

EXPORTS OF DAIRY PRODUCTS FROM UNITED STATES.

Year ending, June 30.	Butter.		Cheese.	
	Amount.	Value.	Amount.	Value.
1881	31,590,500	6,256,024	147,995,614	16,380,248
1885	21,633,148	3,643,646	111,992,900	10,444,409
1889	15,504,978	2,568,765	84,999,828	7,889,671
1890	29,748,042	4,187,489	95,376,053	8,591,042
1891	15,187,114	2,197,106	82,133,876	7,405,376
1892	15,047,246	2,445,878	82,100,221	7,676,657
1893	8,920,107	1,672,690	81,350,923	7,824,648

The great decrease in butter from 1892 to 1893 is particularly noticeable in this statement. Another remarkable thing is that the price of cheese was over 15 per cent. less in 1893 than in 1881, while that of Canadian cheese was only about 8 per cent. less in 1893 than in 1882. These figures indicate that the United States export trade in dairy products is decreasing very fast. The probabilities are that in a very few years she will be able to consume all her dairy products at home.

THE BUTTER INDUSTRY.

A very important feature of this bulletin is the amount of attention given to the butter industry. Statistics are given, showing that in 1883 there were 27 creameries in operation in Ontario, and that in 1892 there were 50. The price of creamery butter is quoted as being 21.33 cents in 1883, and 20.50 cents in 1892. It is further estimated that less than 3,500,000 pounds of creamery butter were produced in Ontario in 1892, which would be less than 10 per cent. of the total made in the Province, or, in other words, for every pound of creamery butter made there are over 10 pounds of dairy butter made. It is thus seen that the co-operative system in butter-making has not been very largely developed in the Province. The co-operative principle is, without doubt, the most effective and the most satisfactory method of dairying, whether applied to cheese-making or buttermaking. A better and more uniform quality is produced, and a higher price obtained than for the dairy butter.

To show this difference in price a table is arranged, comparing the prices obtained for dairy and creamery butter in the wholesale market in Toronto. The lowest and the highest prices paid for dairy butter for the first of every month are given, and the price of creamery butter as well. It is shown that between June, 1892, and May, 1893, the average of the lowest prices paid for dairy butter was 13.5, and the average of the highest prices, 18.6, while the average price of creamery butter for the same period was 23.6. Between June, 1893, and May, 1894, the average of the lowest prices for dairy butter was 15.4, and the average of the highest prices, 19.6, while the average price of creamery butter for the same period is given as 23.7. It will be seen from these figures that creamery butter sells for 8 to 10 cents higher than the poorest dairy, and for 4 to 5 cents higher than the best dairy butter. It costs from 3 1/2 to 4 1/2 cents per pound to get creamery butter manufactured. A dairyman will then have more for his butter, after paying for making, by having it manufactured at a creamery. In other words, he will receive more for his cream than he will for his butter, if made at home.

This table of Toronto wholesale prices sets forth another important fact. While the average price of creamery butter for the past year was just the same as for the year previous, the average of the highest prices for dairy butter was 1 cent higher, and the average of the lowest prices 2 cents higher than during the previous year. This would be a mean average of 1 1/2 cents per pound, therefore the quality of our dairy butter during the year has greatly improved. The increase in value of our 50,000,000 pounds of dairy butter by 1 1/2 cents per pound means an increased return of \$750,000.

This improvement in the quality of our dairy butter is due, in a very large measure, to the work of the Travelling Dairies. They have developed a spirit of enquiry and a desire on the part of farmers for the most improved churns, butter-workers, butter-prints, and all the latest appliances for successful buttermaking. They have shown the people in a practical manner how to make good butter, and the best methods to adopt to secure a uniform article; and, more than these, they have given object lessons of the proper handling of butter, so as to fit it for market, and in this regard have been so instrumental in cultivating a taste for neatness and care in packing butter and in preparing it for the consumer, that they have well repaid for the expenditure, if nothing more were accomplished.

There are other important facts brought out in the bulletin, showing the value of improved methods, cost and plans of factories and creameries, and comparisons between Canadian and Danish dairy products, and how the latter have taken the lead in the British butter market, upon which valuable comments might be made, but space will not permit. Suffice it to say, that the information given in this bulletin is of special value to every dairyman.

