

5. The milk should be strained in every case as soon as it is taken from the cow. Too many patrons neglect this, and think because the milk is strained at the factory, that is all that is necessary. It does not hurt milk to put it through the strainer if it is clean, and if there are any impurities in it, they should be taken out immediately.

6. Do not forget to thoroughly air the milk as soon as it is taken from the cow. This is one of the important things in caring for milk, and whatever else is neglected, do not forget to thoroughly stir and air it. By airing, the animal heat can be taken out, and if the cow has been drinking foul water, the evil results from it will not be so great. A large number of the bad odors in milk are produced by what are known as the alkaline ferments. Now, one peculiarity about these micro-organisms is that they grow better when not exposed to the atmosphere, and consequently airing the milk will put it in a condition to withstand the growth of these germs. Bad flavors in milk prevent the rennet from properly coagulating the milk and not so much curd can be got from it, and also, these bad flavors leave the curd in such a condition that there is more or less loss of butter-fat in the whey, and this may account for the large amount of fat found on many whey tanks, which so many patrons complain about.

7. If the milk has been stirred and aired for fifteen minutes after milking and put in a pure atmosphere to keep over night, and stirred occasionally during the evening, it will not be necessary to cool it to a very low temperature in order to preserve it over night. A temperature of 65° Fahr. will suffice. Do not let cooling take the place of airing.

8. Too much stress cannot be put upon the necessity of having the milk cans thoroughly scalded and cleansed, and especially where the sour whey is returned. The whey should be dumped out as soon as the can is returned from the factory, and the can thoroughly scalded and cleaned with boiling water and put in a place where it will get the benefit of the sun's purifying rays. It is much better not to allow the whey to go back in the cans, but to dispose of it at the factory, as the majority of our best factories are doing.

Too often the care of the milk is neglected because the patron feels that attention to these little details is unnecessary and unimportant, and consequently the quality of the milk is injured and the cheese is inferior. Now, if every patron of a factory would look upon attention to these little details as a necessary part of successful dairying, the work in connection with them would not be so irksome, as in doing it he would feel that he was enhancing the value of the milk and improving the quality of the cheese at his factory.

I am sure every one connected with the dairy business is proud of the present reputation of our Canadian cheese and is anxious to still further improve its quality, so that our cheese will have no competitor in the British market. This can be done by giving particular attention to these little details in connection with the business, and supplying only pure, sweet milk to the cheese factory.

Our Export Butter Trade.

Attention having been recently called in the FARMER'S ADVOCATE to the somewhat disquieting fact that during the past season several thousand packages of butter were reshipped from England to Canada, and recognizing the possible effect that this intelligence might have, we addressed a letter of enquiry to two leading exporters of dairy products, and to Dominion Dairy Commissioner, Mr. J. W. Robertson. Their replies throw considerable light on the subject, and our readers now have the benefit of their suggestions, as contained in the following letters:—

(FROM HODGSON BROS., EXPORTERS).

The FARMER'S ADVOCATE, London, Ontario.

Gentlemen—Your favor of 27th inst. reached us in due course. We believe the main cause for the few lots of creamery butter being returned from England was the extra imports of New Zealand, causing a temporary glut, and our market being much higher it was thought a more remunerative plan. We understand the quality was all right, but finest creamery in Canada then was selling to the home trade at 24 and 25 cts. We are inclined to doubt the rumor that the butter was summer stored goods; we know there were all sorts of reasons given, but we have been assured, on good authority, the butter was fall made choice creamery, and we feel like giving the butter this benefit. Still, as we were not personally interested, and did not see the stuff, our information is therefore only second-hand. The shipping facilities may be better, but we believe most of the steamers leaving our ports are now fitted up with refrigerator accommodation which should carry goods forward in good order. In conclusion, we would say, we fear we are too far distant to ever be able to compete successfully with Danish and other continental butters, as our trade only competes with those from other parts of equal distance, which never arrives fresh. We think a better package, made air tight, might be used to good advantage, and improve the demand, but until such is adopted we think farmers cannot do better than keep up their attention to cheesemaking.—HODGSON BROS., Montreal, May 31st, 1893.

(FROM A. A. AYER & CO., EXPORTERS).

