

attract farmers from all over the country, especially as the entrance fee is only 25c. For a farmer or a farmer's wife, interested in poultry, it will be the chance of a life-time, and the means of a considerable addition to the income from this important branch of farm life.

Prize lists can be obtained from the secretary, Mr. F. W. Hodson, Parliament Buildings, Toronto.

The Institutes in Their Relation to Farmers.

By Col. O'Brien, Shanty Bay, Ont.

It is worth while before beginning the work of another year to enquire what results have been attained in those which have gone by, and especially to ascertain how far the farmers themselves have derived any practical benefit from the efforts which have been made on their behalf. In the first place it may be said that the institutes, through the meetings which they hold, are the machinery by which the results of the scientific investigations carried on in our experimental farms and colleges are made known to the farmers. To a great extent this is done by the distribution to the members of the institutes of the publications from the experimental stations. In this way, at a nominal cost, the farmers receive the fullest and latest information from the various subjects in which they are interested. A few of these may be mentioned to show the practical value of such information. It is not too much to say that in the matter of dairying, in its two great branches of cheese and butter making, a complete revolution has been effected which has increased the value of these productions by millions of dollars. Our export of cheese has risen to the enormous annual value of over seventeen millions of dollars. It is true that in the making of cheese, private enterprise has already laid the foundation for this great and profitable industry, but scientific investigation has largely aided in its progress and development. Errors have been detected, better methods have been suggested, and a sure basis has been found, by chemical analysis, upon which the work should be carried on, so that much that before was a matter of conjecture is now reduced to absolute certainty. The art of butter-making hitherto depended for success upon the individual skill of the dairy woman, from having been scientifically dealt with, can now be carried on with the same certainty as to result as any other manufacture. With such success has this been done that a new article of export has been created which bids fair to rival in value the article of cheese, and to double the return from every pound of milk which the farmer produces, to say nothing of the saving of labor to the women of the household. In proof of this we have the fact that the butter

exported in 1896 was valued at over \$1,000,000, while in 1897 it rose to the value of over \$21,000,000.

Again in regard to the cultivation of the soil, upon which success in every branch of agriculture depends, and on the application and treatment of manures, how many improvident methods have been pointed out and improved ones suggested—all based upon investigations and experiments which no farmer could carry on for himself. For instance, the farmer has not only been taught that frequent surface cultivation of the soil between the rows of his turnips and his corn helps the growth of these crops, but he has been given the scientific explanation of the fact.

Again, having been shown what are the various substances of which plants and animals are composed, he is taught the value of all kinds of both plant and animal food—where they are to be obtained and how and in what proportion they are to be used. For example, he is shown the value of clover as a manure, and how that value is obtained. He is informed as to the relative value of food for his cattle, and for the production of beef and milk, of the produce of the turnip field and of the silo, of the precise period at which his corn should be cut, and in a variety of ways he is thus enabled to avoid mistakes and to carry on his work to the best possible advantage.

But not only in the distribution in a written form of this kind of teaching is the Institute of value. By means of lectures and addresses, and in the discussions which follow and the explanation then given, many persons are more impressed, and better informed, than by reading. And we get another valuable result from these meetings. The mind of the farmer is liable to stagnate and grow dull while merely going on in the way to which he has been accustomed, doing things he knows not why, ignorant of the most elementary facts on which success or failure depends, 'is roused by attendance at these meetings to think and to enquire for himself, to find out what others do and think, and thus go to work on new methods, and not only to do things but to understand why he does them, or why he should not do them, in short, the intellectual side of his nature is stirred and he becomes a thinking and reasoning as well as a working man.

This result leads to one far reaching and most useful. The farmer, from this teaching, begins to learn the true nature of his calling. He sees that it is not that of a mere clohopper, cut off from all that is interesting or ennobling, either of body or mind. He finds out that it calls into play all the resources of nature—that the sciences of geology, chemistry and botany, and indirectly many others, are tributary to it—that the most hidden things of vegetable and animal life must be enquired into for his benefit, that not only must

he plow his land, but he must learn of what the soil is composed, what it has and what it lacks; one substance required he must abstract from the air, another he must supply in the shape of manure, and so with every operation on his farm he perceives that he has use for a greater variety of knowledge, and a wider scope for the exercise of his mental faculties than any single pursuit that can be mentioned.

This again points out a way in which we may hope to overcome one of the greatest difficulties. We have frequently had cause to regret the fact that so many of the best of our young men turn away from what they deem the dullness and the drudgery of the farm to seek happiness and fortune in what seem to be easier, or more intellectual modes of life. What better cure can there be for this unfortunate condition of things than showing how mistaken is the idea that the life on the farm should be either dull or void of interest, unless the farmer chooses to make it so by shutting his eyes and closing his ears to the possibilities, as well as the necessities of its existence? With enlarged ideas upon this subject will come a desire for better cultivation of the mind, as well as of the soil. And with mental self-respect will come more respect for the person, and all his surroundings. The terms of slight, if not contempt, sometimes applied to the farmer for his too often slovenly appearance will cease to be applicable, and in dress and demeanor he will be able to hold his place both at home and abroad with the best in the land.

If ends such as these (and the list is by no means exhausted) can be practically attained by the operation of the Farmers' Institutes, who will say that the trifling cost of time and money which they entail will not be repaid a thousand fold?

The Ventilation and Temperature of Stables.

By Dr. J. W. Smelser, V.S., Woodbridge, Ont.

The proper ventilation of our stables has great influence in determining the health and vigor of the animals lodged in them. Although attention of late years has been directed to this subject, and considerable improvements carried out in the management of some of our best stables, yet as a general rule the ventilation of the majority of stables will be found very deficient. The breathing of pure air is essential to the health of man and beast, and in proportion to the purity of the air inhaled will be found the vigor and efficiency with which the functions of the body will be performed. There are two chief sources from which the impurities of the stable are derived, namely, the changes produced in the air by the process of respiration and the gaseous matters which are formed by the decomposition of excrementit-