Cable advices report that the first shipment of Canadian cattle to the British Isles have arrived and passed the special government inspector. There were 370 head in this shipment, and not one is reported as suspicious. The cattle, which were good, though not of the best quality, brought from four and three-quarters to five pence per pound. It is now thought that if the 6,139 cattle now afloat pass the same examination, it will induce Hon. Mr. Gordon, President of the Board of Agriculture, to remove the obnoxious embargo at once.

A Study in Churning.

We hear so much of late in regard to the great loss caused by the imperfect separation of cream from the milk, as revealed by means of the Babcock test, that we forget the loss which the same unerring detective points out to us in the buttermilk. By referring to the report of the travelling dairies we find that the average of butterfat in the samples of buttermilk which were brought in to be tested by farmers was over one per cent., while individual samples went even higher. Nor is it the private dairyman alone who is losing money in this way, for by examining the buttermilk at creameries and large dairies, the same tale is told, though in a less marked degree.

During the past year Prof. Wallace, of the Iowa Experimental Station, has been devoting special attention to this loss of fat in buttermilk, with a view to ascertaining the cause and finding out whether this loss can be avoided, and if so, the conditions necessary to secure the best results. He states that during the past summer a large number of samples of buttermilk from both creameries and private dairies were tested. In only one sample was the amount of fat found to be as low as two-tenths of one per cent., and one sample tested as high as seven and two-tenths per cent. The loss by farmers and in private dairies was found to be much larger than that from creameries, but still it was found as high as two and a-half per cent. in some factories. From careful investigation it was estimated that a factory which received 10,000 lbs. of milk, or its equivalent in cream, would lose between \$5 and \$6 per day, while some of the large factories during the greatest flow of milk would lose from \$15 to \$30 daily from suffering the fat to pass off in the skim milk and buttermilk. From previous experiment it was thought that the degree of ripeness of the cream has a decided relation to the proportions of butterfat lost in the buttermilk. To decide this point, and at the same time to prove the practicability of a chemical test for the right degree of acidity, Prof. Wallace had recourse to "titration," a method used in chemistry to tell the strength of acids by means of a standard alkali solution. His work in this direction showed that the degree of acidity had a very marked effect upon the complete separation of the butter globules; that the range of this correct degree was very slight, or that both insufficient ripening and over-ripening had the same effect of increasing the per cent. of butter in the buttermilk.

Prof. Wallace closes with the following summary:—"While this report covers a great many churning, and represents much work, we shall continue investigations in this line during the coming year, until we secure results which are fairly decisive. The result of our work so far seems to indicate that the acidity of the cream bears a decided relation to the loss of fat in churning, and a test of this kind for acidity cannot but be of considerable help to the butter-maker, even though he has had years of experience."

Butter and Buttermaking.

Mrs. Joseph Yuill, of Carleton Place, sends us the following additional information on the above subject, which she dealt with in our issue of April 15th:—

"Setting aside a small quantity of ripened cream, for future use, would not suit the purpose, for the reason that the ripening process keeps going on until it is too highly ripened. I have tried keeping both ripened cream and fresh buttermilk for starter, and I find that fresh ripened cream makes a sweeter and a better article than either old cream or buttermilk.

I have used six different kinds of creamers, and find the plain cans the most suitable. First, it is the cheapest; second, it is easier kept clean.

It is no easy job to keep a tap clean, and, if you have a tap, you must have glass, and there is a roughness inside the can alongside the glass which is hard to keep clean. And last, but not least, if there is any sediment in your milk, you will get it in your cream. Of course the agents selling these cans will say that the sediment will run off with the skim milk, but it did not do that with me. I got the sediment with the last dregs of cream every time.

Explanations Called For.

Under the subject of "Butter and Buttermaking" (by Mrs. Yuill), in the ADVOCATE for April 15th, appears the following sentence, viz.:—"If a cow drinks 100 lbs. of impure water, 87 per cent. of the impurities of that water will be found in the milk." Is this statement correct? It seems rather startling. Kindly answer in your next, and oblige,

SUBSCRIBER, TRURO, N. S.

MRS. YUILL'S REPLY.

The statement which I made in my article on buttermaking, that the impurities of water which a cow drinks go into the milk, is practically correct. Still, it is open to criticism: for instance, impurities in water of a vegetable nature might be eliminated by the process of digestion; but the impurities of water which usually affect milk are bacteria. These the cow has no power to separate from water, and of course, are found in the milk. Such impurities are often found in water from wells which are contaminated by the soakage from cesspools, outhouses, or barnyards.

