

## Agriculture and Colonization.

Experiments to illustrate the value of certain mineral manures upon muck soils sown with peas.

		Weight of Produce.
Pot A 1.	Muck soil, no fertilizers . . . . .	21 grams.
Pot A 2.	“ × 5,000 lbs. wood ashes per acre . . . .	32 “
Pot A 3.	“ × Wood ashes, 2,500 lbs.; Marl, 2,500 lbs. per acre . . . . .	28 “
Pot A 4.	“ × 1000 lbs. wood ashes per acre . . . .	35 “

We shall continue the experiments with finely ground mineral phosphate, to ascertain if the presence of fermenting barnyard manure will render its phosphoric acid more available. I trust next year to be able to give the Committee some important information on this point. A further research will be to ascertain exactly the condition of plant food in certain naturally-occurring fertilizers. The question, for instance, of the value of marsh muds in the Bay of Fundy is one concerning which there is great dispute. You will scarcely find two men who hold the same opinion with respect to the value of marsh mud as a fertilizer. This can be explained, to some extent, on the ground that mucks differ in their composition. Some contain notable quantities of lime; others are rich in nitrogen. Some farmers have applied these muds in large quantities; others in small quantities. Sometimes they are applied to light lands; sometimes to heavy lands. Having gained a general knowledge of the total amounts of plant food they contain, we now want to learn in what condition these fertilizing elements exist. It might be well to have a collection made comprising samples from different points on the Bay of Fundy, and then make a systematic examination of the condition of the plant food. With regard to wood ashes, some of the manufacturers of fertilizers have entered a mild protest against wood ashes, saying that kainit and muriate and sulphate are better forms of potash. They say that wood ashes have not the agricultural value that chemists have ascribed to them. I think we should therefore make an investigation with regard to the exact condition of the potash and phosphoric acid in wood ashes. I have already spoken highly of wood ashes as a fertilizer and I need not say such an analysis as I have indicated will be a matter of great importance to our people.

Then, we wish to make a more general and systematic examination of the well waters of farms, especially on those farms producing milk. Such an investigation will result in doing away with a great deal of the poor and tainted milk which now finds its way to our cities, creameries and cheese factories, and means loss to those supplying milk. It should also result in better health on the farms, for our farmers and their families, and also in the better thrift of farm animals.

Several years ago we commenced a research into the relative food values of the native and introduced grasses. We have put into bulletin form the results of the analyses of nearly 200 varieties of grasses. That work has been continued and we trust to be able to publish some further particulars in this important matter.

Another question closely related to fodders is the relative value of roots. This is a question of much interest to dairymen and stockmen and I wish to procure more definite knowledge as to the value of different root crops as fodders.

We should also endeavour to continue our researches in connection with the Babcock test. There is need at the present time for an investigation to settle definitely the accuracy of the Babcock method for determining the value of milk for cheese-making purposes. In past years we have already done work which has proven conclusively that it is a reliable method and a cheap one for ascertaining the percentage of butter fat in milk. There can be no doubt of that fact at all, but the question has arisen whether the percentage of fat represents the true cheese-making value of the milk. The one who has done the greatest amount of work in this matter, and consequently is an authority on it, is Dr. Van Slyke of New York. He says, conclusively, that the fat is a direct indication of the value of the milk for cheese-making, because the curd increases with the butter fat