	
1865	2 "	
1870	1 $\frac{75}{100}$ "	
1875	1 $\frac{87}{100}$ "	
1880	1 $\frac{75}{100}$ "	
1885 } 1886 }	1 $\frac{60}{100}$ " Est.	

Clothing and Boots and Shoes.

Fuel.

7 $\frac{81}{100}$ cts.		2 $\frac{06}{100}$	
16 $\frac{61}{100}$ "		4 $\frac{87}{100}$	
8 $\frac{86}{100}$ "		3 $\frac{37}{100}$	
8 "		3	
7 $\frac{51}{100}$ "		2 $\frac{25}{100}$	
6 $\frac{64}{100}$ "		2 $\frac{60}{100}$ Est.	

It is doubtless true that the goods reported upon in the several shops from whose reports the prices have been derived, may have varied somewhat in quality; but the questions put by Mr. Weeks were in such form that in nearly every case the prices are given for specific qualities of each kind of food, as for instance: Flour, grade "extra family"; coffee, "Rio, roasted"; sugar, several grades — I have selected a medium; tea, "Oolong, or good black," etc., etc. These prices, taken from 20 shops — 10 east and 10 west — have been averaged, and the results compared with other price-lists, many of which the writer has himself procured.

It may be objected that this standard portion is only the one which is customarily consumed by each adult in the families of well-to-do mechanics or factory operatives in the Eastern or Middle States, and that it may not be a fair measure of those who are above this class or of those who are much below them. This may be admitted; but nevertheless all prices of the necessities of life must have varied substantially as these standard portions have varied. Moreover this final fall in the prices of products at their final point of consumption could not have occurred had not the prices of the metals, of the machinery, and of the whole mechanism of production and distribution also fallen. Sometimes prices of invested capital have fallen even in greater measure than the prices of the products. It is only here and there that any important article like timber can be found, which having become more scarce, has either maintained its price throughout the period, or is even a little higher now than it was in 1860.

If, then, all prices have fallen and all profits have diminished while wages have risen, each subject to temporary fluctuation and variation, must we not seek for deeper causes for the changes in the conditions of society and in the relations of men to each other than are commonly assigned in the explanation of such phenomena?

I now submit adequate proof of the facts. The subsequent table gives the purchasing power of wages at different dates, when converted into standard portions of food, cloth, and fuel as established.

The quantities represented in these tables are assumed to have been established on the basis of actual consumption of a well-to-do mechanic in New England in the period of 1880, '81, and '82. If we convert the money assigned to each portion of food, fuel, clothing, etc., into 400 portions corresponding to 1 year's consumption, with a margin of 10 per cent. for extras, we get the following results:

COST FOR ONE YEAR.

ONE PERSON.

Food for one adult	\$100
Materials for clothing	16
Boots and shoes	7
Fuel	9

FOUR PERSONS.

Food for four adults *	\$400
Materials for clothing	64
Boots and shoes	28
Fuel	36

* Or for man and wife, one child over 12, and two under 12.

Gain in the purchasing power of wages, measured by the number of portions of the materials for food, clothing, boots and shoes, and fuel, which one year's work would buy at different periods: 300 working days to one year. Each portion consisting of the same quantities and corresponding to the daily consumption of mechanics in New England and in the Middle States, as determined by close inquiry on the part of Bureaus of Labor Statistics, and of the undersigned.

CLASS I.—SPECIALLY SKILLED MEN: FOREMEN, OVERSEERS, BOSS BLACKSMITHS, CARPENTERS, ETC., CUSTOMARILY EARNING \$3.00 TO \$5.00 PER DAY AT THE PRESENT TIME.

Year.	Average, per day.	Average, per year, 300 days.	Cost of day's portion.	Purchasing power in number of portions.
1860	\$2.45	\$735.00	30 $\frac{95}{100}$ cts.	2374
1865	3.57	1071.00	55 $\frac{69}{100}$ "	1920
1870	4.34	1302.00	43 $\frac{53}{100}$ "	3000
1875	4.14	1242.00	38 $\frac{69}{100}$ "	3210
1880	4.14	1242.00	33 $\frac{24}{100}$ "	3737
1885 } 1886 }	Probably higher than in 1880		Est. 30 cts. or less	Not less than 4000

The portions consist of uniform quantities of the same kinds of food, cloth, etc., and fuel bought at retail prices. The wages from 1860 to 1880, inclusive, are averaged from a large number of returns contained in Vol. XX. of the U. S. Census, compiled by Joseph D. Weeks.

CLASS II.—AVERAGE MECHANICS, ENGINEERS, BLACKSMITHS, CARPENTERS, MACHINISTS, AND PAINTERS CONNECTED WITH ESTABLISHMENTS REPORTED IN VOL. XX. OF THE CENSUS 1865 TO 1880 INCLUSIVE.

Year.	Average, per day.	Average, per year.	Cost of portion.	Purchasing power.
1860	\$1.56	\$468.00	30 $\frac{95}{100}$ cts.	1572
1865	2.34	702.00	55 $\frac{69}{100}$ "	1261
1870	2.43	747.00	43 $\frac{53}{100}$ "	1716
1875	2.29	687.00	38 $\frac{69}{100}$ "	1776
1880	2.26	678.00	33 $\frac{24}{100}$ "	2040
1885 } 1886 }	Est. 2.40		Est. 30 cts. or less.	Est. 2400

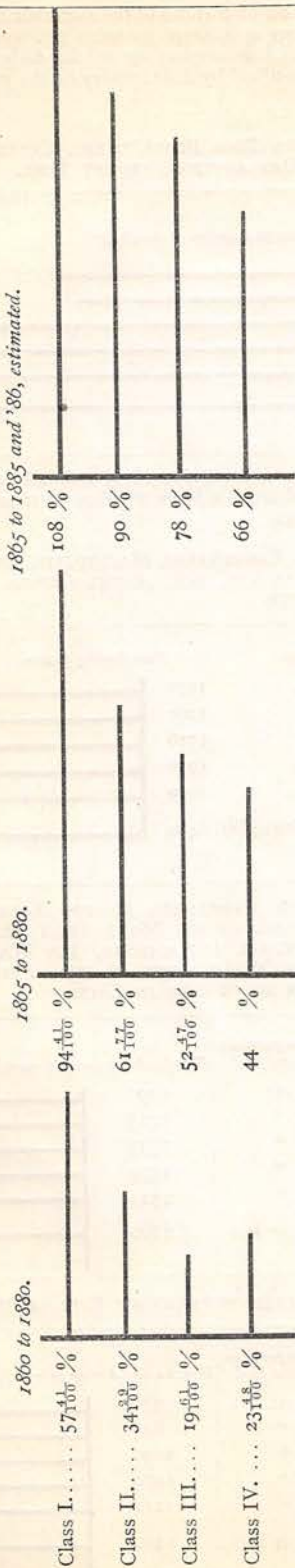
CLASS III.—ALL THE OPERATIVES, EXCEPT FOREMEN AND OVERSEERS, IN 100 ESTABLISHMENTS REPORTING THE WAGES OF THEIR WORKING PEOPLE UNDER MORE THAN 1200 SEPARATE TITLES: BRICKS, MARBLE, FURNITURE, AGRICULTURAL IMPLEMENTS, TIN WARE, STOVES, BOOTS, HATS, CARS, WAGONS, FLOUR AND SAW MILLS, IRON, PAPER, AND TEXTILES, EMPLOYING MEN, WOMEN, AND CHILDREN, FROM 20 TO 2000 IN EACH.

