

pounds each, and were divided into lots containing four hogs each. When the experiment is concluded the hogs will be shipped to The Wm. Davies Co., of this city, and then killed, cooled and salted under Mr. Day's supervision and the quality of the products of the various lots carefully reported upon. The data to be gathered from this will be very valuable indeed, and we will give full details as soon as the results are known. The experiments conducted in 1897 seem to indicate that a certain amount of exercise has a tendency to produce a better quality of bacon than non-exercise.

#### HORTICULTURE.

Mr. H. L. Hutt, in charge of this department, reports that they have had the best crops of apples this year ever grown on the farm, and as good as has been produced anywhere. He attributes this success largely to spraying. The orchard was sprayed seven times. The new orchard of peaches, plums, pears, etc., is doing well and furnishes conclusive evidence that these fruits can be grown in the Guelph district without much difficulty. Two hundred and twenty-five strawberries, raspberries, gooseberries, blackberries, currants, etc., are grown, and next season every variety grown in the province will be thoroughly tested. Mr. Hutt has a very valuable collection of bulbs, made up chiefly of tulips, narcissus and lilies. Bulbs are valuable as flowering plants because they come first in the spring.

#### DAIRY.

A large amount of experimental work has been conducted in this department during the past season under the direction of Professor Dean, some of which we have noted heretofore. At present some valuable experiments are being carried on to ascertain the effect of moisture and temperature on the curing of cheese. In the other departments good work is being done, and the college report for 1898 will likely be a most valuable one. Mr. C. A. Zavitz, experimentalist, reports good progress in the arrangements for the next annual meeting of the Ontario Experimental Union, which will take place at the college on December 7th, 8th and 9th next.

### Dairy Progress in Western Ontario

In an interview with a representative of FARMING last week, Mr. T. B. Millar, Instructor and Inspector for the Western Cheese and Butter Association, stated that as a rule the milk supplied to the cheese factories in Western Ontario the past season was of poorer quality than usual. He attributes this to the fact that the low price of cheese made patrons careless and neglectful in regard to caring for the milk properly. Many patrons do not think it pays to devote much attention to it when the price is low. This, Mr. Millar thinks, is the main cause of the quality of the cheese this year being somewhat inferior. This is to be regretted. Patrons are only standing in their own light by neglecting the milk whether the price is high or low. Even if the price is low the quality must be kept up or Canada will lose her hold upon the British market, a condition of affairs that would bring low prices every year.

In his work as inspector Mr. Millar has had eight parties summoned for tampering with milk supplied to the factories. All these parties pleaded guilty, and were fined from \$5 to \$20 each. A great many factories in the west are putting in butter-making plants, and will make butter the coming winter. As an example of the enthusiasm in this line Mr. Miller states that the Tiverton factory put in a butter-making plant last year, and, as a result, the farmers there have caught the silo fever. Five new silos were built the past summer on one concession line within a distance of  $1\frac{1}{2}$  miles. This is as it should be. To make a success of winter dairying farmers must have a plentiful supply of good, succulent food for their cows.

Mr. Miller, who is President of the Western Cheese and Butter-Makers' Association, states that this organization is growing very rapidly. Already it has a member-

ship of 250 makers. The agreement for mutual protection among the makers is signed by them whenever presented. So far there has only been one maker who has refused to attach his signature. A large attendance of makers is looked for at the annual convention, which takes place at Listowel, Ont., on February 1st and 2nd next.

### Farm-Yard Manure

By T. C. Wallace

In casting my eye over the various articles on manuring the press have accepted from me, it occurs to me that I may from them be open to the charge of not giving sufficient prominence to farm-yard or stable manures. It is not in my mind to under-rate the value of it, nor in any way attempt to displace it from its evident important place in rendering soils fertile; on the contrary, I desire to lay special stress upon it.

The droppings of the animals, the straw litter, and the various refuse material of the farm should receive our most careful attention, as they represent dollars and cents. Through the use of them we are returning to the soil most of the alimentary substances removed by the crops, and not sold directly off the farm. An animal during its lifetime on the farm returns in its manure droppings most of the material absorbed by it, as it is consuming food daily and almost as rapidly wasting away. More than that, if we are buying any farinaceous foods to add to the rations of our farm animals, we are getting nearly two-thirds of it in manure. The value of the farm manure is generally reckoned by its content of the three principal elements of plant nutrition present, but I think this is often, if not always, a false premise. It is valuable for its mechanical action, rendering the soil friable yet spongy, and capable of holding more air and water. Its acids, as they develop, assist in rendering the mineral soils available plant food, or fertile. As it decomposes its parts combine with other soil affinities, and form combinations of plant food. It assists in the formation of humus in the soil, thus ensuring available plant food. It makes the soil loose so that the tender rootlets can easily penetrate it. Finally, it gives back to the soil about all the material fed on the farm, except the bone elements, and, in the case of the cow—the milk production.

But an immense part of the value of the manure is wasted, which, in plain English, means that a great sum of money is lost to the farmers. The mechanical action of the manure is lessened by decomposition in the heap, and this must be very evident from the results obtained by careful experimenting, which have shown that a manure heap (even when carefully protected from the weather) reduced in weight nearly half in two months, and only 35 per cent. remained in seven months, and  $32\frac{1}{2}$  per cent. in nine months. We are told by such eminent authorities as Wagner, of Darmstadt, and Maercker, of Halle, that there are certain bacteria of farmyard manure which carry on a process of de-nitrification, whereby the valuable nitrogen of the manure is entirely lost to us. Their action is more active in fresh manure, as they cease to exist—or at least retire from business—after accomplishing their mission, but when their work is done there is little or no nitrogen to displace. Some people have been in the habit of adding things, such as nitrate of soda, to the manure, but it is quite clearly proven that in such case the total nitrogen of both the manure and the nitrate is dispersed.

A great deal has been written about the necessity of covering manure, but this is after all a questionable practice. If you are for some cause obliged to hold over your manure for some months before applying it to the land, you will do well to provide means to protect it from drainage at the bottom and from the sun's rays on top, but the roof over it will be the better not to exclude the rain as without sufficient water it will fire and great waste ensue.

All this, then, seems to argue in favor of the use of the manure as fresh as possible, and I think that I voice the opinion of most thoughtful men, who have studied the