

intention was to feed them to the pigs as the only thing they were fit for. The agent pulled an apple and tasted it: "I'll take those," said he. I remonstrated with the man, as the fruit was unsalable. "No matter, they are Baldwins," was his reply. The fruit was pulled, packed into barrels with the agent standing beside the packers, and the man himself put on the label, "Choice Baldwins, put up by Montreal." This agent was probably employed for the season and paid so much per barrel. He had nothing to lose. No wonder that a year or so after I had a letter from a friend in Glasgow complaining of the inferior quality of our American apples. The thought struck me that my Glasgow friend had unluckily lighted on one of my barrels of *Choice Baldwins*, but I felt relieved by the thought that my name was not on that barrel.

Lambton Co., Ont.

Notes on Plum Growing from Georgian Bay Fruit Experiment Station.

There are now on test at this Station 133 varieties of plums, but only about twenty varieties have been sufficiently tested to justify a decided opinion on them. The experience of the past two years seems to have most fully demonstrated the fact that there is no longer any use of growing anything inferior or common, and I am sorry to say that even quality won't compete against size and appearance. The best selling and most profitable varieties the past season were Bradshaw and Washington for early (the latter is a poor shipper and not to be recommended for planting largely in commercial orchards); Glass, Gueli, and well-grown Lombard for mid-season. Small Lombards are worthless; if trees are overloaded they should be thinned. Pond Seedling, Coe's Golden Drop, Yellow Egg, Prune Claude, and German Prune for late varieties. Even these choice varieties would sell for little more than would pay expenses. Thousands of baskets were sold here (Thornbury) at twelve cents to twenty cents per basket, and many more thousands were left to rot in the orchards. Now, in the face of these facts is it not time to either call a halt in planting or secure more extended markets.

Cultivation.—Plow late in fall when all danger of stimulating a late growth is past. It will leave the soil in much better condition to conserve moisture next season. If this cannot be done plow in spring as early as possible, rather deeply for young trees, to encourage deep striking of the roots. Follow this with very frequent shallow cultivation. This should be continued till August, when cultivation should cease. We don't want to encourage a late growth, but a hard ripening of the wood. Apply manure any time from late fall to early spring when snow is not too deep. Soil should be kept rich enough to grow to perfection any kind of hoed crops.

Black Knot.—Cut them out whenever seen and burn. Make a thorough inspection in summer and in fall when leaves are off. If knots are found on trunk or large limbs cut off smooth and apply kerosene or turpentine (to the knot only); if it comes in contact with the bark it will cause it to shrink. **Leaf Blight.**—Spray with Bordeaux mixture two or three times during the summer. This, we believe, will also to a great extent prevent the spread of black knot fungus. **Curculio.**—Spray as soon as blossoms fall: with water, 40 gal.; Paris green, 3 ozs. Repeat in five to seven days, with Bordeaux, 40 gal.; Paris green, 3 ozs. Keep thoroughly agitated. This has never failed with me, and will also answer as a first spraying for leaf blight.

J. G. MITCHELL,
Grey Co., Ont., Nov. 24, 1897. Experimenters.

DAIRY.

What Does the Farm Separator Save to the Farmer and the Creamery?

BY J. A. KINSHELLA, SUPERINTENDENT GOVERNMENT CREAMERIES, ASSINIBOIA.

This important question every farmer and dairyman throughout Canada, as well as this far-off prairie country, should carefully study out. It is not only in this Territory, where the dairy industry has only begun, but in Ontario, the banner Province of Canada, we find many farmers constantly incurring heavy losses by following the old methods of our forefathers by still clinging to the shallow pans and deep-setting methods of creaming milk. The argument of many such farmers is that their fathers made a good and honest living by the old method, and they can see no reason to discard these for a system they know nothing of. I have had an extended experience in making both butter and cheese, inspecting milk in the creamery, the cheese factory, and in the farm dairy, the buttermilk at the creamery, and the skim milk from the separator during my nine years' work in Ontario; but the losses that the farmers sustain by the ordinary methods of skimming has never been as plainly forced upon me as during the past season's experience in this country. I have successfully demonstrated to many farmers during the past season, by actual tests of their skim milk, the losses which they sustain, and by actual tests I have found these to run from tenths of 1% to 1 and 1/4% of butter-fat. Nothing is so convincing to farmers as to have this test made right before their own eyes, and when they see the losses they are sustaining they may well consider what the farm separator is doing for the farmer. As an instance in point, one farmer who is sending the cream of twenty cows to the