Year.	Average, per day.	Average, per year.	Cost of uniform portions, food, cloth, and fuel.	Purchasing power in number of portions.
1860	\$1.33	\$399.00	30 $\frac{95}{100}$ cts.	1290
1865	1.88	564.00	55 $\frac{69}{100}$ "	1013
1870	1.94	582.00	43 $\frac{53}{100}$ "	1337
1875	1.77	531.00	38 $\frac{69}{100}$ "	1372
1880	1.71	513.00	33 $\frac{24}{100}$ "	1543
1885 } 1886 }	Est. 1.80		Est. 30 cts. or less	1800

CLASS IV.—LABORERS, COMPUTED SEPARATELY, CONNECTED WITH ABOVE ESTABLISHMENTS.

Year.	Average, per day.	Average, per year.	Cost of uniform portions, food, cloth, and fuel.	Purchasing power in number of portions.
1860	\$1.01	\$303.00	30 $\frac{95}{100}$ cts.	980
1865	1.56	468.00	55 $\frac{69}{100}$ "	840
1870	1.58	474.00	43 $\frac{53}{100}$ "	1090
1875	1.38	414.00	38 $\frac{69}{100}$ "	1070
1880	1.34	402.00	33 $\frac{24}{100}$ "	1210
1885 } 1886 }	Est. 1.40		Est. 30 cts. or less	1400

INCREASED PURCHASING POWER OF ONE YEAR'S WAGES COMPARED BY PER CENTAGE OF GAIN ON EACH CLASS.



Computed by EDWARD ATKINSON.

Boston, Mass., Dec. 27, 1886.

The cost of making and trimming, or of converting the cloth into clothing, would be for converting these specific quantities:

For one adult	\$10
For four adults	\$40

These elements constitute on the average seventy per cent. of the expenditure of a family such as has been taken as an example. We may add

For rent . . . eighteen to twenty per cent. . .	\$37.50	\$150
For sundries . . . twelve to ten per cent. . .	20.50	82
Totals . . . per adult, \$200; per family, \$800		

If we take the example of a mechanic sustaining himself, wife, one child over twelve years, and two under twelve counted as one adult, an average family of five persons counted as four adults, an expenditure of \$800 per year would call upon the head of the family to earn \$2.67 per day for three hundred working days in the year.

It will be remarked that this standard has been reached *theoretically*, on the basis of facts derived from observations entirely independent of the actual statistics of the family expenditure gathered by Commissioner Carroll D. Wright, as Chief of the National Bureau of Labor Statistics, and also of Massachusetts. On comparing these theoretic estimates with these statistics, they are found to correspond so closely with the actual facts gathered from many families, as to sustain the substantial accuracy of the proportions of the cost of living, the price of food being exactly one-half.

In the returns which have been made use of in compiling the tables given in this treatise, there are doubtless reports of prices of goods which do not exactly correspond to others either in kind or quality; but so many returns have been averaged as to eliminate this cause of error. I have made many computations on single returns of prices in special places procured by myself, and I find that the proportional variations correspond so closely to the average of all as to establish the standard conclusively.

In fact, the reduction in the cost of subsistence and the increase in the purchasing power of wages in the East have been greater than in the West, and greater than the average of the whole country, doubtless owing to the equalizing force of the railroads in diminishing the cost of food. I may give one example for which I have collated all the figures myself in order to verify the compilations of the Census. In this example I have taken the year 1866 as a starting point, and a cotton-mill as the example. It is not a fair year to show an average in other arts, because the conditions of the cotton manufacture were very uncertain dur-

ing that year; and it was also in the year 1866 that the most malignant effect upon prices and wages, worked by the substitution of legal tender notes in place of coin, was experienced in the United States. I have, however, selected a year in which the work was continuous during that year as well as during the year 1885.

The average earnings of all the hands in the factory through the year 1866 were 83 cents per day.
In 1885.....103 " " "

The product of each hand in pounds of cloth was in 1866, 7 pounds per day.
In 1885.....13.34 " " "

The cost of labor in the pound of cloth was in 1866.....11.85 cents.
In 1885 7.67 "

The cost of the standard portion of food, clothing, and fuel (substituting three cords of wood for the customary portion of anthracite coal, because this factory was in a position where wood at that time was cheaper) was

Daily portion of food, clothing, and fuel in 1866, cost.....57.82 cents per day.
In 1885.....30.97 " " "

The purchasing power of 300 days' wages converted into these standard portions was in 1866..... 430 portions.
In 1885..... 1000 "

It will be remembered that the price of food is about one-half the price of life to the class of persons represented in this example. Other examples have been computed by myself from private data in respect to the condition of operatives in woolen-mills and machine shops. They show the same law; but as the condition of the woolen-mill and the machine shop was somewhat better in 1866 than that of the cotton-mill, the ratio of progress is more nearly that of the average of the whole country than is shown in this particular example.

One very curious point is brought into notice by an analysis of the average food ration of the American workman. All the pork could be spared, and yet the daily ration would be more than ample. The waste of this country is an excess of fat rather than an excess of any other part of the food consumed. We have often heard "the American frying-pan" denounced; but this is, I think, the first time that it has been subjected to a scientific condemnation.

In a rough and ready way it takes five pounds of Western corn to make a pound of pork. Even the hogs do not consume their whole ration; they waste a part of it. The proportion is substantially one thousand pounds of Indian corn to a barrel of pork weighing two hundred pounds. In this conversion nearly all the

starch and all the protein are wasted, and the fat which is left is not required for use.

The necessary deduction is this, that the conversion of corn into pork is an absolute and total waste of nutritious food. Far better that corn should be converted into beef, or even burned for fuel (often a very economical expedient for settlers), rather than to be expended in this way.

A curious question arises in this connection. If the world were convinced that the Jews were right, and that pork ought not to be eaten; or if the American world were convinced that all the pork that is eaten is wasted, what would be the effect on the American farmers?

Having submitted this part of the problem to Professor Atwater, he makes the following remarks thereon:

"Taking your figures for quantities of shelled corn and dressed pork, and the most reliable data I can find for their composition, I obtain the following figures:

GAIN AND LOSS OF NUTRIENTS AND POTENTIAL ENERGY IN CONVERSION OF CORN INTO PORK.

	NUTRIENTS.			POTENTIAL ENERGY.
	<i>Protein.</i>	<i>Fats.</i>	<i>Carbo-hydrates.</i>	
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Calories.</i>
In 1000 lbs. of corn ..	100	45	680	16,400,000
In 200 lbs. of pork ..	18	85	3,900,000
Loss or gain ...	82 loss	40 gain	680 loss	12,500,000

"In other words, the fat is increased by 40 pounds, and to offset this there is a loss of 82 pounds of protein and 680 pounds of carbohydrates. Estimated in potential energy, the loss makes over three-fourths of the whole.

