

inating delays. The workmen have taken advantage of these better conditions and have steadily increased their output, so that during the first six months of the year, the average weekly earnings increased 24 per cent. This average covers all producing departments. The erecting shop itself was above that average.

The quality of workmanship on the cars has so far improved that there are practically no delays caused by work not passing inspection. Delivery dates have been set far in advance and these promises consistently met, which has eliminated the payment of penalties for non-delivery of cars within the contract time.

In 1929 the total sales and production were 33 per cent above the previous year. The orders for 1930 are all booked and the production will be 55 per cent greater than in 1928, with a slight decrease in the number of workmen. The increased production per workman therefore amounted to 33 per cent last year and 61 per cent this year.

The investment in labor-saving machinery has been comparatively small, but this year there will be a larger investment in order to realize additional savings. The inventory at the beginning of this year was 5 per cent less than at the beginning of 1929 with the 33 per cent increase in production.

The unusual progress of this plant attracted the attention of an American company which has recently made a contract with the state railways and the car building company to finance the purchases of cars to the extent of forty million dollars during ten years.

One of the changes which is becoming more and more important is the displacement of workers due to the introduction of labor-saving machines or better methods of management. In one country we are recommending that clients issue a statement somewhat as follows before our work begins:

"In these days of ever growing competition, firms in all industries are finding that the only way to meet this competition and maintain their position in industry is to reduce their costs of production. We are no better off in this respect than our competitors, and if we mean to keep our position, or still more to better it, then we also must take every means for increasing our output and reducing our prices.

This means that unnecessary work must be eliminated and wherever possible better tools and

machines must be introduced, so that for the same effort more quantity and a better quality of goods can be produced. This is the only way to reduce costs without reducing wages.

"In the case of other companies the installation of improved methods has often led to a reduction in staff. In our endeavor to use the best outside advice to add to our own accumulated knowledge, we have been happy in securing Mr. Wallace Clark to co-operate with us in the program of improvement which we are about to undertake, and he assures us that reductions in staff are not necessary if proper provision is made in advance.

"It is obviously necessary for us to recover the cost of improvements, but there are nevertheless many ways by which the existing staff may be maintained. For instance: (1) if prices are lowered, so as to pass on to the consumer the advantages of the improved methods, this will often lead to increased sales; (2) or by better advertising it may be possible to expand the market for our goods in readiness to absorb the greater production; (3) sometimes the labor that is not required for expanding quantity can be absorbed in improving quality; (4) or in improving our service to the public; (5) sometimes we shall start a new line.

"In the past there have been times when changes in business conditions have rendered certain products unprofitable. Whole departments have been shut down and the staff dismissed. By better forecasting we hope to avoid the recurrence of such conditions, but in every other case where changes or improvements might seem to lead to a reduction in staff, we are, on Mr. Clark's advice, willing to undertake by some means or other to reabsorb all the displaced labor, in our works, at full pay."

Before the war scientific management dealt principally with problems and conditions which remained fairly constant in any given plant.

Now any methods of management to be effective must be able to meet the constant changes in industry. Organization for change means opening men's minds, not only to meet but to anticipate new forces and to control them. They learn to say that nothing is impossible. They voluntarily give up their traditional attitudes toward conditions and people. Greater than any changes in industrial methods that America is giving to Europe and the rest of the world is this change in men's minds.

A French Workman's Opinion of American Mechanization

A Review¹

By J. DOUGLAS BROWN

Director, Industrial Relations Section, Princeton University

WE ALL like to have others tell us what they think of the way we do things, especially if their comments are complimentary. Even if a few thorns occur in the bouquet, we do not mind since this proves that the flowers are real. National pride is immediately aroused when a foreigner recounts to us his impressions of our country, our literature, art, music or any other form of cultured expression. We feel timid and uncertain as we listen to criticism of these elements in American life, however, since many Europeans from Dickens on have seemed somewhat frank and wilting. But when our industrial activities are the subject of comment, a warm flood of self-satisfaction fills our being as we sit back to receive enthusiastic compliments.

M. Dubreuil, a French machinist and leading trade unionist, does not disappoint us, at least as long as he tells of impressions obtained within our great industrial plants. With exceptions here and there, it is polite surprise or happy exclamation. Sometimes the reader begins to look for the bitter underneath the sweet, but the bitter is quite diluted. The book appears to have been written more to arouse the French industrialist back home than to evaluate precisely or commend the success of the American manager. For this reason the high lights are touched up a little just as the painter brings out the strong features of the wealthy patron whose portrait is to grace the directors' room.

While M. Dubreuil covers in relatively few pages the bigger problems of our industrial system—such as the business cycle, unemployment, financial insecurity of labor, or the methods of collective negotiation—his experience and contact with these problems during his stay in America were necessarily slight. We must, therefore, seek in his account those impressions which bring light on shop practice or industrial relations in the narrower sphere of day to day activity in the going concern. The plants he selected to visit were in the main highly efficient. While a trade unionist of long standing

¹Dubreuil, H., *Robots or Men?* New York, Harper & Brothers, 1930.

at home, he seems to have concentrated his attention in this country on factories not recognizing union labor. He studied more the effect of management on men than men on management.

The first shop in which M. Dubreuil worked serves as a drab background to the more vivid colors used later in painting his picture. The job was secured through a parasitic employment agency. In the shop the "rule of thumb" prevailed and in designing a new appliance the foreman did some freehand drafting with chalk on the cement floor. Although several identical appliances were to be built, measurements were carried in the foreman's head and, if lost, were obtained by repeated drafting in the same manner. Work was assigned in an offhand manner, at the whim of the foreman. To obtain materials, in one instance, the men were directed to seize upon some stock which was lying about the yard lest some other crew take it. Finding his wages below those of his fellow workmen, Dubreuil asked for an increase, but was stalled off by the time-honored method of the foreman forgetting the matter until too late to make the change that week. The only symbol of efficiency which appeared in this shop was a dust broom four feet wide in the hands of one of the sweepers.

From this depressing spectacle of American inefficiency we are transported to its extreme contrast—Ford's. To get a job in Detroit was not easy, however, since the Ford plant was being overhauled for the new model. Waiting in the long lines in the cold outside the employment office became a new experience and only by assuming the occupation of a die maker and some fictitious experience did Dubreuil get by both the outer and inner offices. After time-consuming preliminaries he was employed.

The impression gained while working at Ford's was one of great efficiency. Dubreuil was struck here, as elsewhere in modern plants, by the great extent to which human physical effort was replaced by mechanical handling. His conclusion was that greater output was not obtained at the expense of greater activity or by rhythm harder to endure, compared to that found in French factories. He is less definite in stating his reactions as to the effect of repetitive work on the worker. Although the American title of the book is "Robots or Men?" we find less judgment based on experience and