

### Betty's Record Reviewed.

To the Editor FARMER'S ADVOCATE:

SIR,—In your issue of Jan. 1st, I noticed the record of "One Cow," owned by Mr. William Taylor, Strathroy, and was impressed at low cost of her food. Isn't \$2.50 per ton a very low estimate for marsh hay and straw? Here in N. B. \$5 per ton is a low, but we will say fair, price for either. Roots are worth at least 50 cents per barrel, and oats are considered very low at 31 cents per bushel. I see winter feeding commenced Nov. 25th, fully a month later than we stable here in the case of dairy cows, but our summer period begins about 15th of May, as with Mr. Taylor. Even our smallest cows require considerably more than one and a quarter tons of hay in that period. Her calf was sold when six months old, for \$12. I presume it cost something to feed it during that time, but nothing is charged against it. Betty is no doubt a good cow, but hasn't she a little too much money to her credit?

King's Co., N. B.

E. O. CLARKE.

### Eastern Ontario Dairymen in Convention.

The twenty-fourth annual convention of the Eastern Ontario Dairy Association was held in Smith's Falls, on Jan. 9th, 10th and 11th. It was formally opened by His Excellency the Earl of Minto and the Countess of Minto, who were pleased to honor the occasion by their presence. To an address presented by Pres. Derbyshire, His Excellency replied fittingly, setting forth the important relation dairying holds to successful agriculture in Canada. Among other things, he pointed out that Canada had increased her output of cheese during the last ten years by over \$10,000,000, while the export of butter has grown during the same period from \$340,131 worth in 1890 to \$5,122,156 in 1900.

**President's Address.**—The President, Mr. Daniel Derbyshire, Brockville, in an admirable and comprehensive address covering the salient features and needs of the dairy industry, and pointing out that this was a favorable opportunity, at the commencement of the century, to resolve to do better in all lines of dairy operation. With the present opportunities for education and instruction, there will be no excuse for any factory employing an ordinary maker, nor for having anything but a strictly up-to-date factory, suitable for making the finest class of goods.

The exports of cheese from May 1st to Nov. 1st, 1900, was 2,077,000 boxes, with 323,000 boxes on hand, worth in all \$2,500,000 more than in 1899. The exports of butter will be \$2,000,000 less than in 1899. Our butter and cheese for 1900 will bring the sum of \$25,000,000—\$20,000,000 for cheese and \$5,000,000 for butter. By intelligent effort, the export of cheese and butter for 1901 can be increased by \$5,000,000.

One of the duties of the dairy associations for the present year must be the securing of better transportation facilities—quicker carriage, clean, well-ventilated cars, and cheaper freight rates. Occasions were cited where coal cars had been used to carry cheese, reducing its value two cents per pound. These things must be remedied this year. Mr. Derbyshire called for more perfect co-operation among patrons, makers, and all concerned, in order that we take another step in advance of all other competitors in every part of the world.

**Hand Separators.**—Prof. H. H. Dean, of Guelph Dairy School, delivered an interesting address on the plans and uses of the hand separator. The two essential parts of the separator are the bowl and the gearing. A bowl twelve inches in diameter, running at the rate of seven thousand revolutions per minute, exerted a pressure of twenty-one tons on every square inch of surface. It was therefore important that it be made of the finest quality of seamless steel, and that it be carefully run at not too high a speed. The chief requirements of a first-class separator are: 1st, ease of running; 2nd, that it will skim 350 to 500 pounds per hour; 3rd, ability to skim closely; 4th, must give smooth cream; 5th, ease of cleaning bowl, etc.; 6th, wearing parts must be durable and easily replaced; and, 7th, that it cost not more than \$100. The advantages of a hand separator were pointed out, as well as their evils, in the development of the dairy industry.

The advantages of the hand separator are to the private dairy farmer who needs the skim milk in the rearing of stock. As a cleanser of milk, it has a wonderful effect. The inside of the separator bowl reveals this after milk has been run through. It enables the private dairyman to get more and better butter than by the gravity system of creaming. It gives a better quality of skim milk. Patrons of Guelph Dairy School are enabled to receive good skim milk by all the whole milk being pasteurized before being separated at the School, and after separation it is quickly cooled by a Lister cooler. Milk thus treated keeps sweet a long time, even in hot weather. The hand separator is particularly useful in cream-gathering creameries.

Among the evils of the hand separator, it was pointed out that creameries supplied by patrons skimming their own milk could not make a uniform quality of butter, especially where cream is gathered only once or twice a week. In all creamery practice, the hand separator is a disadvantage. It tends to make patrons careless with cream and perhaps to neglect to wash the separator well after each skimming. The proper method for creamery patrons is to have all the milk hauled to the creamery and skimmed there.