"According to the best data at hand, and your ration agrees with them, our ordinary dietaries contain an excess of carbohydrate (sugar, starch, etc.) and a very large excess of fat. The 'condensing of corn into pork,' which we hear of as 'useful to save cost of transportation and handling,' means—

"*First.* Practically throwing away a lot of protein, the most valuable of the food ingredients, and with it a large amount of carbohydrates.

"*Second.* The conversion of part of the other nutrients into fats, so as to increase our already great excess of this material."

This may seem a somewhat trifling matter. Let us see.

Assuming that the product of this country, at its market value for final consumption or export, cannot exceed \$200 worth per person, \$600 worth for each group of three of whom one is occupied for gain, or \$1000 worth for each average family of 5 persons, it may be assumed that not exceeding 10 per cent., or \$20 worth a year per capita, can be saved, and added to the capital of the country, how-

ever such capital may be owned individually; 5 to 6 per cent., or \$10 to \$12 a year, must be set aside to meet all forms of taxation, national, state, and municipal. There remains \$168 @ \$170 a year, which constitutes the wage fund, it being manifest that the source of all wages, earnings, taxes, and profits must be the annual product, whatever that product may be.

If these sums per year be reduced to portions per day, the wages or earnings of each person amount to a fraction over 46 cents per day, or \$1.38 for every day in the year, including Sundays, secured by one person in three of the population who constitute the working forces. Profits amount to a fraction under 5½ cents per day; taxes to a fraction over 3 cents. The cost of the excess of fat and sugar in the standard ration is 7 cents out of 25. If this were saved and applied to shelter, the housing of the working people would be solved.

There cannot be more to be divided than all there is. The whole question, therefore, of relative welfare and poverty consists in the manner in which this product is divided.

The only way in which any great gain can be made is by increasing the quantity of product while decreasing the amount of capital and the hours or intensity of the work required in production, or else saving what is now wasted. Any other method of distribution that could be brought about might not very greatly improve the condition of any very large number of persons. This will be made apparent by a few figures.

If the sums given constitute all the money's worth there is to be divided, then by so much as some gain more must others gain less. The limit of all that is produced is the limit of all that can be divided.

The working group of this country, as I have stated, is substantially a group of three. One person in each three is occupied for gain, sustaining two others. If that part of the product which is now saved were divided equally among those who do the work, it would add only about 15 cents a day to the income of each one, or \$54.75 each year. In the present population of about sixty million, the number who are engaged in gainful occupation is twenty million. If the whole sum saved and added to capital were divided among this force equally at \$54.75 each, it would represent a little more than \$1,095,000,000.

Suppose this sum now saved were equally divided,—is it not true with regard to a very large proportion of those who do the work that the measure of their income is also the measure of their expenditure? Could this equal division then be made without leading to an increased consumption rather than to addi-

tional savings on the part of the many? If so, the next year's product of the whole country would suffer for lack of capital. It sounds like a paradox, but it may nevertheless be true that the faculty for "making money," as it is called,—that is to say, the instinct that leads to accumulation on the part of the few,—is absolutely necessary to the comfortable subsistence of the many. Disparity in the possession and direction of capital is apparently necessary to its effective use—a big capital in the hands of a master is like a big steam-engine directed by a competent engineer: each compasses three or four times as much product as the small capital held by many persons, or the small steam-engines, each wasting fuel, can accomplish. It may not be the disparity between rich and poor which is the sole cause of discontent.

The disparity in the conditions is very much greater, and is increasing more rapidly among those who constitute the "working classes" themselves, in the narrow use of that term, than any possible disparity between the capitalist classes and the working classes can ever be; that is to say, the disparity of the aggregate income, class by class, is greater.

The capitalists are working under an imperative law of diminishing profits. The workmen who do the work intelligently and skillfully are progressing under an imperative rule by which their wages are increased while the purchasing power of their wages is yet more increased.

Is there not perhaps a more subtle but very potent cause of discontent disclosed by the great disparity in the progress of working people themselves to the exclusion of capitalists, than can be found in the disparity of fortunes or in the possession of capital saved?

In the following table the relative progress of four classes whose condition has been fully analyzed is graphically pictured, each class compared to the other by the relative percentage of their gain since 1860.

No. I. Foremen, overseers, boss blacksmiths, and carpenters or other workmen of special skill and aptitude.

No. II. Average mechanics, engineers, blacksmiths, carpenters, machinists, painters, and the like.

No. III. Average workmen or women, in 100 factories or workshops listed under more than 1200 titles,—bricks, marble, furniture, tools, stoves, boots and shoes, hats, cars, wagons, textiles, iron works, paper-mills, etc.

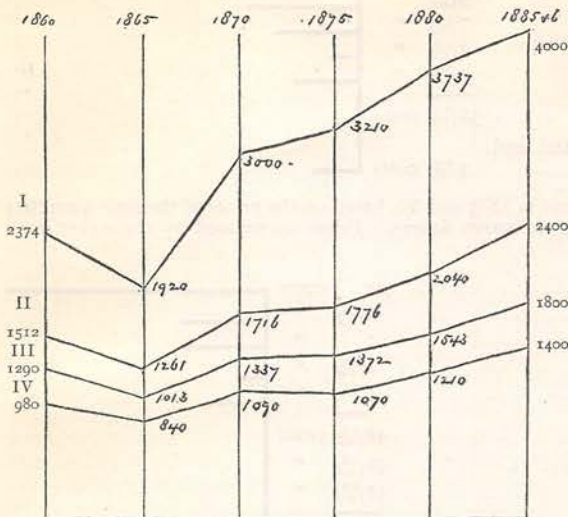
No. IV. Common laborers connected with the same establishments.

The variation in the respective condition in these classes is shown by the number of portions of food, fuel, boots, and materials for clothing which one year's earnings would purchase in each of the years designated.

The actual working of these changes can

be better observed by a different form of diagram which gives the facts in relation to all the mechanics covered by class II.

The malignant effect of war and paper



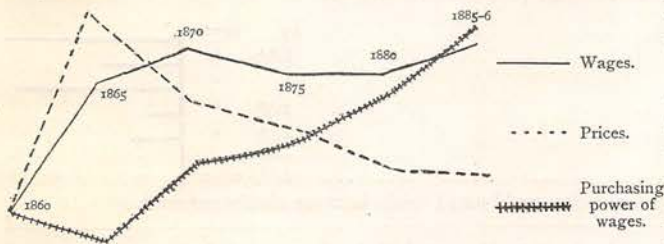
to great numbers of common laborers. One of the penalties which society must pay for the application of science and invention to the useful arts is this temporary displacement of unskilled laborers from the occupations in which their work had been previously required, but which is no longer required when some new machine or improvement renders it unnecessary.

On the other hand, without these applications of science to agriculture and to manufactures, the normal increase of population would without question tend to outrun the means of subsistence. It therefore follows that by their application, while the few are for a time left behind in the race, the many gain in welfare; the means of subsistence rapidly outrun the increase of population, and the many are thus enabled to enjoy better and better conditions of life.

