



His work is lighter, his day is shorter and his pay is greater than at any former time. Benefits have also been derived by that great class of laborers not directly connected with agriculture. Many of the foods which are today looked upon as the absolute necessities of life were considered luxuries before the introduction of improved farm machinery. Wheat bread is today one of the staple foods of almost every person in America but a century ago it was found only on the tables of the wealthy, at that time corn meal and potatoes or other vegetables formed the food for the laboring classes.

To conclude—Due to the introduction of improved machinery, agriculture has made more advancement during the last century than during the preceding four thousand years. There is today an automatic labor saving machine for almost every agricultural process. Laborious toil for the tiller of the soil is almost a thing of the past and the term horny-handed tiller of the soil has no real meaning in an up-to-date agricultural community. The importance of the farm machine upon the farm can hardly be over estimated, for under present conditions success or failure in farming operations depends largely upon the careful selection and judicious use of farm machinery.

By H. Ewart Walker.

To one whose privilege it has been to travel from country to country throughout the world, and to notice the various means in vogue for carrying out the ordinary farm operations—from the antiquated to the most modern implements—the vast importance of the farm machine upon the farm must have made a great impression upon him, and have been the cause of many an unconscious comparison being made. In taking up a pen to write upon this subject one feels that it is only possible to touch upon its very verge, and indeed the extent of the theme is almost overwhelming.

In looking around our western lands it is obvious, to a thinking person, the premier place occupied by the agricultural machinery in bringing under control, and in developing, the vast prairies, which at no very long

past date practically knew only the Indian and the buffalo. The expressions which escape from the lips of a visitor from the older countries, whether a scientist, editor, or whatever sphere he may represent, upon seeing the implements used by the Canadian farmer, are certainly striking.

As we peruse the history of the farm machine and not its evolution, we find that, to all practical purposes, it is only during the last sixty years that any development has been made. As with most other industries the change from hand to machine methods has been a very gradual process, and the path of development of the farm machine has not always been a smooth one. Various instances might be quoted to show the action taken

ments, and the numerous inventions in farm machinery. Because of this deficiency inventors in the States, were induced to turn their attention to the construction of labor saving machinery for the farm. In this they met with less discouragement, as far as the laborers were concerned, than did the inventors in the old countries. This was owing to the fact that the scarcity of labor was acute enough to remove from the laborers any fears they might have felt as to the loss of position, due to the introduction of machinery, and there is no doubt whatever that the modern farm machine has a place as a labor saving device, and that it fulfills a very important duty in the profession of farming. To endeavor to see the vast import-

say, that an advance in the general economic welfare of over one hundred per cent. was made within a period of fifty years. In the world today, the production of food and fibre absorbs about three-quarters of the male workers. In the United States during the early decades of the nineteenth century, about eighty per cent. of the male workers of the nation were employed on the farm. During the past century, however, farm implements and machines have come into use which have so increased the efficiency of labor that about thirty-five per cent. of the male workers, produce the food and fibre of the nation and furnish an enormous surplus which is exported to other countries. If we assume, what is certainly true, that the farmer is to be considered as a manufacturer, not as a miner, and that his profits are a function of his investment, we may safely infer a greatly improved economic condition with the introduction and use of farm machinery.

Let us glance, in the first place, at the conditions which existed before the introduction of farm machinery. There were many disadvantages under which the various crops were grown before any extensive use was made of machinery, and the tillage by hand was slow, very laborious and generally speaking of a very imperfect character. The first tillage implements which were of a very crude nature were much less efficient than the hand tools. The first motive power used on the farm was the oxen, and these supplied the necessary power, and as the necessity of fast motion and accuracy was not felt, owing to the simplicity of the implements used, they served their purpose well in the earlier period. The hours of labor under this system were very long and it was a common occurrence for the laborers to work sixteen hours a day in the field. The amount of labor employed was also proportionally large, when compared on a basis of acreage, with the standard of the present day, and it is estimated that it required five times as much hand labor per acre as is now used. For many reasons the quality of the finished produce was of an inferior character, as for instance, it was practically impos-



This is where the Tractor makes good.

by the laborers in the old countries, who wished to show their hatred for the various innovations as they were made. Some of their devices were even dangerous to the persons operating the machines. To note one, which while not very serious, yet nevertheless caused considerable trouble one might go back to the early days of the horse mowing and reaping machines in Britain. It was a common occurrence to find iron stakes driven into the ground among the crop, and when the knives struck one of these it meant the machine was put strictly out of business. Much space might be taken up quoting like instances, but we will let this one suffice.

In America, the lack of labor was chiefly the cause of the rapid development and improve-

ance of the farm machine upon the farm, it is perhaps best to measure it by the influence which it has had upon the farmer and the farm. Though many in number, these influences can all be classed under two divisions or heads, first the economical, and second the technical, and it is in tracing out the relations of the various influences to their respective heads, that one can see, in a general way, why the farm machine is considered to be such an important factor in the farm life.

The side which most naturally appeals to us, is the economic one, as it is the most evident. If figures were quoted it would be conclusively proven that the farmers in 1899 were one hundred per cent better off than they were in 1849. That is to