### Facts Which Bear on Profitable Dairying.

Dr. Wm. Saunders, Director of the Dominion Experimental Farms, addressed the convention on this broad subject. Two essentials in profitable dairying are high-producing cows and cheaply-produced suitable feed for them. Such crops should be grown as do not deplete unduly the fertility of our soils. Speaking of maintaining fertility of farms, upon which continued success depends, the value of humus and means of supplying it were gone into. Humus retains moisture, and this is all-important, because plants take in all their food in liquid form. Good mechanical condition of soil is also necessary, in order that the rootlets may easily ramify. Plant rootlets, in their search for food, exude an acidulated moisture that dissolves plant food to be taken up later. The industrious farmer, that works his land well, thus gains a great advantage over those who are careless and lazy. It was shown that dairying is not exhaustive to the soil, especially butter dairying.

Referring to the best foddere to grow, the most suitable varieties of corn for the silo were indicated. For six years, Red Cob Ensilage, Giant Prolific, Thoroughbred White Flint, and Selected Leaming—each gave a yield of some twenty-four tons of whole crop per acre. These are dent corns, and do not mature as early as Longfellow and Angel of Midnight, which gave twenty-two tons per acre. These latter were preferred.

In preserving fertility, barnyard manure should be preserved from fermenting or leaching, and, if practicable, applied in the fresh state. Artificial fertilizers are useful only as adjuncts to yard manure, since they provide no humus. The plowing down of clover was also highly recommended.

**Co-operation.**—Mr. H. S. Foster, President of Bedford District Dairy Association, spoke strongly in favor of co-operation between dairy associations and dairy farmers. Only in this way can equitable freight rates be secured from the railway companies. It was shown that the present rates charged are not uniform, and therefore are unjust to many districts. He also considered much could be saved and better results obtained if factory equipments were all purchased co-operatively.

**Winter Cheese a Menace to the Trade.**—Mr. Arthur Hodgson, Montreal, representing the dairy produce exporters, spoke emphatically against the practice of making cheese in November and later months. The little gain made just at the time will be lost many fold at the opening season next spring. It was estimated that some 80,000 boxes of cheese were made in Ontario in November. These cannot be as good as summer cheese, and will seriously injure our reputation, and also store up a surplus that will be in the way next spring. He also spoke against making fodder cheese in April. He advised dairymen everywhere to turn their attention to buttermaking during the cold months.

**Evolution of Canadian Dairying.**—Prof. H. H. Dean traced the growth of dairying in Canada. The process is one of education, largely through experience, observation, reading, etc. The dairy farmer is slow to improve, but he is in a complex situation. It has become necessary in some sections in times of drought to feed and stable cows in two or three summer months the same as in winter. Silage and bran must be used by the progressive dairyman. The average record for twenty-two cows in the College herd is 7,000 pounds of milk per year, for 1900. Apples, rape and turnip tops were experimented with. Cows fed Virginia Cattle Food gave good-flavored milk when fed rape and turnip tops.

The buttermaker must read, study and think in order to advance. By heating milk to 185 degrees for separating, the best butter was made, having good flavor and good keeping quality. Pasteurization is therefore a great advantage in winter dairying. Pasteurization destroys cream rising by gravity.

Moisture in butter was experimented with. The more salt used, the less moisture is held. Working also expels moisture. The overrun in buttermaking ranges from ten to fifteen per cent., as found in Guelph Dairy School.

The cheesemaker is steadily improving. Curing at a temperature between 60 and 65 degrees saves one pound on 100 pounds of medium-sized cheese, also improves the quality. Washing curds between 90 and 110 degrees improves flavor of bad-flavored curds, causing loss of one pound of cheese in every 1,000 pounds of milk. Higher temperature gave better cheese, but caused greater loss. Between 90 and 100 is the best temperature to wash at. Milk aeration has been found to give no increase in yield of cheese and no improvement in quality when milk is good to commence with. It is generally harmful to aerate in the barnyard. If patrons will cool milk below 50 degrees, and the maker uses cultures wisely, he can prevent gas in curds.