Thus the problem of "progress and poverty" marches alongside the actual progress from poverty. This problem of "progress and poverty" calls for the urgent attention of the student and the statesman in order to abate the great disparity of condition which becomes more conspicuous the more the general progress is assured. This special branch of the subject cannot be treated within the limits of the present treatise, but may be taken up at a future day.

money is shown by the rapid rise in prices, while wages slowly followed.

After the war wages fell slowly, but prices fell rapidly.



On the resumption of specie payments, wages again began to rise — prices continued to fall, and in 1885-6 the purchasing power of a day's work was greater than it ever had been before.

In order that the full import of these figures may be comprehended, the following table is given including a computation of rent on the best data which can be found.

It will also be observed, however, that while work has been continuous since 1873 or 1865 for all men of special skill and aptitude (with very rare exception for some short and exceptional period), and while work has also been continuous and well paid for every intelligent mechanic or artisan who has chosen to control his own affairs and to make his own bargains, it has been much less continuous for many classes of factory operatives of a lower grade, and it has been absolutely intermittent with respect

We will now take up some of the theories which have been set up in the endeavor to explain the fall in prices since 1873. Subsequent to the year 1850, and either accompanying or perhaps caused in part by the very sudden and very great addition of gold to the volume of the money metals of the world, there was a great advance in the prices of all the necessities of life, subject, of course, to temporary fluctuations. This period of general advance in prices culminated in the years 1872 and 1873, reductions in the prices of cotton and of some other articles having begun before. Since 1873 a great and general reduction of prices has taken place the world over. What has been called depression has been more common than activity in commerce. These long periods of depression have affected nearly all commercial and manufacturing countries alike, without much apparent regard to their system of taxation; to their standard of value, whether it has been based on gold only, on silver only, or on both metals; or whether the standard of value has been a paper substitute for true money.

By a comparison of the average of all these elements of the cost of living, rent being computed and estimating "sundries" at 10 per cent. of the whole, the relative importance of each element may be comprehended.

1860 to 1880 inc. census data verified by other authorities.

Food, per day.....	22 ⁸⁸ / ₁₀₀ @ 38 ³⁸ / ₁₀₀ , average	29 ⁸³ / ₁₀₀ cents	
Clothing, per day.....	7 ⁶⁴ / ₁₀₀ @ 16 ⁶⁴ / ₁₀₀ "	9 ⁷⁷ / ₁₀₀ "	
Rent, per day.....	6 ⁶⁰ / ₁₀₀ @ 8 ⁴⁷ / ₁₀₀ "	7 ⁷³ / ₁₀₀ "	
Fuel, per day.....	2 ⁵⁰ / ₁₀₀ @ 4 ⁸⁷ / ₁₀₀ "	3 ¹⁰ / ₁₀₀ "	
Sundries, per day.....		5 ⁶⁰ / ₁₀₀ "	
Total.....		56 ⁰⁴ / ₁₀₀ cents	
Proportion of rent paid on land, assuming house and land equal value.....		3 ⁸⁶ / ₁₀₀ cents	

Elements of the cost of living in New England in 1885 and '86, based on the prices of the same quantities of the same articles computed above, mainly from census figures. Prices ascertained by the writer on a narrower field than that covered by the census.

Food, per day.....	22	cents	
Clothing.....	6 ⁶⁴ / ₁₀₀	"	
Rent.....	7	"	
Fuel.....	2 ⁵⁰ / ₁₀₀	"	
Sundries.....	4 ²⁴ / ₁₀₀	"	
Total.....	42 ³⁸ / ₁₀₀	cents	
Average, 1860 @ 1880, inclusive.....	56 ⁰⁴ / ₁₀₀	"	
Estimate, 1885 and 1886.....	42 ³⁸ / ₁₀₀	"	
Total reduction in 1885-6.....	13 ⁶⁶ / ₁₀₀	cents	

According to Prof. Atwater's analysis, the ration of food made use of in the above computations is 40 per cent. in excess of what is needed. All the pork, and one-half the sugar or one-half the potatoes could be spared. This reduction in the quantity of food would reduce the present cost of this ration from 22 to 15 cents per day. If the sum thus saved in food were expended for shelter, the whole question of providing better dwelling places might be solved. On this basis the proportions would be:

Food, per day.....	15	cents	
Clothing, per day.....	6 ⁶⁴ / ₁₀₀	"	
Rent.....	14	"	
Fuel.....	2 ⁵⁰ / ₁₀₀	"	
Sundries.....	4 ²⁴ / ₁₀₀	"	
Total cost of subsistence per day.....	42 ³⁸ / ₁₀₀	cents	

The importance of the food question could not, I think, be more clearly enforced.

It happens that during this period, dating from 1873, all the important changes in legislation respecting legal tender have occurred, yet the great international commerce of the world has proceeded in its customary way, because it is not possible to apply acts of legal tender to international exchanges; therefore this branch of commerce has been conducted on a solid basis of a given weight of the metal gold. But notwithstanding the stability of the gold standard of international commerce, great fluctuations have occurred, and periods of depression have affected international commerce as well as the domestic commerce of many countries.

less tended to the use of gold as the unit of value of full legal tender among the so-called civilized countries of the world. Yet all these changes combined have required the substitution of gold for other forms of money only in the bank reserves of Germany and in the sub-treasury of the United States. Silver has not been demonetized anywhere. It is still money in a true sense in England, Germany, and France, as well as in India, Africa, and South America. The only change brought about by legislation has been in the substitution of a single kind of money as full legal tender, for two kinds.

Since 1873, Germany has displaced silver from its function of legal tender; the Latin Union soon ceased the coinage of silver; the United States have resumed specie payment upon a gold basis; Italy has also resumed specie payment. All these changes have doubt-

But it has been assumed by many writers of repute that these changed conditions in acts of legal tender must have caused a steady and slow, but unceasing appreciation in the value of gold as compared to all other commodities, silver included.

On the other hand, it is held by many writers of repute that the vast store of gold which

has been added to the money metal of the world since 1850 has not only actually depreciated gold, but has also caused a yet greater depreciation in the value of silver, under the well-established rule that a substitution of a better article for common use may displace a substance of a poorer kind, and may cause the latter kind to lose a part of its value, even if the product of the latter be very much less in proportion than that of the former.

Such are the facts in regard to gold and silver. The addition of gold since 1850 has been vastly greater than the addition of silver.

The computed production of gold, 1849 to 1884, inclusive, has been \$3,882,975,000. That of silver, \$2,250,375,000.

This reference to the money metals is secondary to the main purpose of calling attention to an entirely different class of price-making factors. Under the conditions which have been presented, the battle of the standards has been waged with great virulence; but, perhaps, in consequence of this contest too little attention has been given to the really great forces which have been in action, and which have caused the reduction in prices which are so apparent.

The discussion of what I call the price-making factors will be mainly limited to the conditions which prevailed in the United States. For this reason, since 1865 there has been no war and no great preparation for war to alter the influence of the forces which make for peace and plenty. In Europe, on the other hand, actual wars, or enormous preparations for war, have altered all the conditions.

The change in prices in this country since 1860 must, of course, be in part attributed—

First. For a limited period to the forced circulation of paper substitutes for money which depreciated in value.

Second. To the restoration of the value of the previously depreciated paper to the standard of the only legal unit of value in this country,—to wit, the dollar made of gold.