Management of Cheese Factory Herds.

In the April 1st issue of the FARMER'S ADVOCATE, a statement was given of the cash returns received last year by patrons of the Harrietsville (Ont.) cheese factory. One of our readers, in the Maritime Provinces, wrote us for "further particulars," and the following have come to hand:—

GOOD RETURN FROM A DEHORNED HERD.

In answer to your letter in regard to the statement made in the ADVOCATE of April 1st, about the amount of money received for milk at the Harrietsville cheese factory from my cows, I would say that the milk averaged \$9.27 per 1,000 pounds. The cows kept were Grades, Durham, Holstein and Ayrshire, with native cows, and came in between April 1st and middle of May. The milk was sent to the factory until the first of December, after which we made butter for our own use. The food was all raised on the farm, and consisted of pasture, corn and roots. My cows are dehorned, and I find it very beneficial.

PHILIP ABBOTT.

THE SYSTEM OF FEEDING.

Your letter re Harrietsville cheese factory to hand. In reply, I beg to say the report of the amount received from factory in 1893 by parties named in your paper sometime ago is perfectly correct; a large number of others received similar amounts per cow. I do not think I can give you all the information you require, but will refer to what I think the most important points. In the first place, the class of cows generally kept are what I would call fairly good Grade cows, great attention being paid to the milking qualities. The factory commences running about the second Monday in April, and continues until about the first of December in each year. The make of the Harrietsville factory during the past three seasons has averaged, per year, a little over two hundred and forty-eight (248) tons; supposed, I believe, to be the largest factory in the world. From the time of commencing to send to the factory until about the second week in May we feed chopped oats, peas and barley, mixed; but from the time grass gets flush we feed nothing but the pasture, until later on, when the grass begins to fail; then we start to feed green corn, with the ears or cobs, in sufficient quantities to keep the flow of milk up to a good standard quality. Later on, say about the latter part of August or early in September, we start to feed turnips. I consider feeding part corn and part roots is better and produces a greater flow of milk than either separately. The number of cows kept, on an average, is about fifteen on one hundred acres, and so on in proportion. The cheese trade has been found, with us, the most profitable business farmers can invest in; but I need not explain that to make it successful requires a great deal of care and attention. Of course, we have got to make great preparation to raise the fodder I have referred to. There are some parties who, from lack of attention and feed, do not realize much over \$30 per cow, but I would say eight-tenths of the patrons realize over \$40 and up to \$50 per cow for the season. Dehorning is popular in large herds of cows, but I do not see much advantage in small herds.

R. TOOLEY.

The Mammoth Cheese Again Heard From.

Through the kindness of the Dairy Commissioner, Ottawa, we have recently received a sample of the mammoth Canadian—eleven ton—cheese. Although the flavor is somewhat stronger than cheese kept under suitable conditions, still the quality is a marvel of excellence, considering the very unfavorable conditions in which it has been placed and the extreme temperature through which it has passed. The body and texture of the cheese have been well preserved, and does not appear, as yet, to have entered upon that stage of decay and rottenness predicted by some of its enemies.

The mammoth cheese—called the Canadian Mite—was exhibited at the World's Fair, at Chicago, last summer. It was made at one of the Dominion Experimental Dairy Stations, in Lanark County, Ont., in September, 1892. It stood in the vast Agricultural Building, on the World's Fair Grounds, at Chicago, from May until November, 1893. As the building had a glass roof, the temperature was often as high as 95 degrees inside.

The mammoth cheese was afterwards shipped to England, and was cut up in London during March and April of the present year. Excepting a few inches on the surface, the quality was similar to the sample sent to Canada. This sample was cut from below the middle of the big cheese, and the quality is still exceptionally fine, when we consider its age and the very unsuitable conditions to which it has been exposed. It amply justifies the reputation of Canadian cheese, in possessing good keeping qualities, and utterly refutes the slander on an important industry, circulated by an unscrupulous cheese dealer, to the effect that it was "spoiled" and "rotten."

The exhibition of the mammoth cheese at the World's Fair was indeed a great advertising hit, and to the very end of its career it has done excellent service to the dairy interests and dairy farmers of Canada, by drawing the attention of the world to the magnificent possibilities of Canada's agricultural resources, and to her capabilities as a producer of the finest quality of dairy products.