

he now has one hundred and thirty acres cleared, and the cost of clearing he estimates at from \$10 to \$60 per acre, twenty-five acres costing him the latter sum. Log buildings have been erected, and his stock numbers eight horses, two colts, thirteen cattle, and fourteen pigs. He values his farm at \$15,000, and sold last year sixty tons of hay at \$20 per ton, eight hundred bushels of oats at 55 cents per bushel, thirty bags of potatoes at \$1.00 per bag, and other produce, amounting in all to probably over \$2,000. He hires some help, at wages running about \$30 per month and board. Everything has been higher in the Temiskaming district than in the Southern parts of the Province, wages being better and prices better. Dressed beef, for instance, commands \$8.00 per cwt., pork 14 cents to 15 cents per pound, and eggs 30 to 50 cents per dozen.

* * *

Fourteen years ago, John McChesney came to Temiskaming from Hastings County, and took up a homestead of Crown land, all covered with bush. To clear this, it has cost him about \$40 per acre, but the outlay has evidently been applied to good purpose, since, from having only \$90 when he arrived, he has hewn out a home for himself, for which he was offered \$10,000 three years ago, and which he is now holding at \$20,000.

Neil McFayden, a native of Grey County, came to New Liskeard from Peel, and settled at Uno Park in 1897, on Crown land in the bush, with no road leading to it. He estimates the cost of clearing the green bush at \$40 an acre, though now, since it has been burned over, he says he could do it for \$5. The timber or wood was of little value in those days, but would now realize three times as much as could be made from it fourteen years ago, and, in some cases, enough to pay for the cost of clearing. Mr. McFayden has forty acres cleared, a house and small barn, a couple of head of cattle, and a span of horses. He started without a dollar, worked out the first five or six years, and went West three summers to work in the harvest. He values his property today at \$2,000 above encumbrances.

THE DAIRY.

Effect of Rusty Cans on Coagulation.

Cheesemakers have to face many difficulties in the process of cheesemaking, difficulties which upset their best intentions, and result in an inferior product, that has to be sold at a considerable financial loss. The elaborate studies which scientists have made of dairy problems have, however, enabled us to understand better the source of these troubles, and have given us a means to avoid them or overcome them, if necessary.

The cheesemaker is seldom able to control the coagulation of his milk with rennet. Apparently, without any cause, there is a considerable irregularity in this coagulation, and the cheesemaker is often at a loss whether to blame his rennet extract or the cows which secreted the milk. Very few of them know, however, that the utensils used in transporting the milk are nearly always to blame.

At present, the rennet industry has come to such a state of perfection that the cheesemaker can fully rely on the better-known trademarks. As long as he keeps in mind that rennet weakens when it gets older, no trouble is to be expected from this source.

The quality of the milk varies for the different breeds of cattle, and it takes more rennet to coagulate the milk of a Jersey than the milk of a Holstein. The cheesemaker, however, receives from day to day the milk of the same cows, and, as long as he mixes all his milk carefully together, the chances for trouble are very small.

The condition of the cans in which the milk is transported is, however, of the greatest importance. The presence of iron in milk has a retarding influence on the coagulation, and the milk has plenty of opportunity to come in contact with iron, as it is often transported in cans covered with rust.

It will certainly surprise our farmers to see the influence which iron rust has on milk, especially when this milk comes a long way. We did an experiment in which milk was kept in rusty cans for a certain number of hours, and then we determined the time it took to coagulate this milk with rennet. At the same time we kept milk in heavy, well-tinned transport cans for the same number of hours. The results were as follows:

Hours in can...	1	2	3	8	16	24
New can	23	20	20	19	17	14*
Rusty can	24	23	23	25	27	31*
Difference	1	3	3	6	10	17

*Minutes to coagulate.

We see from these results that it took, in one instance, 17 minutes longer to coagulate the milk on account of the milk being kept in a rusty can. Every time that we had to handle milk which arrived in rusty cans, we experienced the same trouble. Milk which has been in rusty cans for several hours has often a peculiar bluish-gray

color, and we have been able to extract as much as a pound of iron from 1,000 pounds of such milk.

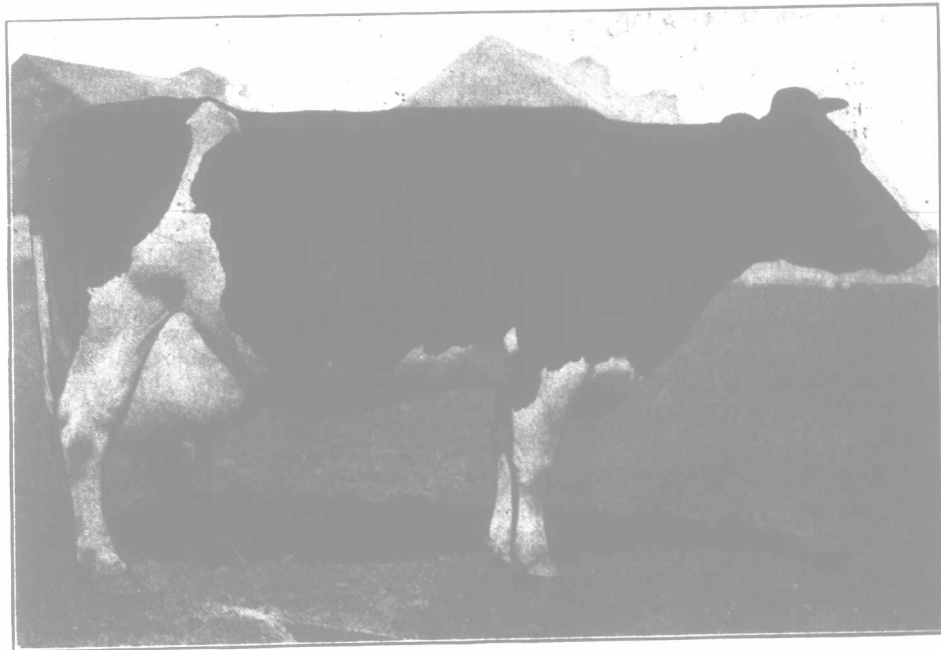
The probable explanation is that the acid of the milk dissolves the iron of the can, and brings thus a new salt in the milk, which will make the total solids higher. We know that milk which is very high in solids, as Jersey milk, requires more time to coagulate than milk low in solids, and, therefore, the iron-containing milk will need more time for the coagulation. Further, the iron has absorbed much acid, reducing the acidity, and, with a decrease in acidity, milk takes more time to coagulate with rennet. It is thus quite natural that the coagulation should be retarded in this case.