No writer or observer of any repute has ever contested the fact that the rapid substitution of legal-tender notes for coined money always causes the depreciation of such notes and an increase in prices, as will be made apparent in the diagram previously given.

This sudden change in the standard of value is very different from the slow and steady addition of a very small annual percentage of precious metal to the previously existing stock, however large the volume of such addition of metal may appear to be when computed separately, year by year.*

In the tables which I have given, the malig-

nant effect of the substitution of depreciated legal-tender notes for true money is made apparent by the much more rapid rise in prices than in wages or earnings from 1860 to 1865, thereby greatly diminishing the purchasing power of labor. Since that difficulty has been surmounted in part or wholly, the purchasing power of labor has greatly increased, gaining steadily the nearer the specie standard has been attained, and gaining yet more steadily the more closely it has been adhered to.

It may well be asked, if the reduction in the prices of the necessities of life could be attributed to a scarcity of gold, would not wages or earnings—that is, the price of labor—have been reduced in the same proportion?

May it not be held that labor in the concrete form of commodities, or, as we might say, in the *passive* form of commodities, could not be reduced in price by any such cause as a scarcity of gold without labor in the *active* form of work in the production of commodities being also reduced in price? If the true cause of the reduction in prices has been an appreciation or rise in the value of the metal gold, would it not of necessity have happened that the price of labor would have been affected in the same way? Would not the price of real estate have also been affected in the same way?

Again, if the cause of the reduction in prices had been an increased scarcity of gold, would not capital, when measured by the gold standard, have been able to secure to itself a constantly increasing rate of interest or income?

Now it happens that, in the United States, in so far as the specie standard of value has been departed from has the purchasing power of labor become less, while the earning power of capital has become greater; conversely, in the exact measure that the specie standard has been adhered to and sustained has the purchasing power of labor become greater, and the earning power of capital less.

Important as the settlement of the contest between those who sustain the double standard of gold and silver with the advocates of the single gold standard admittedly is, yet it is held that the battle of the standards cannot be settled without a full consideration of all the other factors which tend to alter prices to which reference is made in this article.

Although the war of the Rebellion required the work directly or indirectly of one in three of all men of arms-bearing age throughout the country, yet during this period there was no decrease in the production of articles necessary to subsistence, with the single exception

year by year to the existing volume according to the estimates of Henri Cernuschi.

* It has been for many years about half per cent. of gold and half per cent. of silver, which has been added

of cotton. This fact gives evidence of the vast progress which must have been made in the application of science and invention to all the useful arts. The abnormal demands of war counterbalanced in some degree the marvellous influences of the substitution of paper promises for true money; yet the prices of all commodities advanced very rapidly, while wages advanced much more slowly.

After the war, production gained immediately and enormously on population in respect to food, fuel, metals, and fibers. Wages ceased to advance in rates by the measure of money, but the money ceased to depreciate. The armies of both parties in the conflict were absorbed in the pursuits of industry within less than a year from the end of the war. In spite of this increase in the supply of labor, as soon as the policy of the government began to tend toward the resumption of specie payments, on or about 1870, although the prices of both commodities and labor began to decline in their nominal rates, yet, on

the other hand, the purchasing power of wages — that is, the absolute wages of labor — began to increase with great rapidity. The value of a day's labor to him who exerted it, yielded more and more of the necessities and comforts of life as the years went by. Presently wages began to advance again, but prices continued to decline.

In a previous number of *THE CENTURY*, I have given a table showing the increased product of railway mileage and of property insured against fire between 1865 and 1885. Objection has been taken to the date of 1865 as the starting-point, upon the ground that in that year the country had not surmounted the difficulties and retardation of the civil war. In the year 1870, however, all the causes of retardation growing out of the war had been removed, and the country was fairly headed toward the resumption of specie payments which took place on the 1st of January, 1879.

A table showing our progress since 1870 is therefore given now:

GAIN IN POPULATION, PROTECTION, WEALTH, AND SAVINGS 1870 TO 1885 AND ON SOME ITEMS TO 1886.

To		
1885	Population	48
1885	Production of grain	85
1885	Consumption of cotton	86
1885	Consumption of wool	88
1885	Production of hay	100
1885	Deposits in savings-banks of Massachusetts	102
1885	Production of cotton	108
1886	Deposits in savings-banks of Massachusetts	115
1885	Production of iron	143
1885	Insurance of property against loss by fire	160
1885	Miles of railroad	168
1886	Miles of railroad	192
1886	Production of iron	200

In considering these relative gains, it will be observed that they represent a constant gain in the means of subsistence over population — that with the exception of the increase in personal wealth, which is indicated by the increase in the amount of property insured against loss by fire, they represent the progress of the million in the means of common welfare rather than of the millionaire in personal wealth, and that they give testimony to the beneficent law of progress *from* poverty.

While wages have risen, the earning power of capital has decreased.

The actual reduction in the earning power of capital, considered simply by itself, may be represented by the current rate of interest; the discount on the very best commercial paper at four or six months' date at different periods may be taken as a standard of the actual earning power of capital.

Prior to the financial panic of 1857, almost all the staple manufactures of this country were sold on 6, 8, 10, and sometimes 12 months' credit. After the commercial panic of 1857, and up to 1861 at the opening of the war, the current credit was four months. During the war, and up to about 1870, the traffic of the people was mainly conducted on a cash basis,

personal credit being rendered very uncertain by the variation in the value of paper substitutes for money. The instruments of exchange consisted of the depreciated notes of the United States. Bills of goods were rendered on ten to thirty days; but commercial notes disappeared almost wholly from the market.

Since 1870 there have been many variations in the customs of trade. In some kinds of business, notes have been given for actual purchases; in others none such have been given, but money has been borrowed in other ways; as, for instance, the large manufacturing corporations of the east have borrowed their working capital upon notes of the corporation, indorsed or guaranteed either by their officers or by the commission houses selling their

goods, such notes being negotiated in the open market at four or six months, or placed in savings-banks.

From 1848 to 1860 the writer kept a record of transactions by himself or by his associates in manufacturing corporations. The average rate of discount paid in the open market by the corporations enjoying the highest credit during this period was eight per cent., subject to very considerable fluctuations. From 1860 to 1869, inclusive, the rates of discount varied greatly with the circumstances of each case. The war and the continued issue of legal-tender notes rendered any standard of little moment. Railway corporations issued bonds at long date, at rates of interest from 7 to 8 per cent.: even as high as 10 per cent. was paid by railroad corporations of great strength and sound credit. In 1870 the slow restoration of specie payment began. Up to 1873, the year of panic, the rate of interest on the best manufacturing notes was on the average six and one-half per cent.

After the panic of 1873 ended, up to the 1st of January, 1879, five per cent. was the rate. Since the restoration of the specie standard at the latter date, down to the present time, the fluctuations in the rate of discount on the very best commercial notes have been 3 to 5 per cent.; and by the actual record of a broker doing a very large business, they have averaged 4 per cent. on 6 months' paper.

By the kindness of Mr. Lyman J. Gage, of Chicago, I have obtained the rates of discount on commercial paper at that point. They are about the same in their proportion, having been reduced from an average of 10 per cent. or over, to an average of 5 per cent. or less between the dates 1860 and 1886. On Western farm mortgages the change has been much greater. Twenty-five years ago rates as high as 25 per cent. were paid on mortgages of Western land, on what has proved to be excellent security. The rate now charged is seven per cent. and even less.

