

of two cents a pound in buying seeds caused hundreds of dollars' worth of damage. Some careful farmers brought their own feed for their horses when they came to market, and by so doing avoided giving the animals deteriorated food and the resultant breeding of weeds from the manure. By the importation of clover fodder, weeds were apt to be introduced on the farm. There were, he proceeded, about fifty obnoxious weeds. Wild rose was the one that was annoying the farmers in Manitoba. In this locality the weeds that troubled the farmer most were the Canada thistle, ox-eyed daisy and quack grass. By ploughing shallow—not more than four inches deep—quack grass would be eradicated. Weeds should be divided into one year, two year and many year plants, and further distinguished as long root and shallow root plants. For annual plants there was only one treatment, and that was to put in a crop that would be cut before the weed seeded. Seeds must be fresh in order to grow, and weeds are no exception to the rule. To clean the grounds of weeds was not only to take out the weeds but to remove the seeds which were in the ground. Time must be taken, and the farmer must persist in the work of killing the weeds as they come up. They should be fought when young. It was all rubbish to imagine that ploughing in weeds would fertilize the ground. The penny-cress or stink-weed was an obnoxious weed in Manitoba, and the farmers were ploughing down the good crops to kill it. A weeder or fall harrowing would do it well.

The perennial plants were more difficult to handle. It was important to find out whether the weed was of deep or shallow root growth. It has been said that leaves were the lungs of a plant. While this was true, it should be remarked that they were also the stomach of the plant, because, while the leaves did breathe in gases the object was to secure nourishment for themselves. Cutting the stems was not sufficient. In the autumn there was a second growth which must be attended to. The devil's paint brush was destructive to pasture. Salt at the ratio of a ton and a half per acre was the remedy. During the past ten years fruit trees had been sprayed, and the fruit growers were saving 85 per cent. of what had been lost hitherto.

Prof. Robertson, Agricultural and Dairy Commissioner, Ottawa, delivered several practical addresses of interest to farmers and dairymen on the following topics:

#### FARMING AS AN OCCUPATION.

Canada was essentially an agricultural country. Of its people forty-five per cent. were engaged in agriculture and the progress of the country depended on its farmers. After instituting a comparison between the farming population and the value of their productions and all the other industries of the Dominion he said that the more he learned of the character, extent and availability of the agricultural resources of Canada the greater was his confidence that material prosperity would abound in this favored land. He emphasized the fact that the basis of prosperity and the means for attaining and maintaining it were not so much rich soil as intelligence, industry, skill, frugality, fairness, tenacity and untiring energy on the part of the people. He dwelt on the aid which the farmer had in the way of machinery, and pointed out that his own industrial life should parallel the progress made in this respect. He referred to the vulgar corruption of education and very strongly emphasized the fact that true education meant not the cultivation of theories but the ability to employ all the faculties of the mind in the best and most direct way.

#### THE STABILITY OF THE CANADIAN CHEESE TRADE.

About twelve years ago, he said, Canadians had adopted a systematic plan of cheesemaking, thus producing a uniform quality, which found favor in the British market. Of late, however, the taste of English consumers had changed, and the demand now was for a very insipid, mild-flavored cheese. It was necessary to cater to this taste if the market was to be retained, and unless Canadian makers cured their cheese at a low temperature their trade would

decrease. The curing-room, he said, ought to be kept at 61 or 62 degrees. A warm curing-room would make the cheese strong. If a curing-room went up to 90 degrees there would be awakened in the cheese dormant life, which could not be killed. Some makers had one stove in the curing room, and the result was that the cheese near the stove was roasted, while the temperature at a distance from the stove was allowed to go down to fifty or forty degrees. Improvement in the curing room was needed, and a uniform temperature should be maintained. Double doors and windows should be put on and kept on all summer. The walls and floor should be made light and close by two thicknesses of building paper and one thickness of tongued and grooved lumber. A building should cost from \$125 to \$200 inclusive of the ice house and curing duct. An old curing room should be washed with lime to kill the fungus growth. A curing-room in the cellar, properly ventilated, would make a good curing-room, and the cheese would not sweat.

#### THE REARING AND FATTENING OF SWINE BY DAIRYMEN.

All breeds of pigs, he said, could be kept with profit by the dairymen. He then entered on the proper methods to be followed in looking after them. He pointed out that the floor must be of wood, and not of cement or stone, the walls should be of wood or cement. Pigs were sensitive to cold and exposure and should be protected both in and out of doors. The pen in which they were housed should be clean, warm and well-lined and absolutely free from draughts. He impressed his hearers with the falseness of the old superstition that hogs were filthy in their habits. The fact was they were cleanly, and if the owner of these animals would see to it that the pen was kept clean for a few days the hog would after that keep it clean himself. He advised giving the hog during the winter a sod every day to chew. These sods could be cut in the fall and allowed to dry. The food should never be decayed and the pigs should never be overfed.

#### BACTERIAL INFECTION OF MILK.

This subject was discussed by Dr. W. T. Connell, Bacteriologist of the Kingston Dairy School.

Milk and its products, butter and cheese, he said, afforded excellent food material for the growth and rapid multiplication of those species of microscopic plants which were termed bacteria germs or microbes. If we examined milk some hours after milking there would be found large numbers of bacteria as a fairly constant factor. Further, it was a fact that in and about dairies and factories certain species of bacteria were found to flourish abundantly. If the cows, the milk sheds and the factory were well and cleanly kept, then only those species of bacteria which were commonly associated with milk, and which induced those processes which were looked at as natural, such as acid production and souring in milk, obtained a foothold. If, however, the reverse was the case, and little care was taken to keep the milk free from filth, dust or hairs during milking, or if the milk was kept in a place exposed to stable, yard or road dust, or if it was made at a factory which in itself or its utensils and surroundings were not cleanly kept, then it was usually found that the species normally present would have to enter into competition with those bacterial forms which flourished in such filth or dust. Dr. Connell emphasized the fact that the most common cause of trouble which the cheesemaker had to contend with was bacterial infection, which had its most common and constant habitation in the excreta of animals and in fowls and in dusts which contained decided particles of such excreta as was found in stable and road dust. From this source came mainly such conditions as bad or "off" flavored and grassy milk.

#### HON. SYDNEY FISHER

Delivered an address of interest to dairymen. He referred to the dairymen as the most skilful and intelligent agriculturists in the country. While in the Old Country last