Gentlemen. Replying to your various questions, there was quite a quantity of butter returned to Canada this year, which of course

meant much loss either to the shippers from this side, or to the owners in England. Some portion of it had been in cold storage, and naturally it lost its flavor and became stale. We have repeatedly said that we had grave doubts about the feasibility of winter dairying in Canada, owing to the fact that such large quantities were likely to come forward from Australia and New Zealand, thus supplying the English market after the 1st December, or the close of our navigation here. We consider the shipping facilities as favorable as one could expect for the quantities of butter that are offering during the hot weather, but we have no doubt that the shipping companies would put in refrigerators if large enough quantities were offered; but we have our doubts about the feasibility of shipping large quantities of butter during June and July, as the English markets during that time are so abundantly supplied from Denmark, France, and other portions of the continent. The facts are, that our most useful period for sending butter into England is from the beginning of August to the end of November, or say during four months. It therefore does not become necessary to any great extent to employ cold storage, and we do not advocate either the holding of butter in that way, or the building of large refrigerators for that purpose, as we consider the small ones at present throughout the country and in Montreal are quite sufficient for all the probable requirements for carrying purposes. We would not presume to advise on so important a matter, but our own impressions are that butter makers would do well to go slow, unless they are prepared to take very much less prices than they have been receiving during the last few years. There seems to be no limit to the market for cheese, but the same cannot be said of butter.—Yours truly, A. A. AYER & CO., Montreal, May 20th, 1893.

(FROM PROF. ROBERTSON, DAIRY COMMISSIONER).

Dear Sir,—Your inquiry regarding the return of a quantity of butter from Great Britain to Canada during the past season has been received. The market for any perishable product, like butter, cheese, fruit and poultry, is usually a rather elastic and fluctuating one. Several causes, unusual in their nature and severity of influence upon the market, combined to depress the butter market in Great Britain during the past winter. Prices in the local markets of Canada for both creamery and dairy butter were much better than in England after New Year's. In consequence, it was to the advantage of those who shipped the butter to bring part of it back for sale in this country.

The financial crisis in Australia, and the weakness of the banks there, helped to aggravate the condition of the butter market. The butter which reached England from Australia seemed to be mostly in the hands of the banks, who had advanced large sums upon it before or when it was shipped. The banks had instructed their agents to sell and realize upon the butter promptly upon its arrival, regardless of the outlook of the market, or the probable price which could be obtained. The effect of this was to induce a panicky condition, when buyers became too timid to purchase more than a hand-to-mouth supply.

One of my correspondents wrote to me to this effect:—"When I left England (some time in March), the butter trade was in a most demoralized condition, and it was impossible to tell to five shillings what was the actual value. The Australian banks in London had over-advanced in Australia £150,000 on one week's shipments." I am in no position to vouch for the accuracy of the figures which are given, but the effect of the attitude of the bankers, and the newspaper rumors concerning the enormous quantities of butter to be expected from Australia, had a very "bearish" and depressing influence upon the butter market. The effect upon prices was out of all proportion to the quantity of butter which arrived. The exact and complete returns are not available yet, but I am confident, when they are all in, that we will learn that the shipments from Australia for the whole winter did not aggregate 5 per cent. of the quantity of butter which Great Britain imported during the year. Besides, the Australian Governments were known to be bonusing the butter all the way from two cents to six cents per pound. That put another argument into the hands of the butter buyers with which to hammer down prices. As the retail prices of butter in England were not reported to come down in proportion to the decline in the wholesale markets, perhaps the crafty shopkeeper had a hand in the game. Such an array of unfavorable conditions may never again meet the shipments of finest fall and winter creamery butter from Canada. JAMES W. ROBERTSON, Dairy Commissioner, Ottawa, May 30, 1893.

American Forests.

From statistics presented to the Forestry Congress at Philadelphia it appears that the woodlands of the United States now cover 450,000,000 of acres, or about 26 per cent. of the area. Of this not less than 25,000,000 acres are cut over annually. It was also stated that while the wood growing annually in the United States amounted to 12,000,000,000 of cubic feet, the amount cut annually is just double that enormous quantity, besides a vast amount destroyed by fire, and not included in the estimate. The country's supply is being depleted therefore (says Mr. J. E. Jones) twice as fast as it is being reproduced, which clearly goes to show that a timber famine in America is approaching quite rapidly.

Cost of Milk Production.

