by the standard of life, this force operates slowly, and in some instances it may happen that the lower limit to wages is the bare subsistence of the workers. On the side of demand there is an upper limit to the wages of any group, fixed by the value of the laborer's contribution to the product. Between these limits wages will fluctuate according to the relative bargaining power of employers and employed.

The proponents of the marginal productivity theory maintain that the laborer obtains as wages approximately the value of what he adds to the product of the group to which he belongs. But under the universal law of diminishing returns the greater the number doing the same kind of work that he does, in comparison with the other factors of production in the same group, the smaller will be his contribution to the product, and, therefore, the lower his wages; and *vice versa*, the fewer doing his kind of work the greater his imputed product and the higher his wages. Whatever tends, then, to reduce the number of laborers in proportion to land and capital tends to increase wages. A rising standard of living tends to raise wages indirectly by entailing a lower birth rate and in time fewer laborers. Trade schools, instrumental in augmenting the numbers of skilled laborers, tend to lower wages in the skilled trades and to raise the pay of unskilled laborers whose ranks are at the same time somewhat reduced. Increased efficiency of labor, provided the efficiency of the other factors in production do not increase in proportion, is tantamount to increased numbers and for any given group is favorable to reduced *piece* wages.

Professor Taussig, of Harvard, maintains plausibly that wages are fixed, not by the marginal product but by the discounted value of that product, making the rate of interest one of the fundamental determinants of wages.

Points of difference in these current theories are as much apparent as real and careful analysis would go far towards bringing them into harmony.

Discussion

WILFRED LEWIS: At the last meeting when the question was raised as to how a proper basis for wages could be established, I said that the basic wage depended primarily in my opinion, upon the production of gold which is the standard by which all other values are measured. By this I mean that the average amount of common labor expended for a dollar will not be diverted to the mining of gold unless it can realize thereby at least 25.8 grains of gold. Nor will a gold miner seek other employment if the labor which yields him 25.8 grains of gold does not pay him a dollar for the same effort in some other direction. What a day's labor may be worth, depends, therefore, upon how much gold it can recover from the earth in mining, and this naturally depends upon the number of hours per day that can be utilized to advantage. Organization and capital will, of course, affect the total output in mining the same as in any other industry, but gold mining is the only industry in which the product is money itself and labor's share of that product necessarily fixes the basic wage. When gold is plentiful, wages are high and when gold is scarce they necessarily shrink with it, because the gold produced in a given time is all there is to divide among the workers for the time spent in its production. In other industries labor may have more or less than its share of the products of labor but in the mining of gold it cannot realize more than this without checking or stopping production, and when this occurs the value of the dollar standard appreciates until the same reward commands more labor, and stimulates again the mining of gold. In prosperous

times it is possible that labor does not receive its full share of the things produced, but in times like these, I believe labor is generally overpaid. It is the chief item of expense in all manufacturing and when we see a thousand to fifteen hundred failures every month aggregating twenty to thirty million dollars, it is perfectly clear that most of these manufacturers have paid out more in wages than they were able to recover in the sale of their products.

D. M. BATES: As I understand it, it has been a matter of collective bargaining in all instances. Suppose Mr. Lauer's firm has taken a contract to lay twice the usual number of bricks a day, and that by collective bargaining the price had been fixed where they were coming out at a loss. Suppose that happened all over the country. The result would be great hesitation at going into any such contracts. Engineers when asked to bid on such buildings would increase their bids and brick buildings would figure out very unattractive for factories and business blocks, and then skilled bricklayers, thrown out of employment, might be glad to get back at a reasonable price. Is it not time that there is always a compensating factor in human life working in accordance with some such law?

PROF. EDWARD ROBINSON: Prof. Phillips in his discussion of wages used bushels as his unit instead of dollars. The real wage is what the worker is able to get in goods, commodities or other material things for his labor. The speaker had occasion some time ago to look up the matter of wages, hours of labor and prices of commodities in the United States from 1840 to 1900.

Taking the United States census figures for each decade and reducing the figures to the amount of commodities that the average working man received for one hour of labor at each decade, we find that the real wage has continually increased so that in 1900 the worker was getting about three times as much goods for an hour's labor as he was getting in 1840. This is a fact of tremendous significance and is wholly independent of any theory of wages.

What has caused this tremendous increase in real wages in this sixty years? It is very easy to see that the great improvement in machinery, the development of factory organization, the improvement of railroads, etc., has made it possible for each worker to produce several times as much product as he did before. This extra product is divided between labor and capital. Each as a rule gets its fair share. The labor union which stands for the principle of collective bargaining comes in to see to it that labor does get its fair share.

When one labor union is able to raise its wages to a point in excess of its real value it does so at the expense of other workers who have weaker unions. It is impossible for labor as a whole to get more than it produces.

Scientific Management is of the nature of an improvement in the arts and as such makes it possible for labor to produce more and therefore to receive more wages, as the only way in which it is possible for labor to receive more is to produce more.

H. K. HATHAWAY: It seems to me that a discussion of how a basic wage shall be determined in each branch of industry is almost futile at this day. Arguing and theorizing as to whether rates of pay shall be determined as a result of bargaining, the law of supply and demand, or whether there may be found at some future time a more scientific method of determining what should constitute a proper recompense for a day's work in the thousands of different branches of

industry and commerce and in different localities does not get us anywhere.

