

ARE WAGES RISING OR FALLING ?

(For the Review.)

By H. J. CHASE.

An article of the same purport as this was submitted to the *Popular Science Monthly* and returned with the following letter:

GARRISON-ON-HUDSON, N. Y., April 30, 1907.

MR. H. J. CHASE,
Newport, R. I.

Dear Sir:—We should be glad to print a good statistical article on the course of wages during the nineteenth century, but it does not seem to me that your article is inductive, as you state, and it is consequently not well suited to a scientific magazine.

Very truly yours,
J. MCK. CATTELL.

To prepare a really good statistical article on the course of American wages during the nineteenth century would be a task perhaps fully equal to that performed by Thorold Rogers in his "Six Centuries of English Work and Wages." No doubt the *Popular Science Monthly* would be glad to print such an article, but would it be equally glad to pay what it would cost to collect the material, to say nothing of the labor involved in its proper arrangement and presentation? For, as will be shown later on, the so-called wage statistics that have been compiled by Wright and one or two others would be of but small assistance in determining whether the tendency of American wages was upward or downward during the period to be covered.

It is the writer's belief that this question can be settled without resort to the methods employed by Prof. Rogers; that an essentially inductive demonstration of the downward tendency of American wages is possible without taking a tithe of the trouble that the latter took to prove the same thing with regard to English wages.

The editor of the *Popular Science Monthly* seems to doubt this, but even if the argument about to be presented be deductive, instead of inductive, it is strange that on that account it is "not well suited to a scientific magazine." Has the deductive method of investigation ceased to be scientific? Are geometry and the other branches of mathematics no longer sciences?

$$\begin{array}{cccccc} \frac{12}{12} & \frac{13}{15} & \frac{14}{17} & \frac{15}{19} & \frac{16}{21} & \text{etc.} \end{array}$$

No profound knowledge of arithmetic is necessary in order to perceive that, reading from left to right, these fractions grow smaller and smaller; that, although the numerators increase, the denominators increase more rapidly; that therefore this is what is called a descending series.

Now wages are a fraction whose numerator is the amount received by the laborers and the denominator the total amount produced. Where wages are paid in kind, the fraction may be written thus:

$$\frac{\text{Am't rec'd by laborers}}{\text{Total produce}}$$

Where wages are paid in money, the fraction may be written thus:

$$\frac{\$ \text{ rec'd by laborers}}{\$ \text{ total produce}}$$

If we had a series of such fractions for each year of the nineteenth century, the question of whether it was ascending or descending could be determined without any difficulty. But we have no such series. What purports to be tables of American wages are nothing but series of numerators. The denominators are missing. We have statements of the amounts received by the laborers in various occupations at different periods, but no mention of the amounts produced. Until this omission is supplied, the profoundest mathematician in the world cannot determine from these tables whether American wages rose, fell, fluctuated or moved upon a dead level during the nineteenth century.

Wright's tables of wages (so-called) are supplemented by tables of prices, but prices have nothing whatever to do with the question under consideration. In many directions the purchasing power of money may be greater now than it was a hundred years ago; but suppose it were greater in all directions, would not that fact apply as much to the dollars in the denominators of the fractions that stand for wages, as to the dollars in the numerators? Would a hundred-fold increase of the purchasing power of money affect the values of those fractions in the smallest degree?

In other words, the evidence appealed to by those who assert the upward tendency of American wages is utterly inconclusive, so utterly inconclusive that it is difficult to believe that all who have cited it have been unaware of the fact. The only exception to be made to this statement is in the case of Mr. Edward Atkinson. He has given statistics in which there is some reference to the amounts produced, as well as to the amounts received, by the laborers. But in his case, his own figures, so far as they can be interpreted, flatly contradict his contention that "in all the productive arts to which science and invention have been applied by capital, the laborer is receiving a constantly increasing share of a constantly increasing product."

For example, in 1830 the per capita amount paid the operators in a mill making cotton sheetings averaged \$164 per annum; in 1897 it averaged \$320. But the annual output in 1830 was but 5,000 yards per capita, worth at the then *maximum* price, 9 cents, \$450; while the annual output in 1897 was 32,000 yards per capita, worth at the then *maximum* price, 5 cents, \$1,600.

In other words, in 1830 the operatives got at least $\frac{164}{450}$, or a trifle over 36 per cent. of the total output; but in 1897 they got at most only $\frac{320}{1600}$, or barely 20 per cent.

Upon his attention being called to this, Mr. Atkinson, in a letter to the *Boston Traveler* of February 6, 1900, declared that it was fallacious to compare the amount received by the operatives with the total output; that there was no relation between the two, because less than one-fourth of the value of the output was due to the factory processes.

Peculiar reasoning this, but let it pass. If one-fourth of the value of the output of 1897 was due to the factory, then the operatives of that period received \$320 out of every \$400 therein produced, or 80 per cent. But if only one-fourth of the value of the output of 1830 was due to the factory, the operatives of that period received \$164 for every \$112.50 produced therein, leaving a deficit of \$51.50 to be made good by somebody! It is evident that more than a fourth of the value of the output of 1830 was due to the factory, but how much more? Mr. Atkinson never stated, and therefore his evidence also is inconclusive. Nevertheless, the fact that the operative of 1830 got a much larger share of the total value strongly warrants the inference that he got a larger share of the value added in the factory.