**Development of Modern Agriculture.**—Prof. C. C. James, Deputy Minister of Agriculture for Ontario, said seventy-five years ago homes were being cut out of the forest. The products then were timber, ashes, grain and furs, from which a livelihood was gained. Fifty years ago live stock commenced to come in from Britain, and raised the status of agriculture. Twenty-five years ago co-operative dairying had its commencement. Also has come great development of the fruit industry. The great points now needed are: 1st, development of butter industry; 2nd, development of great bacon industry; 3rd, development of

poultry industry; 4th, development of fruit industry; 5th, development of pure-bred stock. The first four to be assisted by Government and by the people for themselves. Government should distribute helpful information, such as aiding conventions, speakers, reports, etc. The individuals should take advantage of these things and thus help themselves.

It was thus pointed out that if towns would bonus creameries or other farmers' industries instead of factories, a more permanent advantage would be gained to that town. The growing interest in agriculture was dilated upon. The work of Prof. Pasteur was instanced as one of the most important and interesting features of not only the medical profession, but that of agriculture as well. The souring of milk, the curing of cheese, the prevention of many deadly diseases, etc., were understood through the studious efforts and discoveries of this scientist. Such men as these have evolved new grains, fruits, etc. Many illustrations were presented to prove this statement that agriculture is full of peculiar interest and increasing importance, and upon this the future development of this country mainly depends.

**Experimental Agriculture Conducted by the Dominion Government.**—Dr. William Saunders dealt with the establishment and conduct of the Dominion Experimental Farms, with which readers of the FARMER'S ADVOCATE are already familiar.

Prof. Hart, Kingston, gave a talk on general dairying. Among other things, he remarked that cheap production must be considered. To this end the feeding of silage was recommended. Bad flavors from silage feeding come from inhaled odors from the silo, rather than from the silage eaten. The closing of many creameries the past autumn was attributed to the fact that they are cheaply equipped, and therefore unsatisfactory. The floor should be of cement. A really first-class wooden floor kept oiled will wear out in about five years. Machinery runs better on a firm cement floor. For walls, have masonry up at least to window sills. This should be lined with cement. The machinery should be the best obtainable, as it economizes the product and the labor. At Kingston Dairy School the milk is pasteurized at very high temperature, even nearly up to the boiling point, and no cooked taste is observable. Better results are thus obtained with the butter, also with the skimmed milk; butter has a better keeping quality. In ripening the cream, it is cooled down to 65 degrees, and starter added, then cooled down, after ripening, before churning. Losses in skim milk and buttermilk are less with pasteurized cream. Separating at high temperature increases the capacity of the machine and skims closer. Ripeness of the cream is determined by alkaline tablets.

In a discussion it was brought out that mottles in butter, so common in winter, can be prevented by careful distribution of salt, and by having the butter sufficiently moist to dissolve all the salt. R. M. Ballantyne, Montreal, recommended the washing of all curds, so as to have uniform products throughout the season.

**Cheesemaking.**—G. G. Publo, of Kingston Dairy School, spoke on conditions necessary for the making of fine cheese. A good building, in which the temperature can be controlled, and suitably equipped, is necessary; good sweet milk from healthy cows fed on good food. Patrons must be clean, especially when milking the cows. A growing evil is that of shipping cheese too green—making cheese that will pass at a few days old. Such a practice will ruin our cheese trade. A soft, fine cheese is necessary, but it should not be ready to ship at less than two weeks old. The cheese hurriedly shipped will never make first-class cheese. An essential in good cheesemaking is pure water; therefore have no possibility of soakage into the well. He advised patrons strongly not to feed turnips, rape or other strong-flavored food. The milk belongs to patrons, and they should do all possible to produce it in best possible condition.

The manufacturers were advised to engage only first-class makers, and give them sufficient salary that they may engage enough first-class help of ability to make proper cheese.

Prof. Ruddick followed Mr. Publo, and urged Canadians not to be satisfied with past achievements. Other countries have great natural advantages, and are putting forth strenuous efforts to produce the best possible product. Some of the defects of Canadian cheese were presented. An ideal cheese was described. Prominent defects are openness in cheese, due to lack of sufficient acid and firm pressing. High piling of curds is a common fault. A weak cheese possesses an extreme of openness, with an excess of moisture. Not clean in flavor is common, due to filthy stables, bad food and water, and unclean cows. Off-flavored cheese is due to wrong temperature in curing. Acidic cheese are those slightly sour, due to overripeness of milk and unwise use of starters. Fruity flavor is becoming more common, and is considered due to bacterial origin; occurs throughout the whole season, but more common in fall. Pasty cheese is due to too much moisture left in curd. It should have been heated higher.

Flavor is the most important quality in cheese. All conditions in milk and manipulation must be high-class to obtain it. Ill-fitting, too light, damp boxes were strongly condemned, as they cause serious loss every year, especially from some districts.

Mr. Alexander, Montreal, a cheese exporter, complained that he could not always bring back