Regina creamery was very much prejudiced against the separator, but finally brought samples of his skim milk, and after seeing the results of the carefully conducted test made with the Babcock tester, which showed that his skim milk contained nearly 1% of butter-fat, and striking an average as to the quantity of milk produced each day from his herd for seven months, and taking the average loss of butter-fat from a number of separate tests, we found he had lost on the season's milk from his twenty cows just \$93.00. This patron decided on having a separator next spring. The above case plainly shows the losses many farmers sustain. With fifteen or twenty cows the loss is often enough to pay for a separator in one season. The argument is sometimes used by the farmer who is not convinced on the separator question, that the ordinary separators are too heavy to be operated by his wife, so that he has to put one of his hired men on the separator for two hours or more each day. This man's time costs ten cents an hour. This for seven months, or two hundred and ten days, amounts to over \$50.00, and so long as the wife will drudge along, raising the cream in the old way, washing pans, etc., this farmer refuses to see the benefit in the separator. Any one who has fifteen or more good cows should buy a turbine separator, with capacity of sixty gallons per hour, and a three or four horse power boiler; this outfit will pay for itself in two years. The boiler, besides running the separator, will prove useful in many ways about the farm in running feed cutters, cooking feed, etc., etc. It could also be used for pasteurizing cream and skim milk. I believe this system must come into general use amongst farmers and creamerymen, and I believe the sooner our Canadian dairy products will successfully compete with the Danish product on the English market. I do not mean to say that all cream should be pasteurized or that pasteurizing can cure all taints and flavors and purify dirty cream and milk, but when other things have failed and you cannot get the butter perfect, pasteurizing should be adopted.

I am sorry space will not permit of my giving an account of our experience with the R. A. Lister pasteurizing plant, which we have had in operation in one of the Government creameries during the past year, but at some future time I hope to give the readers of the *ADVOCATE* some particulars on this interesting subject.

WHAT DOES THE SEPARATOR DO FOR THE FARMER AND THE CREAMERY?

- 1st. Relieves the farmer's wife from a great lot of slavish work.
- 2nd. It takes out more cream, and the cream is of a more uniform quality.
- 3rd. It practically cleans from the milk and cream all filth and constituents heavier than milk.
- 4th. It wonderfully improves the flavor of the butter; and,
- 5th. It makes more butter, more uniform in quality, with a greater saving in labor.

Cheese—Color and Flavor.

As indicated in Aug. 16th *FARMER'S ADVOCATE*, page 355, extensive investigations were in progress among Scotch dairymen, endeavoring to arrive at a means of preventing the discoloration of cheese, which had previously been learned to result from the effect of bacterial life. In a recent issue of the *Scottish Farmer* the result of a second series of experiments along the line of a preventive treatment is reviewed.

In 1896 Mr. J. R. Campbell, B. Sc., bacteriologist, along with Messrs. R. J. Drummond, John Robertson, and Henry MacFadyen, experts in dairying, carried on a series of careful experiments, which have during the summer of 1897 been repeated in order to verify the conclusions of last year's work. Mr. Campbell expressed the opinion that discoloration was due to acid produced by a bacterium, and that to counteract its action a pure culture or "starter" should be used. Forthwith this line of procedure was pursued in 1896, with the expected results of no discoloration, while the experiments this year, although of the same nature, were conducted in ordinary cheese-factory practice, the tests being made with Mr. Campbell's "pure culture" and Mr. Drummond's "starter." The plan was to have the cheese made by seven of the best makers in Argyle, Wigtonshire, and Stewartry, who made cheese four days in each of the months of June, July and August. On the first, fifth and ninth days they made cheese in the ordinary way without the use of any "starter"; on the second, sixth and tenth they made cheese with sour whey as starter taken from the previous day's making; on the third, seventh and eleventh they made cheese with the aid of a "starter" provided by Mr. Drummond; and on the fourth, eighth and twelfth days "pure culture," provided by Mr. Campbell, was used. Besides the experimental work done by these seven makers, other three expert makers conducted, if possible, a more crucial series. In these they made on the first, fifth and ninth days one-half the milk without "starter," and the other half with Mr. Drummond's "starter"; on the second, sixth and tenth they repeated the experiment, only substituting Mr. Campbell's "pure culture," for Mr. Drummond's "starter"; and on the third and fourth, the seventh and eighth, and the eleventh and twelfth days they pitted the "pure culture" and "starter" against each other.