An instructive experiment was conducted last year, at the Cornell University Agricultural Station, to determine the cost of milk production and the variation in individual cows. The University herd of twenty cows was used. This herd had been developed, for the most part, from the ordinary stock of the neighborhood by the use of thoroughbred bulls and a rigid selection of the best heifer calves—a system inaugurated by Prof. Roberts in 1875. The year previous to that the average milk yield per cow upon the farm was a trifle over 3,000 lbs., but in 1892 the average was 7,210 lbs., and over 285 lbs. pure butterfat, which, allowing for losses in skimming and churning, would give an average of 332 lbs. per cow of good butter. This is certainly a very striking illustration of what intelligent management will accomplish in improving the milking qualities of a herd, and ought to encourage the efforts of men who are striving to bring their dairy herds as far above that discouraging 3,000-lb. line as possible.

Of the twenty cows in this herd, nine were grade Holsteins, two thoroughbred Holsteins, six grade Jerseys, one thoroughbred Jersey, and two common grade cows bearing evidence of having considerable Shorthorn blood in their veins. Prof. Wing, the author of the bulletins, intimates that the latter were much above the average grade cow in dairy capacity. The milk of all the cows was regularly weighed and tested for butterfat, and everything consumed by the cows was charged against them individually.

During the time they were in pasture the grain ration was made up of three parts bran and one part cottonseed meal. The daily winter ration was as follows:—

FOR THE LARGER COWS.	FOR THE SMALLER COWS.
15 pounds hay.	10 pounds hay.
50 to 55 pounds silage.	40 to 45 pounds silage.
10 pounds roots.	10 pounds roots.
8 pounds grain.	8 pounds grain.

The only exceptions made to this were that Freddie and Puss during January, February and March had ten pounds of grain instead of eight. The summer grain ration was four pounds per cow, except during the month of June, when one-half of the cows received no grain whatever. The cows while dry were fed no grain at all, the remainder of the ration being unchanged. In the latter part of the summer, particularly the months of August and October, the pastures became very short, and were supplemented in August with second growth clover, cut and carried for the cows, and in October with corn stalks. These were in every case weighed and charged to the cows consuming them. In making up the cost of the food consumed the following scale of prices was used, based as far as possible upon the market prices in Ithaca, N.Y.:—

Hay.....	\$ 9 00 per ton.
Ensilage.....	1 75 "
Roots.....	2 00 "
Wheat bran.....	18 00 "
Oats.....	35c. per bush.
Cottonseed meal.....	\$25 00 per ton.
Cornmeal.....	20 00 "
Corn-stalks.....	3 00 "
Grass, cut and carried to cows.....	1 75 "
Pasture, exclusive of grain and silage crops.....	30 cts. per week.

The average cost of food per cow consumed during the year was \$45.25; average cost per 100 lbs. of milk, (2½ cts.); average cost per lb. of butterfat, 15½ cts. The highest cost for any one cow was \$1.48 per 100 lbs. milk by Daisy, a grade Jersey; the lowest, 44 cents, by Pet, a grade Holstein. The highest cost per lb. of butterfat was 27 cents for Glista, a pure-bred Holstein, and the lowest, 11 cents, for Sue, Shorthorn (farrow) grade. From the extensive tables given it appears that the Jerseys and Holsteins are pretty well sandwiched together as to relative rank. The Holsteins, as a rule, are better in the production of milk, both as to amount and cost, and the Jerseys stand better in regard to the production of fat. The two grades at the most food gave the most milk and fat, and produced it at the lowest cost, but they could not, as before mentioned, be considered average grade cows of the country—in fact, they were only two (states the bulletin) out of twenty of like breeding that it was thought advisable to keep in the herd for more than one year. They illustrate the fact that among such cows can be selected individuals that will respond to good care and improved feeding in a most remarkable way.

This interesting bulletin concludes as follows:—

"Our records of this herd for the year seem to us to warrant the following conclusions:—

- 1st. With a fairly good herd, carefully fed and kept, milk can be produced for sixty-five cents per hundred weight, and fat for sixteen cents per pound for the cost of food consumed.
- 2nd. That individuals of the same breed vary more widely in milk and butter production than do the breeds themselves.
- 3rd. The larger animals consumed less pounds of dry material per one thousand pounds live weight per day than did the smaller animals.
- 4th. That in general the best yields of fat were obtained from cows that gave at least a fairly large flow of milk, particularly as seen in the cows Sue, Freddie and Beauty.
- 5th. In general, the cows consuming the most food produce both milk and fat at the lowest rate.
- 6th. For the production of milk and fat there is no food so good, so cheap as good pasture grass."