

more than all the immigration agents, to advertise the resources of the country, in the most convincingly attractive way. In England, Canada is best known by her exports of cheese, and thus we are advertised in every house where it is consumed. The press of England, through our butter and cheese display at the Colonial and Indian Exhibition, gave us no less than six hundred miles of single column printing and circulation, free of all charge. With reference to Mr. Leitch's statements about the activity of the Australian, New Zealand and Danish Governments in the interests of the farmers, I may be permitted to say that no country has done more to open up markets for its dairy products abroad than Ontario. If Denmark is lately, through its government, sending agents to England to see that the Danish brands are not copied or counterfeited, it is open to question whether private business enterprise will not do more to protect and advance our dairy interests in English markets than the Government can. The prospect of high prices for cheese in years to come is not very bright. Perhaps an average of eight cents per lb. may be all we can expect. At any rate, our farmers should try to produce milk cheap enough to be able to sell at that price at a profit. The reduction of the cost of production will not lessen the price per lb. that may be realized by any dairyman in Ontario, but it will increase the margin of profit. We can produce cheese at as low a cost as any country; and if severe competition comes, we will not be the first forced out of the markets. The cost may be reduced by milking the cows ten months instead of six. The cow eats for twelve months in the year, and she should be kept productive for as many of them as possible. A large proportion of the cows should come in from October till January. By the common method of farming, a cow consumes annually the product of five acres. Three acres of pasture for summer, with two acres of hay for winter, are required, or their equivalent. Thus, a cow becomes a burden of expense instead of a source of profit. It is within the possibility of attainment by ordinary farming to make a cow live and produce abundantly from the product of one acre. Fodder corn as a crop has not been known or valued sufficiently. As a direct result of dairy conventions, dairy meetings, and agitation of the matter, at least 20,000 acres of fodder corn were grown this year more than in 1887. Frequently I receive letters from farmers, saying that from the crop of corn which they were induced to grow, a talk on corn has been worth \$50 or \$150 to them for this year alone. The planting of the corn should be done early in the season. Rows, three feet apart, with three or four grains to the foot, will give a close enough growth. The plants need abundance of sunlight and air. Occasional harrowing until the crop is six inches high will prove beneficial. Frequent cultivation is essential to vigorous growth. Moulding up or hilling of the soil are of no observable benefit to the crop, and, as it leaves the land in undesirable condition for fall ploughing, it is not to be recommended. Broadcast corn should not be sown more than one bushel to the acre. Every hundred acres of land should have twelve acres of fodder corn. From half an acre of fodder corn as much cow fodder can be got as from two acres of hay at one ton and three-quarters to the acre. However, a crop of corn is not fit to feed before the middle of August. The pastures frequently fail before then. Some supplementary feed, in the shape of oats and vetches, or, better still, oats and peas, should be provided. One of the most promising possibilities of the silo is, that in it corn silage can be kept for use during July and August. The great drawback to the system of silaging has been the summer labor involved, when teams and men are busy with crops and cultivation. From the silo the feed could be distributed to the cows when stabled for milking, with the loss of very little time. The early stabling of cows in the fall of the year is an economical practice. The animals do better, and the pastures are left in a better state for the winter. One acre of fodder corn will yield more than enough to feed a herd of 20 cows for three weeks at that season. I of a larger number of persons per acre area, is of surpassing advantage to every branch of commerce, and the owners of every kind of property. Again, dairy husbandry in Ontario has done

agree with Mr. Leitch, that selling butter at 17 cents per lb. will not in itself pay; but if farmers could get 17 cents for as much cream as would make a pound of butter, that would be a better sale. The skim-milk is valuable for stock raising. In the matter of creameries referred to, I consider that farmers living near cities can do as well by making the butter in their own dairies; and if creameries are to be successfully established, they must be patronized by farmers living back from large commercial centres. Presently and in the past we have been making butter at the wrong season of the year only. That may be remedied by the course, already recommended, of having more of the cows begin their milking season between October and January.

Mr. R. Gibson, being asked to express his opinion on how it was that Shorthorns had so reduced in their yield of milk, and that the milking breeds did not gain more prominence, said that it had been the experience of breeders that their purchasers, although wanting a bull of a good milking strain, were generally so impressed with the grandeur and massive frame of a highly-fed beefing animal, that they would purchase their offspring in preference to the lighter, leaner and more wedge-shaped milking strain. With stock it was the same as in other matters—beauty was frequently preferred to utility. Owing to the same reason, breeders were compelled to keep their stock in such high condition.