This immense abundance of capital seeking investment, and the equalization of the rates of interest between the East and the West, may be attributed more to the railway service and to the reduction in freight charge than to any other single factor affecting the interest of capital. The whole country has become a close neighborhood, each part sustaining the other, so that the distribution of capital has become more and more uniform throughout the country, except in States whose public credit is still bad. So long as the public credit is bad in any community, the rate of interest on private capital will be very high.

The effect of changes in the railway service is witnessed by the following table:

Merchandise or freight traffic of all the railways of the United States in 1885. Authority, "Poor's Railway Manual," 1886.

Tons moved.....	437,040,099
Tons moved 1 mile.....	49,151,894,469
Charge for service.....	\$519,690,992
Rate per ton per mile.....	1- $\frac{87}{1000}$ cents

Twenty-seven trunk lines which separately or in combination center in Chicago from the West, or connect Chicago with the Eastern seaboard:

Tons moved.....	185,320,709
Tons moved 1 mile.....	25,125,076,247
Charge for service.....	\$219,872,732
Rate per ton per mile.....	0- $\frac{87.6}{1000}$ cents

All other lines:

Tons moved.....	251,719,390
Tons moved 1 mile.....	24,026,818,222
Charge for service.....	\$299,818,260
Rate per ton per mile.....	1- $\frac{24.8}{1000}$ cents

Measure of this service per head of population and per family.

Lines.	Tons per person, per year.	Distance hauled.	Charge pr. person.	Ch'rg per family of 5 persons.
27 trunk lines	Tons. 3- $\frac{25.2}{1000}$	Miles. 136	\$3.68	\$18.40
All others.....	4- $\frac{29}{1000}$	95½	5.26	26.30
Totals.....	7- $\frac{67.2}{1000}$	111½	\$8.94	\$44.70

The average charge per ton per mile, on the 27 trunk lines in the years 1865-68, inclusive, exceeded that of 1885 by 1- $\frac{63.5}{1000}$ cents. At this rate of excess applied to the whole traffic of the United States, all other lines having made a greater reduction, so far as the data can be had the sum saved in the year 1885 was \$803,633,477 as compared to 1865-68.

The whole service of all the railroads in 1885 consisted in moving 42 pounds a day of food, fuel, fibers, and fabrics a distance of 111½ miles for each man, woman, and child of the population, or 1470 pounds a week for a family of 5. The average charge to each person was a fraction under 2½ cents per day, or 87½ cents per week for each family of 5.

The common highways are open to all who do not choose to subject themselves to the alleged monopoly of the railways. One man with a one-horse cart could probably haul 1470 pounds 111½ miles in a 7 days' journey — 1 day devoted to rest. What would it cost?

In considering this reduction in the charge on railways, it must be remembered that a very large portion of these railways built since 1865 have taken the place of the wagon roads, or of what are known in the West as "dirt roads," so that the saving to the people of the United States by the mere existence of the new roads, whatever they may charge, is much greater than the mere reduction of their charges since they came into existence; but the latter saving is so big that anything else may be disregarded.

Reduced to the unit of the individual, the saving in the cost of railway service amounts to \$13.67 per head of the population each year, or a fraction under \$60 a year for every family of 5 persons. This sum would have paid

all the taxes which have been assessed throughout this period by the people of the United States for national, state, county, city, and town expenditures, including that part of the taxation which has been applied to the reduction of debts, whether national, state, or municipal.

Or we may put this in another way. A sum, representing the saving of the last four years only as compared to the rates of 1865-68, would doubtless have sufficed to cover the cash cost of the construction of the 100,000 miles of new railway built between Jan. 1, 1865, and Jan. 1, 1887, at an average cost of \$30,000 per mile.

In a previous article in *THE CENTURY* it has been demonstrated that all our present crops, or products from land which is under the plow, omitting those which are derived from pasturage, have been derived from a little over 300,000 square miles of land.

Now between the dates January 1, 1865, and January 1, 1887, more than 100,000 miles of railway have been constructed. If we lay out a strip of land only 5 miles in width, alongside each of these new lines, it would cover an area of 10 miles by 100,000, or 1,000,000 square miles of land,—three times as much as is now under the plow, of which every acre has been brought within less than five miles of a railway since the year 1865.

While these great price-making factors have been working out their just results in the United States, the charge for moving food across the sea by steamships has been reduced in almost as great a measure. The substitution of the screw for the side-wheel, the construction of large vessels made of steel, and the use of the compound engine of two cylinders, now supplemented by the triple compound, the opening of the Suez Canal, and other new forces applied to distribution, have altered all the conditions in Europe as well as in this country.

Only a passing reference can be made in this article to other price-making factors. This department has been very fully treated in a recent pamphlet by Mr. Wm. Fowler, LL. B., whose article upon the alleged appreciation of gold, lately published by the Cobden Club, is one of the most satisfactory treatises yet issued.

Among the other forces which have tended to reduce prices during the last twenty years, is the Bessemer process for making steel, since supplemented by the "basic process," which latter process has brought the phosphoric iron mines of Germany into full production, previously almost useless; the application of gas for fuel; the use of natural gas for the same purposes in this country; improvements in agriculture in the use of the buggy-plow, the gang-plow, etc., the self-binder attached to the reaper; such improvements in all the tex-

tile arts that one operative now performs all the textile work that could be done by two or more twenty-five years ago; the improvements in the use of machine tools applied to all arts; and the like.

In point of fact, it is not too much to say that one-half as much capital as was required to do the general work of life in 1865 will now suffice to aid labor in compassing the same amount of product. That is to say, it took twice as many dollars' worth of capital to accomplish a given product 20 or 25 years since as is now needed.

On the other hand, the owner of the capital is now compelled, whether he will or not, to be satisfied with one-half the income on each unit or dollar's worth of the present capital, if he trusts only to his capital for his means of living.

Even in the matter of the use of gold, reference might be made to the economy brought about in banking and exchange; the use of the telegraph and the like; the saving of time in the transportation of commodities: all of which subjects are fully treated in Mr. Fowler's essay.

In fact, if all the changes which have been worked by the elimination of time and distance from the conduct of affairs were to be considered, it would require a volume instead of an article to picture them.

It thus appears that, while the purchasing power of a day's or year's labor has increased since 1860 from 40 to 70 per cent. according to the grade or skill of the workman, and from 66 to 108 per cent. since 1865, and while the earning power of capital, considered without regard to the skill of its owner, has diminished absolutely one-half and relatively at least 75 per cent. since 1860, there have yet been periods when it has been difficult for many workmen to find work, when also capital could not find employment, and when there was want in the midst of abundance.

Can these faults in the present forms and methods of society be remedied by legislation, by coöperation, by profit-sharing, or by the state assuming more and more the control and direction of the forces of capital? These are questions which demand an answer.

That there has been grave discontent on the part of labor, and a want of that true comprehension of what may rightly be called "the claims of labor" on the part of many capitalists, may not be denied.

What are some of the causes of this discontent, and how shall admitted wrongs be righted?

