

pounded or swung around, or else in a vessel quite similar to our old-fashioned barrel churn. It is not very many years since the old-fashioned dash churn and implements of this kind were used for the manufacture both of butter and cheese. Then someone introduced the application of power, such as horse power, steam power, the introduction of the box churn and one after another applications of the various kinds of machinery began to be made, till now what have we to-day? We have a machine that can be set up in the barn to milk the cows. Although this machine is in an undeveloped condition, nevertheless it does its work and proves we are on the right track. That milk drawn by a machine can now be put into another machine and by means of it the skim-milk comes out of one spout and the cream out of another. This cream can be put into another vessel or machine, and by proper temperature and the addition of a substance somewhat resembling yeast, a fermentation can be started, and just that kind of fermentation that we desire in connection with it. After the fermentation has gone on a certain time this can be put into another machine and churned, and after churning it can be worked and packed by machinery. So that now it is possible, although not altogether practical, from the very milking to the putting of the finished article on the market, to do the whole of the work by machinery. This wonderful progress has taken place within the last quarter of a century.

As we look at farming in its different aspects, machinery has been applied at this point and that point, and agriculture is being put on an equality with the manufacturing establishments of our towns and cities. You ask yourselves this question, "Why have our great manufactures in the towns and cities developed?" The principal reason for this is in the application of machinery to the work. Why is it that machinery has been developed in connection with all these other industries and yet it has taken so long to bring the attention of inventors to the work of agriculture? Well, one reason is that there has been no great necessity for it until recent years. We sometimes hear it said that the men are leaving the farms because they are not required, because so much machinery has been brought in that a man with a machine can now do as much work as a man and two hired men could do before. There is another side to that question, viz., because of this drawing away of so many farmers' sons from the farms to the towns and cities, because of the want, therefore the supply of machinery has been produced. Both of these things no doubt have been effective. That is, machinery has been produced because it has been required; and people have left the country since they were not required because of the presence of machinery. According to the census of 1891 there were farmers and farmers' sons in Canada to the number of 649,506, in 1881 there 656,712. From '81 to '91 the number of farmers and farmers' sons in Canada decreased by over 7,000, yet during that period we had the opening up of Manitoba and also of the North-West, and the agricultural product of Canada is greater to-day than it ever was before. If you put these two or three facts together you can easily see the great part machinery has been playing in connection with agriculture in Canada for the last ten years. Although the number of farmers decreased to the extent of 7,000, nevertheless the total output of agriculture has vastly increased. This is owing to a great extent to the application of improved machinery in connection with agriculture.

The next point in connection with agriculture that I wish to refer to is one that comes as a sort of rider to the last; a companion to it, namely, the application of science to agriculture. Now, in certain quarters the moment you begin to talk about the science of agriculture and scientific farming an objection is raised and people say there is nothing scientific about it, it is all practice, and when you find a scientific farmer you find a farmer who does not make much progress.

I desire to give a few facts to show that science has been applied quite successfully to the improvement of agriculture in this country, and further, that just as we bring to bear upon agriculture the latest and best developments of the different sciences, so we may expect agriculture to make improvement. One of the great reasons why agriculture remained on a dead level for so many centuries was simply because the attention of scientific men had not been directed to agriculture as a field for investigation. Scientists had been expending their time and energy with the work that is carried on in

towns and in calling of agriculture a wonderful development of the result of which

Let us try very much it belongs so to about it likely which probably that there is For instance, our common feeding, there another year. table. Suppose you as an audience you would want would have a in fact there feeding differ. a little lower were different would be a possible and finally be fed upon that you could not devour; what large feast, so that soil this year another from the one of and so on by the wants of exhausted the would have been soils of this country year and so on, left for the cases what was after a number different crops

I want to think there is all may be, that fed in a different the minds of survive? How does examination, soil air. Others correct that it got its attention of most there were little plants had been little more inquiry question serious part in the economy