

LESSON 1.

The Farm a Factory.

The days of the serf are a thing of the past. Through civilization directly and through efficient farm machinery indirectly, the farmer has come unto his own until today in all civilized countries he is the mainstay and back bone of his country's industrial progress.

If Edwin Markham had waited until the present time for inspiration to write his masterpiece, "The Man with the Hoe," it would, doubtless, never have been written, for the subject of the inspiration would be lacking. "The Man with the Hoe" is a thing of the past. The "Farm Implement" is making ten blades of wheat grow where one would have grown had the old conditions of farming continued to exist. The development along agricultural lines has been a marvelous one. It has not been an easy path for those concerned to follow, but the results up-to-date have thoroughly justified the efforts put forth, until today the modern farm can be justly classed as a "Factory" and the farmer as an "Engineer," working out the problems that come under the head of that broad term known as "Agricultural Engineering."

The profession of "Farming" is a dignified one. No greater problems ever come to any one in any profession at any time than those with which the modern farmer is compelled to deal. The bringing of the soil to a proper state of cultivation, the purchasing of farm equipment, the laying out and erecting of suitable farm buildings, raising and breeding live stock, etc., etc., all call for the services of an engineer who knows what he wants and who knows the shortest and most economical way to get it. Farming today is something more than mere, buying a piece of land and rais-

The AGRICULTURAL ENGINEER

Every farmer is an engineer so to speak. He works in the biggest factory in the world and his products are world products. His usefulness to himself and to others depends largely upon the efficiency and intelligence with which he handles the tools of his handiwork. In this series of lessons which will extend over a considerable period, we propose to deal with farm machinery in detail as it applies to crop production. We trust to make this department interesting and instructive. Questions will be cheerfully received and answered.

ing thereon any kind of a crop. It is a "Factory," with "Mother Earth" as the raw material, which is to be turned into finished products—crops and live stock, under the guiding hand of a skilled engineer—the farmer. The success and quality of the finished products produced depends in no small degree upon the skill and energy of the farmer just as the products of our largest manufacturing establishments depend upon the ability exercised by the men who are in charge.

Let us take an inventory of Western Canada's portion of this big factory, for it is with this that we propose to deal largely in the future discussions under this head, and it is well in the beginning to take stock of just what we are working with. As the figures for 1911 are scarcely available in accurate form, it will be necessary to deal with those for 1910. We will deal with Manitoba first and then Saskatchewan and Alberta in their regular order.

We find that in Manitoba there was plowed and in crop in 1910, 2,962,187 acres—quite a big farm, isn't it? A four horse team will plow on an average about three acres per day, so that it would take one such team 987,395 days to turn over Manitoba's cultivated area in 1910. Further, taking one year with another, about 60 days per year is all that can be utilized for plowing purposes, and on this basis it would take this same team 16,456 years to put Manitoba's cultivated area in 1910 into a plowed state. The above figures are of no practical value, but are

simply given to show the size of a portion of this factory with which we propose to deal.

Saskatchewan's crop area at present is in the neighborhood of seven and one-half millions of acres, which makes quite a big farm, and, moreover, a big addition to our "factory."

The province of Alberta will also add materially to our "factory," making it withal the biggest industrial enterprise in Canada. And we must not forget British Columbia, for while its "factory" products are somewhat different than those of the three prairie provinces, it nevertheless plays an all important part in our scheme, as we shall see before we are through with this series of articles. For the present, however, we shall deal only with Manitoba, Saskatchewan and Alberta.

Now what are the products of our factory. This year the Dominion Government estimates that these provinces will produce 184,728,000 bushels of wheat, 204,758 bushels of oats, 830,205,000 bushels of barley and 7,465,000 bushels of flax. But this is not all. We must further reckon with a vast mountain of potatoes, millions of pounds of butter and cheese, an enormous amount of poultry, millions of tons of hay, and live stock from thousands of pastures and feeding pens. Garden vegetables, wool, etc., etc., all come in for their share of attention, making our "factory" product a very wealthy total. From Winnipeg to the Rockies, the limits of the grain growing are, as a territory, so vast, so fertile and, as yet, so imperceptibly scratched,

that we hesitate to put its real value into figures, for the reason that they would be so large that the human mind could not begin to grasp them.

This "factory" is a God given heritage. For thousands of years the prairies lay sod locked in their virginity, unknown to any human eye, or traversed by nothing but the beasts of the field. Then comes the hunter, the trapper and the adventurer to spy out this land, whose fabulous wealth was as the "Gold of Cathay." The Hudson's Bay Company were the next to see its opportunities, and they, for a considerable time, were the sovereign lords over its development. Development, did I say? They opened up nothing but the trading post and produced no industry, unless that of bartering with the Indians might be called one. However, this company must be given credit for "blazing the trail," and making it possible for the real "factory" worker to come in and pry open the virgin prairies and turn them into grain and live stock raising areas, until today there is over 3,000,000 acres of the best grain raising land that the sun ever shone upon either under cultivation or in such a condition of accessibility that it can be made so.

In those early days "factory" life in Canada West was anything but fun. Transportation was by means of the ox cart. The prairie breaker, drawn by the slow going ox over a little stretch of furrow, was a "tool" so slow as to discourage any but the bravest and the sturdiest. The broad prairies looked illimitable; the task of their subjugation an apparently endless one. The "factory" was so vast as to almost lose its few workers, and to those early pioneers, who gave us of the best that was to be had in the way of sturdy persevering manhood and womanhood, we must bow our heads

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