It is a matter of common knowledge that the application of machinery in special arts often causes the displacement of the craftsman, the hand-worker, or the common laborer who has been trained in that art, and who finds it

difficult to adjust himself to new conditions. This fact, which has been a matter of common observation in single arts, has affected nearly all the arts of life in the last 25 years more profoundly than ever before. There have been single great inventions, like the application of steam, which have gravely altered the conditions of society; but there have probably never been so many applications of science and invention to the common arts of life as have been applied in the present generation, nor has any single one ever been so potent in modifying and changing all the conditions of society as the sinking of time and distance in the fraction of a cent a ton on a mile of railway.

In this country, where these great new forces have been more free to act than in any other, there are certain facts which must be admitted by every one competent to observe. Leaving wholly out of view the transfer of property already saved from one person to another in the gambling operations of the stock exchange, such incidents being of no material consequence except to those who engage in them, we may observe —

First. That the direction and use of capital are becoming more and more a matter of scientific training, as the margin of profit in every art comes to a less and less fraction of the product made or distributed. The merchant adventurer has gone the same way with the craftsman and his apprentice — he has disappeared with the removal of the mysteries of trade.

Second. Although great fortunes have become more conspicuous, their number is very small, and their aggregate amount is yet smaller in proportion to the amount and great number of moderate fortunes which are not conspicuous but which are steadily increasing.

Third. Adjacent to every city are suburbs or neighboring towns which are filled with comfortable dwellings of moderate size, which give evidence of comfort and welfare steadily increasing on the part of an increasing portion of those who perform the practical work of the country. These are the dwelling-places of their respective owners or occupants, who are not capitalists in any sense, but who have assured to themselves an abundant subsistence, a home, and a safe position in the community.

Fourth. While great bonanza farms are conspicuous, they are also few in number; the increase in small farms is very rapid; and perhaps the increase has been yet more rapid compared to what it had been before agricultural machinery, science, and invention had come nearer to the farm.

Fifth. By comparison with this rapid progress not only of those who are in a position

of wealth, but of the vast number who, although not making great savings, are living year by year more comfortably, better housed, better clothed, and better fed, the bad condition of the very poor, and the more uncertain position of the common laborer whose opportunity for work is intermittent, becomes more apparent and therefore demands urgent attention.

If such are the facts which are disclosed by the actual observation of the conditions of men, and confirmed by the deductions drawn from them in this and other cities, do we not find in the very gain in the purchasing power of wages a cause of an increasing disparity in the conditions of those who class themselves as "working people," in a limited sense? and may not this be one of the grave causes of discontent, even though all have made some progress? Is it not apparent that while the very poor are proportionately no more numerous, and the ratio of common laborers to others is no greater, yet within the lives of men who are not yet beyond middle age, great numbers among the workmen themselves have seen those who started on nearly the same plane, and who in 1860 could earn but little more than their fellows, yet in 1885 and '86, raised far above them in their condition, although still classed as fellow-workmen?

To him who has had the capacity, either mental, mechanical, or manual, to take advantage of the opportunity afforded by science and invention, has been given the greatest progress; while from him who has not the mental or manual aptitude to adjust himself to the new conditions, has been taken even the opportunity for common labor which he enjoyed before.

Do we not witness in the various organizations of labor, so called, an attempt to equalize this growing disparity? It is often claimed that "equal work is entitled to equal pay"; but the difference in the quality of the work may not be overlooked. The attempt is made to control the hours of labor by various artificial methods. In respect to minors, and possibly in respect to women so long as they do not vote, such laws may be necessary. Other attempts are made by establishing stated lists of prices, by limiting the quantity of work to that done by any one man, by limiting the number of apprentices, and by other similar methods, to equalize the material conditions of men. But all these efforts fail wholly or partly. An equal quantity of work measured only by the time devoted to it or by the actual amount of work required in it, never has and never will secure equal results. It is not in the nature of things. It is the efficiency of labor that tells, not the quantity or time. One man will waste more leather in a given

time by want of aptitude or skill in its use than another man will convert into good and useful boots and shoes. Profit may be defined as the margin which mind gains over muscle. This is as true of the higher gain in skillful work when done by the piece as in the use of capital already saved.

The result of all these artificial methods to control conditions which rest upon individual capacity, when even partly enforced, is to level down the earnings of the industrious and the capable to the plane of the unskillful or lazy.

When this truth dawns upon the mind of the discontented, then the trade organization or association soon changes its course and begins to promote the development of individual capacity; it becomes a common school in social science; its members soon find out what a really beneficent force may be developed by organizing labor.

I have endeavored to present the great price-making forces which have been evolving progress from poverty during the present generation, and I may again repeat what I have often had occasion to state. The necessary conclusions to which we are led are—

First. When organized capital is placed at the service of labor, it becomes more and more effective, while in amount it diminishes in ratio to product. It therefore secures to its own use a diminishing portion of, or profit from, an increasing product. This is the economic law, so called, of diminishing profits.

Second. Organized labor, when each member is left free to avail himself of every opportunity which capital, science, and invention place at his disposal, secures to itself an increasing share of an increasing product or its equivalent in money.

Third. As capital and labor become more under the control of common intelligence they cannot help becoming more closely allied; under these conditions high wages or large earnings in money, or in what money will buy, become the necessary result or reflex of the low cost of production.

Fourth. A low cost of production accompanied by high wages is most fully assured by the application of science and invention to all the arts of production and distribution. Pauper labor, so called, may be dreaded only by those who possess pauper intelligence. The competition which is really to be courted and emulated is that which is represented by the art schools of France, the weaving schools and the like of Germany, the trade schools and the industrial schools which have spread more rapidly in England in recent years than they have in this country. Skill and intelligence, free from the burden of standing armies and

of war taxes, may command the commerce of the world.

The present population of the globe is computed at about 1,400,000,000; of these only about 400,000,000 belong to what may be called the machine-using nations. 1,000,000,000 do their work by hand, or by the use of rude tools guided by the hand.

In a peaceful contest for commerce with these nations, who will win? Certainly that nation will *not* win which obstructs the import of the crude products which are all that these non-machine-using nations can give in exchange for what they need, by imposing heavy taxes upon such products when they enter the ports of our country.

But when all has been accomplished which can be done by law or by association, or by the repeal of obstructive acts, there will still remain centers of pauperism in our cities; they exist mainly among those of foreign birth who cannot adjust themselves to the new conditions to which they are subjected. There will also continue to be periods when common laborers will find it difficult to obtain work. How shall we meet these admitted faults? Is there any other way than by adapting the methods of common-school education more nearly to the necessities of life? If it is true that one cannot permanently help either men or women who cannot help themselves, is it not equally true that classes in society in considerable numbers cannot be raised from a state of dependence upon others, except by the development of each member of such class to a knowledge of some art by which he can sustain himself, even if it be only a training in the application of the hand itself to useful work?

Nine-tenths of the occupations of the people of this country in point of number still depend upon the individual capacity, the mental development, the mechanical aptitude, or the manual dexterity of each person. Only one in ten is occupied in a great factory where the conduct of the work depends upon the minute subdivision of labor.

