

**PASTEURIZING MILK AND CREAM.**

Canadian butter has gained a good reputation on the English market the past season, and at times it obtained as high a price as the Danish butter was bringing. Every care should be taken, therefore, by the farmers of Canada to see that this good reputation is not injured during the coming winter.

The reputation of Canadian butter is, to a very large extent, in the hands of the Canadian farmer, for he is the producer of the milk from which the butter is made. It is, therefore, his duty to his country as well as to the factory, to send only pure wholesome milk uncontaminated in any way to the butter factory, so as to give the butter maker an opportunity to make goods that will command the highest price on the English market.

Because a few farmers will not take the trouble to do this, it becomes necessary for the buttermaker to go to extra labour in removing all objectionable odors from the milk, so that an article can be made that will be uniform in flavour and of good quality. To do this the milk or cream has to be Pasteurized, that is, heated to a temperature of 160° Fahr., held a few minutes at that temperature, then cooled. By this process obnoxious gases and odors are removed from the milk or cream.

At the creamery the whole milk can be Pasteurized by doing a portion of the heating in the receiving vat, then pass the milk into what is called a channel heater. The channel heater is a pan about eight or ten inches deep, divided into channels three or four inches wide and about four feet long. It is placed in a tank or vat containing water that is heated by steam. The milk passes in at one end and out at the other end of the channel heater, and on its way is heated to the desired temperature.

But in ordinary creamery work it will be found most profitable to Pasteurize the cream only. This may be done in any one of the following ways.

- (1) By heating the cream in an ordinary cream vat.
- (2) By means of a machine built for the purpose and called a Pasteurizer.
- (3) By means of a small channel heater. This will entail the least labor and expense.
- (4) By using the ordinary shotgun can or deep pail set in a tank of water kept at a temperature of, 180 degrees. The cream should be kept stirred while it is heating. When the cream reaches a temperature of 160° it should be removed, allowed to stand for twenty minutes, then cooled. This is a simple plan and can be followed by any farmer who has a private dairy and who is anxious to make a first class article free of all objectionable odors. An ordinary tub will do for a tank, and an ordinary churning can soon be Pasteurized.

After the cream is Pasteurized it should be cooled down to ripening temperature, and when acid shows strongly, and the cream begins to thicken, it should be cooled down to 50 to 55 degrees, and remain at this temperature for at least two hours before churning to allow time for the fat to harden, and thus insure good grain and body in the butter. It is a good plan to use a starter made from Pas-

teurized skim-milk. If the cream is to be ripened in twenty-four hours add from ten to twenty per cent. of starter, if in forty-eight hours add only about five per cent. This can be added when the cream is at a temperature between 90 and 95 degrees as it is cooling. If the cream is ripened at a temperature as high as 70 degrees it should, if possible, be cooled to churning temperature for over night.

The private dairyman can make use of nearly all of these suggestions in his work just as well the creameryman can.

Where turnips are fed to the milch cows the cream should be Pasteurized by heating it in shotgun cans to the desired temperature and cooling it again. Butter can thus be made that will be free from the flavor of turnips so much objected to by consumers.

**PERMANENT STAIRS IN BARN.**

Only those who move among the farmers and are around their buildings know how awkward the arrangements sometimes are. We have been in good basement barns, where the only means of communication between the stable and the barn floor above was by means of a short ladder placed in some out of the way corner, and being loose, half the time it was not in its place when wanted. Like conditions exist in many another place around the farm buildings.

Any farmer that is handy with tools can soon make a good stairway in a convenient place, that will make a much safer and quicker way of access than the ladder. There are other places where such stairs could be put in to advantage, to the loft above the woodshed, wagon house, and the pig pen. These stairs will save time, and thus pay for themselves. The women folks will be delighted with them. All mows and lofts should be provided with good permanent ladders. The time and labor saved in getting up into a mow several times a day without a ladder, or if one has to be moved from some other place, will more than pay for a good one. In many cases stairs could be conveniently arranged in place of ladders, only labor being required and perhaps occasionally a small outlay in cash. These things will enable the boys to do the chores much easier, more quickly and pleasantly, and thus make life on the farm more enjoyable for them.

**LEAVES.**

Let the leaves lie on the lawn, don't rake them up. The provisions of nature in this regard are remarkable. The grass catches the leaves and holds them there, making a covering and protection. They can be raked off in the spring if too thick, but they will add to the humus of the soil and serve also as plant food, for they are rich in potash, and potash is of especial assistance to grass. Then, did you ever notice how the wind blows the leaves around the roots of bushes, shrubs and hedges? Leave them there as a protection to the roots.

