

country. They resent the use of the word science for anything quite so trivial as the ordinary, every-day affairs of life. I think the proper answer to this criticism is to quote the definition recently given by a professor who is, perhaps, as generally recognized as a thorough scientist as any man in the country—President McLaurin, of the Institute of Technology, of Boston. He recently defined the word science as “classified or organized knowledge of any kind.” And surely the gathering in of knowledge which, as previously stated, has existed, but which was in an unclassified condition in the minds of workmen, and then the reducing of this knowledge to laws and rules and formulae, certainly represents the organization and classification of knowledge, even though it may not meet with the approval of some people to have it called science.

The second group of duties which are voluntarily assumed by those on the management's side, under scientific management, is the scientific selection and then the progressive development of the workmen. It becomes the duty of those on the management's side to deliberately study the character, the nature, and the performance of each workman with a view to finding out his limitations on the one hand, but even more important, his possibilities for development on the other hand; and then, as deliberately and as systematically to train and help and teach this workman, giving him, wherever it is possible, those opportunities for advancement which will finally enable him to do the highest and most interesting and most profitable class of work for which his natural abilities fit him, and which are open to him in the particular company in which he is employed. This scientific selection of the workman and his development is not a single act; it goes on from year to year and is the subject of continual study on the part of the management.

The third of the principles of scientific management is the bringing of the science and the scientifically selected and trained workmen together. I say “bringing together” advisedly, because you may develop all the science that you please, and you may scientifically select and train workmen just as much as you please, but

unless some man or some men bring the science and the workmen together all your labor will be lost. We are all of us so constituted that about three-fourths of the time we will work according to whatever method suits us best; that is, we will practice the science or we will not practice it; we will do our work in accordance with the laws of the science or in our own old way, just as we see fit unless some one is there to see that we do it in accordance with the principles of the science. Therefore I use advisedly the words “bringing the science and the workman together.” It is unfortunate, however, that this word “bringing” has rather a disagreeable sound, a rather forceful sound; and, in a way, when it is first heard it puts one out of touch with what we have come to look upon as the modern tendency. The time for using the word “bringing” with a sense of forcing, in relation to most matters, has gone by; but I think that I may soften this word down in its use in this particular case by saying that nine-tenths of the trouble with those of us who have been engaged in helping people to change from the older type of management to the new management—that is, to scientific management—that nine-tenths of our trouble has been to “bring” those on the management's side to do their fair share of the work and only one-tenth of our trouble has come on the workman's side. Invariably we find very great opposition on the part of those on the management's side to do their new duties and comparatively little opposition on the part of the workmen to cooperate in doing their new duties. So that the word “bringing” applies much more forcefully to those on the management's side than to those on the workman's side.

The fourth of the principles of scientific management is perhaps the most difficult of all of the four principles of scientific management for the average man to understand. It consists of an almost equal division of the actual work of the establishment between the workmen, on the one hand, and the management, on the other hand. That is, the work which under the old type of management practically all was done by the workman, under the new is divided into two great divisions, and one of these divisions is deliberately handed over to those on the management's side. This new