Does not this fact bear witness to the necessity of promoting the development of the individual in order that common welfare may be attained by every man, woman, and child in the community?

What can the state do for its citizens in helping them to obtain subsistence, if the people who constitute the state are themselves incapable of sustaining their own families under present conditions?

Neither the state nor the nation possesses property. The state only controls the property of its citizens by right of eminent domain. It can take property under due process of law

for public use, with compensation to him who owns it. It can tax all property in order to maintain governments. It may tax all property in order to perform certain useful functions which, by common consent, the state can perform in its corporate capacity better than the citizens can in their individual capacity. But the state as state has no productive power, and it is upon the annual product that all depend alike.

4. In this country at the present time there is and can be no lack of most abundant product. We waste every year enough to sustain another nation half as numerous, if not equal in number. The mechanism of distribution is more than ample; yet there is want in the midst of plenty.

Progress *from* poverty is the common rule. "Progress *and* poverty" is the marked exception, conspicuous and dangerous. In one sense every man is his brother's keeper. If he neglects his duty and cares not for his neighbor, the tax-gatherer, at least, will find him out and will compel him to do at the greatest cost what perhaps he might have accomplished at the least cost, had he himself realized his own responsibility.

There is one thing no man can invent, and that is a form of society in which the rights, whether of the rich or of the poor, shall not be accompanied by corresponding duties. He who treats these economic problems without taking the moral and ethical side of life into consideration may rightly be called a representative of "a dismal science." But it by no means follows that we must seek to reconstruct humanity in our effort to form society. The subject of economic science is man as he now is, with all his faults, his selfishness, and his failings. It was said of old time that "surely the wrath of man shall praise thee." Might not the prophet of the present affirm with equal insight, "The power which makes for righteousness compels not only the enlightened self-interest of man, but his very selfishness, to work out the progress of humanity?"

The commerce of the world now turns from one side of the globe to the other on a margin of a cent on a bushel of grain, a dollar a ton of metal, a quarter of a cent a yard on a textile fabric, or the sixteenth of a cent a pound on sugar. The cube of coal, as I have before stated, which would pass through the rim of a quarter of a dollar, when used in connection with the compound engine will drive a ton of food and its proportion of the steamship two miles on its way from the producer to the consumer; by the invention of the triple compound, one-fourth even of this fuel has been saved.

The profit or loss of this great nation turns on the price of a daily glass of lager beer.

When this article is read, five cents a day, more or less, to each inhabitant of the country will represent \$1,095,000,000 worth of product, which may be either saved or wasted according to the measure of the intelligence of each person. The profit which might be represented by this sum of money may be diminished one-half by the ignorance of legislators who take no cognizance of the facts of life when framing the statutes by which they undertake to regulate and control an organism which yet makes its way steadily onward with greater or less effort, whatever may be the system of laws by which its progress is either helped or hindered.

These computations are submitted for what they are worth. They are probably as near to the facts as it would be in the power of any private student to bring them, whose opportunity for study or for treating these questions is very limited.

In the attempt to comprehend the laws of social science by reading and studying treatises upon political economy, the writer long since met the difficulty which would be apt to occur to a business man,—to wit, the necessity for a statement of accounts and a trial balance. In the attempt to make such a statement and to balance the accounts of one class with another, and of one branch of industry with another, he has himself come to certain conclusions which coincide very closely with the modern teaching of political science.

The science of life does not consist in *laissez faire*, or letting alone. There are many objects which may be better attained by the state, town, or city undertaking them than they could if left to individual or corporate enterprise. There are many others which it is often proposed to have the state assume, which are utterly beyond the functions of the state in its corporate capacity to manage.

Among the prime factors which make or mar material prosperity there are grave differences. The conclusion of the writer is, like that of all the economists whose works have any standing among men, that tampering with, or debasing the standard of value is the most malignant fraud which the government can perpetrate. The cost of substituting paper notes for true money under the stress of war added without question to the cost of the civil war as much as the whole sum of outstanding debt yet unpaid. The most beneficent factor in the lowering of prices and in raising wages has been the extension of the railway system and the reduction in the charge for the service. Vanderbilt was the typical railroad man of his day; he was also the great communist of his

time, because he reduced the cost of moving a barrel of flour a thousand miles to so small a sum that it can hardly be measured in a loaf of bread, at a margin of profit to himself and his associates which is now less than the value of the empty barrel at the end of the line. The heavy taxes which we are now paying are but a slight burden upon the people; so long as they can be applied to the payment of the public debt, they may be justified, however unscientifically and injudiciously the acts for collecting them may be framed.

Whatever may be the opinions or theories of each reader upon these various problems upon which every voter in a free country must pass whether he will or no, it is held that there can

be no true solution unless it is based upon facts. It has been the purpose of the writer in this series of CENTURY articles to give these facts rather than to present his own theories; to ask questions rather than to attempt to answer them.

It may now be suitable to submit a very few examples proving how the rule of diminishing prices, decreasing profits, and diminishing cost of labor has been consistent with the general rise in the rates of wages and in their purchasing power. This principle would of necessity be deduced from all the tables which have already been submitted; but a few specific examples may be a matter of curious interest, and will fully sustain it.

EXAMPLES OF REDUCTIONS IN PRICE—REDUCTION IN COST OF LABOR—RISE IN RATE OF WAGES AND INCREASE IN PURCHASING POWER OF WAGES.

STANDARD COTTON SHEETING.

Year.	Price per Yard.	Cost of Labor per Yard.	Earnings per Year.	Purchasing Power in Food, Cloth, and Fuel.
1860	8.17 cts.	0.095 cts.	\$207.00	669
1865	50.61 "	1.501 "	234.00	420
1870	14.33 "	1.425 "	275.00	632
1875	9.79 "	1.314 "	280.00	721
1880	7.40 "	0.093 "	260.00	782
1885	6.55 "	0.095 "	284.00	1014

SUIT OF FURNITURE FOR A BEDROOM.

1860	\$35.00	\$12.00	\$456.00	1473
1865	55.00	18.00	678.00	1217
1870	33.00	11.00	687.00	1578
1875	28.00	10.00	723.00	1868
1880	20.00	8.00	723.00	2175

ONE DOZEN STEEL AXES, DAY WAGE, RATIONS FOOD ONLY PER DAY.

	Price	Labor Cost	Day's Wage.	Rations Food Only.
1860	\$11.00	\$2.28	\$1.70	6.25
1865	20.50	3.12	2.27	5.39
1870	14.50	2.93	2.35	6.41
1875	11.50	2.46	2.17	6.00
1880	8.50	2.04	2.26	8.76

In this example the prices of food in the same county have been computed as a standard.

A HORSE-RAKE.

Year.	Price.	Labor Cost.	Day's Wage.	Ration Food Only.
1865	\$35.00	\$3.36	\$1.93	4.53
1870	32.00	2.87	2.12	5.54
1875	28.00	2.53	1.90	5.92
1880	24.00	2.10	1.76	7.01

Compiled from Vol. XX. U. S. Census by Joseph D. Weeks; computed by Edward Atkinson, and verified by comparison with other authorities.

Could space be spared me, examples of the same kind could be added from almost every industry to which modern machinery has been applied, but these must suffice.

Edward Atkinson.