The first and most important thing that we can do is to increase the amount of wealth produced by each worker each day, as this will result in there being an unquestionably greater amount of wealth to be distributed. Just how and in what proportion the wealth produced shall be divided among those who take part in its production is such an involved subject that we do not get anywhere in discussing it. There are too many factors to be taken into account, none of them being sufficiently constant.

Perhaps one thing more than any other complicates the whole problem, and that is dull times. We go on for a few years enjoying prosperity in a marked degree, and during these periods of prosperity we all of us acquire certain standards of living and certain wasteful or extravagant habits. Wages are increased to meet these higher standards of living and extravagances, and only a few of us are sufficiently provident and far-seeing to realize that such periods of prosperity are almost inevitably followed by periods of depression when our standards of living must be lowered, and we must get along on considerably less than we had during the period of prosperity, and that consequently we should during the period of prosperity be setting aside a certain reserve to carry us through the periods of depression.

During these periods of prosperity manufacturing facilities are greatly increased to meet the demand, and this leads to the raising of those expenses which are known as fixed charges. These charges can be reduced very little in dull times, but must be met as well as in prosperous times. As a result of a factory being run far below its capacity and the product over which these fixed charges must be distributed being greatly diminished, business is done at a loss which must be more than offset by the profits earned in good times. Consequently it would be fatal to any business to pay out in wages all of the money received during good times after deducting all other expenses. The same thing would be true if the entire profits earned in good times were paid out in dividends.

As long as this condition exists and there is so much uncertainty as to the length of time that prosperity will be with us or how long dull times will last it is impossible to fix anything in the nature of a basic wage even if we had a proper means of determining what the basic wage should be for each of the thousands of different jobs for a business running at its normal capacity. Anything in the nature of a basic wage necessitates a certain degree of stability in the conditions upon which the basic wage should be founded.

What is true of a business, i. e., that prices charged must be high enough to cover the cost in good times and to enable the building up of a reserve to meet the loss in dull times when commodities are sold at less than cost, is equally true in theory at least with respect to wages—they must be high enough to enable the worker to set aside during good times a reserve that will carry him through periods of enforced idleness. This does not work out in practice in a very satisfactory manner.

Consequently in attempting a solution of this problem the first thing to do is to try to bring about something in the nature of stable industrial conditions. If this can be done, we shall have advanced a long way in solving all of the problems of industry, and to a great extent the question of a basic wage will take care of itself.

We have all come to regard dull times as being of supernatural origin, that is to say as being something over which we have no control, and which while to be regretted must be endured. On the contrary, however, the future will show that dull times are the result of our own foolish actions; and of one group of men trying to profit at the expense of others.

It has been my thought that if the amount of money, time and energy expended in a scattered and inefficient way to solve this problem could be expended under the control of one commission having almost unlimited power, that a solution might be reached.

SCIENTIFIC MANAGEMENT AND ORGANIZED LABOR[1]

The Functions of the Industrial Counselor—Possible Relations of Scientific Management and Labor Unions

By ROBERT G. VALENTINE.[2]

In beginning my work I had to adopt as a working hypothesis very distinct tentative beliefs. One working hypothesis I adopted was a belief in Scientific Management and claim to understand it very much as you do. The second hypothesis is that I believe in absolute democracy in group action on matters. Without assenting to any particular form of association, I feel that in any community or in any group of people, where you did not find a sane quiet beginning toward group action, that group or that concern, or those individuals are headed for trouble. And so in accepting the facts of our time as we find them I believe in Trade Unionism as one distinct form of democratic development, despite all its imperfections and its monstrous economical fallacies.

Last Saturday I was called on the telephone by one of a firm of Buffalo lawyers, who asked if I knew anything about a text-book concern in Massachusetts. I told him I had no accurate information about it. He said, "Assuming what you have seen in the papers and what you know about it is all true, would you consider that firm financially sound at the present time?" I said, "Yes, sir."

Then, "Assuming also what you know about it, would you consider that firm, or would you not consider that firm a sound in its methods of management and its processes of doing the work?" Knowing the concern to be what any of us would consider an up-to-date, clean-cut business concern I said, "Yes; I should consider it perfectly solvent, both financially and as regards the way it works its processes."

Next I was asked, "Do you think that concern is industrially solvent, meaning that the relations between employer and employes in that concern, and all the partners in that concern, between themselves, and any other relations they have with each other, and with their employes, and with outside labor forces of any kind, and their relations with the management itself, were not only all fixed pretty soundly but were developing in the right direction?" I replied, "From what I know of that concern I should not consider that concern industrially sound. I do consider it financially sound. I do consider it sound as to its plant and equipment and methods and processes of manufacture and operation, but not so on the side of human relations existing all throughout." The man inquiring then said, "That is what I wanted to know. I had some doubts about it myself; and we will look into it further now, from what you have said."

Now, to me it is significant that that type of question i

[1]An address at the Annual Meeting, December 5, 1914.
[2]Industrial Counselor, Boston.