Mr. Little said that the many feeders of corn fodder had found that feeding corn before some of the ears were closed did not have a marked beneficial effect on the flow of milk; in fact some had found that feeding such corn had actually reduced the flow of milk.

Mr. Leitch said that he was no advocate of the southern corn; that he thought it did not give as large a return of actual nourishment as the small northern corn; that several of his neighbors had tried it, but that none of them tried it a second time. Some persons considered that corn fodder was, pound for pound, more valuable than hay; but he preferred one pound of the latter to two pounds of the former. The only advantage he could see in feeding ensilage was that by its use the cows were prevented from being chilled by drinking a large quantity of cold water at a time, the ensilage giving them, little by little, a large portion of the water they required; but this could be as effectually prevented by warming the water.

Mr. Leitch, whose report on the dairy was deferred till next meeting, said that stock for dairy purposes could be improved by introducing Jersey and Guernsey cows, but they were too tender to thrive well in this rigid climate. The common Canadian cow would stand more hardship, and consequently was specially adapted to our climate. In this country the farmer had to depend so much on pasture, that many of the new theories of feeding advanced by scientific agriculturists were neither feasible nor practicable. This summer the very best cheese only sold for 8½ cents a pound, and the average price realized at the Model Farm for creamery butter was only 17 cents a pound, and it was very evident should this diminution in the price of those products continue, it would prove disastrous to the farmers of Canada. Australia, New Zealand, Denmark and other countries were, by the aid of their respective governments, establishing agencies in various parts of the commercial world. The Canadian farmers should delegate agents in different parts of Europe, who would look after their interests and put their products

on the market without being subject to the influences of combines. A few years ago Prof. Brown, of the Guelph Farm, advocated with considerable gusto the introduction of permanent pasture, but the experiments made under the direction of Prof. Brown were a complete failure, so far as permanent pastures were concerned. He considered the merits of the Model Farm were over-estimated, and that much of the system employed there for imparting instruction to the students was radically wrong. Instead of teaching them the principles of frugality, and giving them an idea of the responsibility of their calling, they were encouraged in indolence. The young men could be seen meandering about the Farm, wearing kid gloves; and such training as this would prove abortive in producing shrewd and practical farmers. The institution was paraded too much like a circus—by blow and bluff.

Prof. Robertson said that cows relished the southern corn. That it required good cultivation and care, as it would otherwise give a very inferior return. Some of his neighbors had tried it this year, but while his was fully eleven feet high, theirs only measured two feet.

Mr. Gibson said that he had not yet had occasion to have a silo. He fed all his corn fodder in the forepart of winter, as after the end of February it became too dry. He asked the Prof. what change took place when the corn was cut and allowed to heat in a heap.

Prof. Robertson replied that so long as the fodder had not become dry, the protoplasm of the cells still retained their life; absorbed oxygen from the air, changed starch to sugar, and gave off carbonic acid. Another chemical change was that the corn was softened, and did not cut the gums of the stock. At the College the corn which was not used for ensilage was cut before feeding, and allowed to remain in a heap, covered with straw, not longer than ten days.

Agricultural exhibitions, the continuance of the Provincial Show, etc., will be discussed at the next meeting on the 15th of November, and any suggestions any of our readers may desire to send in will be cheerfully received by the Council.

Experiments at the Pennsylvania Agricultural Experiment Station, on the digestibility of corn fodder, that is, the stocks of field corn after the ears are removed, showed that taking the whole growth, ears and all, the stocks alone contained 37 per cent. of the total digestible matter. The practical meaning of this is, that the farmer who grows a field of corn, husks it on the hill and lets the stalks go to waste, leaves over 37 per cent. of the food value of his crop in the field, and contents himself with only 63 per cent. of its value.

The process of sheep shearing by machinery is now performed in Australia by an ingenious kind of device, the results, as represented, being very satisfactory. The apparatus in question is a very simple one, being made on the same principle as the cutter of a mower or reaper, and the knives are worked by means of rods within the handles, these in their turn being moved by a core within a long flexible tube which is kept in a rotary shaft, and wheels driven by a stationary engine. The comb is in the form of a segment of a circle about three inches in diameter, with eleven conical-shaped teeth. Each machine is worked by a shearer, and, as the comb is forced along the skin of the animal, the fleece is cut. The machine can be run either with a steam or gas engine, or by ordinary horse-power, and does not easily get out of order.