The cheese were judged by the following scale of points: Color, 25; texture and body, 35; and

flavor, 40 points. Especial interest was taken in the flavor from the "starter" and "pure culture," because the experiments of 1896 seemed to indicate that while perfect color had been secured by the use of these ferments, flavor had to some extent been sacrificed. Judgment was given with great care. The two best cheeses in the lot were made on two consecutive days—the one by the use of "starter" and the other with "pure culture." They each received full marks for color, texture, and flavor. The two second best cheeses received full marks for color and texture, but five points were deducted for deficient flavor. In one was used "pure culture" and in the other sour whey. Another cheese in which "pure culture" was used scored full for color and texture, but lost ten points on flavor; while another made from "starter" received full for flavor and color, but lost five points on texture. While the experiments were conducted with a view to arrive at conclusions regarding a remedy for discoloration, so far as the report of the committee at hand gives light, no cheese in the entire collection, however made, showed discoloration; and while most of the experimental cheese was scored down slightly on flavor, it is concluded that the flavor has been much improved, as in no case where the cultures were used was there a single complaint made on the score of taints. The conclusions arrived at are that a good maker can make good cheese even with sour whey as a starter, but the results are rather uncertain, while the best and most uniform results, especially in coloring, are got by using either "starter" or "pure culture" as the governing ferment.

The Western Ontario Butter and Cheese Convention.

A meeting of the Executive Committee of the Western Ontario Cheese and Butter Association, consisting of President A. F. McLaren, First and Second Vice-Presidents J. S. Pearce and Harold Eagle, R. M. Ballantyne, and the secretary, George Hatley, was held in London, Nov. 13. It was resolved that the annual convention, to be held in the London Opera House, take place on Jan. 19, 20 and 21, 1898. The president, Mr. A. F. McLaren, was appointed to go to Montreal and make arrangements with the two main Canadian lines of railway for the best possible obtainable rates to and from the convention. Some of the notable gentlemen who will attend and address the meeting are: Hon. Sydney Fisher, Dominion Minister of Agriculture; Hon. John Dryden, Provincial Minister of Agriculture; Prof. C. C. James, Ontario Deputy Minister of Agriculture; W. H. Jordan, Sc.D., director of the New York Agricultural Station, whose subject will be, "Certainties and Uncertainties of Scientific Feeding of Animals"; and Mr. H. B. Gurler, of Clover Farm, De Kalb, Ill., who will discuss buttermaking. Among others expected are the following: Dr. W. D. Connell, Kingston University; A. W. Campbell, Good Roads Commissioner; Prof. H. H. Dean, B.A., principal of the Guelph Dairy School; Prof. J. W. Robertson, Dominion Agricultural and Dairy Commissioner; J. A. Ruddick, Kingston Dairy School; Hon. Thomas Ballantyne; Andrew Patullo, M.P.P.; D. Derbyshire, president Eastern C. and B. Association; Prof. Frank T. Shutt, M.A., Central Experimental Farm; and others. The next meeting of the Executive will be held in Brantford during the Fat Stock and Dairy Show, when the Ministers of Agriculture will be interviewed regarding the coming convention.

Wholesome Milk Supply.

As an outcome of the tuberculosis agitation in some of the United States some two years ago in connection with the milk supply of large cities, and an immediate result of there having been found last winter a tuberculous calf near the city, Toronto people became much agitated regarding its milk supply. So much was this the case that the city Board of Health was finally led to demand farmers supplying milk to the city to have their cows tested. This, however, met such vigorous opposition on the part of cow owners that the matter was dropped. The agitation indicated, however, that a large number of Toronto's citizens much preferred to drink milk of which there was some certainty as to its healthfulness. As an outgrowth of this, one enterprising firm, known as the Kensington Dairy, undertook to supply what seemed to be demanded. To this end, all their milk and cream supplies were obtained from scattered farms, selected for their sanitary condition and evident reliability of their owners. These dairies are each inspected, cows, premises, and persons in charge, once a month, so that no unsanitary conditions are allowed to exist that could interfere with the condition of the milk. The milk is also handled in bottles and cans, which are thoroughly sterilized. In fact, everything is done to enable the firm to supply the market with what is desired. The result is, this firm is getting the custom, which is well deserved.

This method, it must be allowed, is decidedly along the right lines, infinitely more satisfactory than if the Board of Health had set out to compel every dairyman to have his animals tested, thus calling into operation a set of machinery extremely cumbersome to handle, besides gaining the illwill and opposition of those interested in the source of supply. By this private method only harmony prevails, the citizens get what they want without any extreme compulsory measures, with which there is usually no end of trouble in carrying out.