

it is possible to have a complete change of mind when a man is engaged in business for profit?

Mr. Taylor. I do. I say that any set of men who want to earn a big profit in any industry must have that change of mind. If they want to get a big profit, in addition to the fact that any decent man would have that view for good business, if for no other reason, they must have that view. You cannot keep men working hard on one side and not have them work equally hard on the other side. If you want a profitable business you cannot have meanness and injustice on one side or the other; you have got to eliminate meanness and injustice from both sides.

The Chairman. I believe you stated that after all the other things had been paid for, if there was a certain surplus that was left, you included in that surplus a profit for the workmen and a profit for the employer?

Mr. Taylor. Yes, sir.

The Chairman. Taking that as a basis, would there not immediately arise a contention between the employee and the employer as to what portion each should receive?

Mr. Taylor. I will say that in my experience under scientific management no such contention has arisen, because the workmen who have come under my observation, and who came under scientific management, looked upon 30 to 100 per cent increase in wages, which they were paid for performing their share of the contract, as full recompense for the work which they were doing; and I do not remember that personally I have ever had a workman seriously question the justice of that percentage. I can very well imagine that in the future, with the growth of the industrial world, with the betterment of the whole world, that those percentages may become wrong and that the workman ought to have a larger share. And, if he ought to have it, he will get it under scientific management.

The Chairman. Is it not true that the very essence of scientific management is that there must be one directing head in an establishment, and that no association of workmen can be permitted to interfere with the directions and with the policy of that directing head?

Mr. Taylor. Interfere, yes; cooperate, no.

The cooperation of the workmen is asked for in every possible way in which you can get it; interference is never tolerated.

When you once get a correct standard established, when, by way of illustration, you have got your train schedule made out, and the trains are going to move, no one is allowed to interfere with the movements of those trains; but if any set of men think the schedule is wrong, that there is a better schedule, all that they have to do is to call the attention of the management to a defect in the schedule and they will correct it. And, let me tell you, Mr. Chairman, that nine-tenths of the improvements that have come under scientific management have come from this friendly cooperation on the part of the workmen with the management. Almost all of the best suggestions for improvements come from intelligent workmen who are cooperating in the kindest way with the management to accomplish the joint result of producing a big surplus which can be divided between the two sides equitably.

The Chairman. And must not that cooperation be entirely in accordance with the judgment and direction and policy of the directing head under scientific management?

Mr. Taylor. No, sir; most emphatically no. Scientific management has developed over a period of 30 years a series of standards which are recognized by both workmen and management as being just and fair. I have tried to point out in my testimony examples of those standards, and I can point out if you wish it a thousand more—standards which are accepted as the just and fair laws of that establishment by both sides. And the president of one of these companies would no more think of interfering with those laws than the workman would.

The Chairman. In what percentage, if any, of those establishments that have come under your observation where scientific management has been introduced has collective bargaining been introduced, by which the workmen collectively become a party in determining the wages, the task, and the conditions under which they shall work?

Mr. Taylor. Under the old sense of collective bargaining, I know of no single instance in which that has been used under scientific

management. That is in the old sense of collective bargaining.

In the new sense of collective bargaining it is done in every establishment in which scientific management exists. During my first day's testimony I tried to make it clear that under the old system of management a very large part of the time and thought of both those on the management side and of the workmen was devoted to securing each for its own side what it looked upon as its proper share of the surplus. I use this word "surplus" as defined by me in my first day's testimony.

Now, a manufacturer who is an unjust man (and that frequently is the case—no more frequently is the manufacturer unjust, however, than is the workman unjust) when the manufacturer is unjust toward his men, without collective bargaining under the old system of management he has the power to secure more than his fair share of this surplus. Therefore, in many establishments under the ordinary system collective bargaining has become and is in my judgment an absolute necessity.

Under the old system of management (not scientific management) the attitude assumed in nine cases out of ten by the leaders of the workmen on the one hand and by the management on the other, is that of semihostility. It is an attitude the existence of which prevents the full measure of cooperation which should exist between both sides in order to produce the largest and best results, and whenever this attitude exists collective bargaining is a necessity.

Now, the moment this attitude of hostility or semihostility between the two sides is abandoned, and the moment it becomes the object of both sides jointly to arrive at what is an equitable and just series of standards by which they will both be governed; the moment they realize that under this new type of cooperation—by joining together and pushing in the same direction instead of pulling apart—they can so enormously increase this surplus that there will be ample for both sides to divide; then collective bargaining instead of becoming a necessity becomes of trifling importance. In all establishments working under scientific management it is always understood that any single workman or any four or five or six workmen can at any time

call to the attention of the management the fact that any element in the management is wrong and should be corrected, and this protest will receive immediate and proper attention. And what I want to emphasize is that the kind of attention which any protest from the men receives under scientific management is not that which is subject to the personal prejudice or to the personal judgment of the employer, but it is the type of attention which immediately starts a careful scientific investigation as to all of the facts in the case, and this investigation is pursued until results have been obtained which satisfy both sides of the justice of the conclusion. Under these circumstances, then, collective bargaining becomes a matter of trifling importance. But there is no reason on earth why there should not be a collective bargaining under scientific management just as under the older type, if the men want it.

The Chairman. If collective bargaining is satisfactory under the conditions first described by you in order to get a proper division of the surplus, because the division of that surplus affects both the employer and the employees, would it not also be just as essential that there should be collective bargaining relative to conditions under which the workmen should work, because those conditions affect both the employer and the employee.

Mr. Taylor. I should make the same answer to this question as I did to the last: that all that is necessary under true scientific management is for the attention of the management to be called to the fact that a bad condition exists to have a scientific investigation started, the results of which should be satisfactory to both sides.

The Chairman. If the satisfactory handling of scientific management depends on the ideal condition of mind whereby the employer is willing to concede to the workmen that which each workman is entitled to, how, under the other phases of scientific management, is the workman going to be able to protect himself against imposition by any other process than that of collective bargaining?

Mr. Taylor. I think I have already stated, Mr. Chairman, that the workman has it in his power at any minute, under scientific manage-