Gather the leaves from places where they accumulate and are not needed, for they make nice warm bedding and will add considerable manurial value to the manure heap. They are splendid

in the hen-houses. Scatter them over the floor, then throw the grain for the hens on the leaves, and let them scratch for it. They make a good covering for strawberries. Save all you can of them, and what cannot be stored add to the compost heap.

**MANITOBA DAIRY SCHOOL.**

Dairying in Manitoba is developing at a very rapid rate, and many who seem to think that the older provinces have the monopoly of dairy schools and of dairy instruction will be surprised to learn that Manitoba has a dairy school, and that there are great possibilities for dairying in the prairie province.

The dairy school which is in Winnipeg will be, as last year, under the direction of Mr. C. C. Macdonald, the Provincial Dairy Superintendent. There will be two courses for cheesemakers, a course for buttermakers and a farm dairy course. The farm dairy course is arranged to give the greatest amount of help possible to farmers' sons and daughters who have but a limited time for study. The course will begin on January 3rd, 1898, and end January 29th, 1898.

The cheese and buttermakers' course will begin on February 1st and March 1st, 1898, and will consist of practical instruction for three weeks in cheesemaking, buttermaking, and milk-testing. Lectures on subjects relating to dairying will also be given.

Any person over sixteen years of age, who has worked at least one season in a butter or cheese factory is eligible for admission to the cheese or buttermakers' course. Application should be made to the dairy branch of the Department of Agriculture, Winnipeg, Man.

**THE ABORTION BACILLUS.**

Professor Bang, of Denmark, has recently succeeded in separating the abortion bacillus. This discovery is of great importance, and will open the way to a more successful method of treating cases of abortion. It appears that the abortion bacillus thrives best either in the presence of too little or too much oxygen, and that in conditions between these two it will not develop. The experiments made proved that the bacillus was possessed of great vitality. A cow that has aborted once is very likely to do so again unless the uterus is carefully disinfected. Because of this tenacity of life it is very difficult to rid a stable of the disease once it has become infected. It may be communicated to sheep, cows, and mares, and hence it is important to keep all female breeding stock away from an infected building.

Powdered lime, freely used, is one of the best disinfectants, and should be used in an infected building.

Epizootic abortion belongs to a class of diseases which leave behind them a certain amount of immunity from again taking the disease. This suggests another line of treatment. By injecting a vaccine or serum, animals may be rendered proof against abortion. But should this line of treatment fail to be effectual, abortion can be successfully treated by isolation and disinfection.

**THE NEW YORK HORSE SHOW.**

The thirteenth annual Horse Show, held at Madison Square Garden, from the 15th to the 20th of November, was a great success. For years the New York Horse Show prided itself on the fact that it was the only horse show worthy of the name in the United States. It can now no longer do so. St. Louis and Chicago have recently shown how successful a horse show can be made in the West, and in the East, Philadelphia and Boston have shown that successful shows can be held at other points than New York.

The proceeds from the sale of boxes and the attendance on the first few days were somewhat disappointing. It seemed as though "society" was going to drop the show. For years the show of horses has been secondary to the beautiful, well-bred, well-groomed ladies on exhibition in the boxes, and the absence of these would make a material difference to the success of the show. But New York's "400" turned out in good style, and the show's success was assured.

There was no doubt, however, that the "400" took less interest in the show than in other years because, as one person curtly put it, "there is no one in the ring we care about." There has been a rapid falling off in the number of exhibits made by the wealthy class. Dealers and professionals are entering the ring with good horses, to secure which they have scoured the country and are making it almost impossible for the private individual to train, fit, and show a horse successfully against them.

A peculiar feature of the show this year was the successful way in which the American trotting stock climbed into first places in the harness, and particularly in the high stepping classes. The Hackneys were at a discount. When the Hackney style of a carriage horse became popular a few years ago, the horse dealers were asked to supply horses of this type, but they could not get them. To meet the demand, the knife was used on many trotting stallions. Size was obtained in this way, and action was obtained by education and by weighting the fore feet, but the hock action was almost entirely wanting. Carriage horses were thus obtained with good fore ends and a certain kind of action, but the drooping croup, the cat-like hips, and want of hock action made a very bad hind end. Such animals were set up as the desirable type of carriage horses, and at the recent show, horses of this description were given the preference to high-stepping Hackneys that had made a clean sweep the country over. Truly the love of the American for the trotting horse seems to prevent him from seeing good in any other breed.

The trotting horse as we have him at present is not fit for heavy harness work. He lacks the smooth rotundity desirable in a good carriage horse, the hock action and the substance to do his work with ease and grace. The trotting stock, however, will make the foundation for a grand lot of useful carriage horses, but they require a top cross of the Hackney. No matter how good an actor or carriage horse a trotting stallion may be himself, not one in a hundred of them can reproduce himself, and it is not to this source that we must look for a supply of desirable carriage horses.