Mr. Atkinson contended that the true way to make the comparison would be to reckon the amounts received by the operatives at different periods in yards of cloth. But if wages had been paid in kind, the 1800 yards received by the laborer of 1830 would still have been at least 36 per cent. of the total output, 5,000 yards, and the 6,400 yards received in 1897 but 20 per cent. of the the total output of 32,000 yards. Whatever a yard of cloth was worth at either period, it was worth no more to the laborer than to the other participants in the division of the total product. If, as Mr. Atkinson asserted, the laborer's yard would exchange for more of the ordinary necessities in 1897 than in 1830, so would the yards that went to the other participants.

Now it is possible that the course of wages may be determined by considering the other fractions that, together with the laborer's fraction, constitute the total product.

The capitalist's fraction may be represented thus:

$$\frac{\$ \text{ rec'd by capitalists}}{\$ \text{ total product}}$$

The landowners' fraction may be written thus:

$$\frac{\$ \text{ rec'd by landowners}}{\$ \text{ total produce}}$$

Consequently the equation of distribution for any year of the nineteenth century would be thus:

$$\frac{\$ \text{ rec'd by laborers}}{\$ \text{ total product}} + \frac{\$ \text{ rec'd by capitalists}}{\$ \text{ total product}} + \frac{\$ \text{ rec'd by landowners}}{\$ \text{ total product}} = \frac{\$ \text{ total product}}{\$ \text{ total product}} =$$

During the nineteenth century we know that the second of these fractions, interest, declined from about 7/100 to 4/100.

We also know that during the same century the third fraction rent, increased, but the amount of the increase cannot be stated with the same degree of definiteness. Much of the land in this country is worth no more today than it was in 1800; some of it may not be worth so much; but the aggregate of land value is very much greater now than it was then. The last two federal censuses contained estimates of this value. Although the degree of their accuracy may be a question, nobody will dispute that they are in the direction of the truth. According to these estimates, between 1880 and 1900 the value of the land increased at the rate of about 50 per cent. per decade, or about twice as rapidly as the population. During some decades the increase of population has been as high as 37 per cent.: but if we put the increase of land value at no more than 50 per cent. for any decade during the nineteenth century, it means that the aggregate was six times as much in 1900 as it was in 1800. There is no doubt that this estimate is very much below the truth, but it is sufficiently large for the purpose in view.

It will have to be conceded that thus far the investigation of the question has been inductive. The decrease of the capitalists' fraction is a fact of definite record; the increase of the landowners' fraction is also a fact, though not of as definite record. That, whatever the amount of the total produce, the landowners contribute nothing thereto is also a fact. If from this point the course of reasoning becomes deductive, the deductions are practically self-evident.

1. Since the landowners produce nothing, their fraction must increase at the expense of one or both of the other two.

2. The decrease of the capitalists' fraction of the total product during the nineteenth century is not sufficient, in and of itself, to account for the increase of the land owners' fraction. Ergo, some part of this increase must have come from the laborers' portion.

Reverting for a moment to Mr. Atkinson's figures, it will be seen that the decline of the operatives' fraction of the total output, from 36 per cent. in 1830 to 20 per cent. in 1897, is about the same as the decline in the current rate of interest, from about 7 to about 4 per cent. The one decrease is a little over 44 per cent. and the other not quite 43 per cent.

The foregoing is the substance of the article submitted to the *Popular Science Monthly*, the omissions being only explanatory paragraphs for the benefit of those not familiar with the Single Tax proposition. The demonstration is believed to be sufficiently inductive to answer as the supplement of the deductive demonstration given in "Progress and Poverty." It is to be hoped that the editor of the *Popular Science Monthly* will live long enough to print the kind of article that he says he would like to have upon the subject of wages.

It is also to be hoped, but scarcely to be expected, that meantime the

editors of magazines and newspapers will cease to assert that unimpeachable statistics, not only English but American, prove conclusively that wages have been rising ever since the early part of the nineteenth century. Their omission to mention Prof. Rogers in this connection, the one writer whose investigations go below the surface of the subject, indicates that these gentlemen don't feel quite so sure about what they say as they would have their readers believe.

THE OBJECT OF EDUCATION.

(For the Review.)

By JENNIE A. ROGERS.

Prof. Elliott and some of our eminent educators are very much concerned about the result of popular education.

In the days of our forefathers when the man who could read and write was a wonder, and the woman who could read and write was a phenomenon, it was thought all the crime, poverty and unhappiness of the world was the result of ignorance, and if people were educated, these monsters would vanish from the world as had the mammoth and mastodon of past ages. It was believed that if men and women were interested and understood something of the beauty and wonders of the world around them and of the life which animated their own being, that the prayer of ages would be answered and the Kingdom of Heaven be at hand. So they started to educate and build private schools; for it was thought only those who had position and property needed education. This class soon found an enemy in the great illiterate mass, and decided this, interests could be best served by educating that mass. Then free schools were built by the thousands, and teachers supplied by the tens of thousands. Still there were some who did not appreciate or take advantage of these opportunities, and as they seemed to be the most troublesome members of society, education was made compulsory and books and materials furnished free. Now they propose to furnish free food, clothes and medical attendance, because they find a class unfit mentally and physically to take the education they provide.

What is the result of this system of education we thought was steadily advancing with the needs of the time? Have we less crime, poverty and unhappiness? True we have more men and women who can read and write, more general knowledge; but there is little doubt that crime and poverty are more appalling today than ever in the world's history. They are more subtle, and that makes them more cruel. The pangs of poverty are not half so sharp when shared by the whole community as when contrasted with the splendor and comforts of wealth. The warrior of old who met his enemy face to face in a fair fight did not inflict half so much mental and physical