Milk cans in this country are generally in poor condition. We do not need to describe the cheaper kind of American transport can; they are of such a poor construction that they become dented after being used half a dozen times. With the increase of indentures, the tin begins to crack, leaving fissures for water, milk and acid. We have seen many cans where the tin layer did not cover all of the iron, thus leaving small surfaces exposed, which become easily damaged. Under such conditions the skin peels off, and in a short time the can has the well-known appearance.

When visiting Europe, the attention is immediately attracted by the superior quality of the dairy utensils. As a rule, the cans are of heavy steel, and well tinned. Experience shows that these cans are the most economical in the long run, as there is less fear for denting and wearing off of the tin.

Not only the coagulation of the milk is retarded by these unsanitary cans, but our cheesemakers are also liable to accept milk which should be rejected, following their own regulations. Milk may contain more than two-thirds per cent. of acid, and still be satisfactory following the ordinary test, in case the milk contains much iron.

The only remedy to these unsanitary conditions is a good example of cleanliness given by the management of the cheese factory. They should enforce a sanitary appearance for their own utensils—which would be impossible if they allowed rusty cans to be used—and then they can require from our dairymen to live up to a certain standard.



De Kol Pauline Sadie Vale (5944).

Champion Holstein cow, Toronto and London, 1910. Owned by James Rettie, Norwich, Ont.

It is the duty of an operator to refuse milk in rusty cans for the reasons given before. The severe competition among the different factories for the manufacture of dairy products encourages the indifferent producer to proceed with his bad habits, and discourages the progressive, painstaking one. The only remedy will be to sell the milk on its merits. Two ways are open to accomplish this.

One is that milk produced under sanitary conditions commands a higher price. In the other and better system, only such milk is accepted as is produced under hygienic conditions. This latter system is in general use in Holland and Denmark. The patrons are required to follow sanitary and hygienic methods, which involve very little expense; a veterinarian in service of the factories visits all the stables regularly, and reports as to the conditions encountered. In this way the factories are supplied with sweet, wholesome milk at the lowest possible cost. We will finish up with the following conclusions:

1. A better grade of utensils should be used in the milk industry. The iron or steel plate should be heavier and better coated with tin.

2. No milk should be accepted in cheese factories which has been kept in rusty cans. (a) Such milk contains iron, and coagulates more slowly. (b) Such milk may have a high acidity, and still pass for sweet, fresh milk.

3. The cheese factory should be an example of neatness.

4. Co-operation will improve conditions in general.

5. The production of milk of superior quality should be encouraged, and milk of low grade rejected or gradually improved.

F. VANDERLECK.

Macdonald College, Que.

Bringing Up the Cows.

One afternoon a visitor was looking about the well-kept homestead and lanes of an Oxford (Ont.) County farm, when presently from the pastures he noticed a long line of matronly-looking cows marching towards the stables.

"Who's driving them?" he asked of the dairy farmer. "I don't see any man or boy."

"Oh, no, we never have to go after them."

"Send a good dog, I suppose?"

"No, sir, I wouldn't have a dog on the place. He would chase away more milk in fifteen minutes than I could feed into those cows in half a day."

"Well, well, and how do you get them to come up, anyhow?"

"Oh, that's easy. They know that at 5.30 every afternoon there will be a little dish of meal for them in the stable mangers, and they are always on hand for it almost by the tick of the clock. The dog is out of business on this farm."

GARDEN & ORCHARD.

Fine Potatoes and Turnips in New Ontario.

Editor "The Farmer's Advocate":

Responding to your request, I am sending a short account of my impressions gained by a visit to the New Liskeard Fall Fair, and a trip through that northern country. With regard to the Fair, the outstanding features of the root and vegetable exhibit, of which I had the honor to be judge, were: First, the potatoes. That northern country seems to be particularly adapted to their cultivation, and I believe the day is not far distant

when they will be able, with proper business management, to supply a very profitable trade in them for Toronto and other older Ontario cities. But I fear that many of the growers there are making the same mistake that has been made in the past in Old Ontario, viz., too many varieties, and some of them altogether unsuited to their needs. They appear to have a most wonderfully productive soil, and when some of the coarser and larger-growing varieties, of the Maggie Murphy or similar types, are planted, the result is an almost abnormal growth — potatoes oversized, coarse in appearance, and altogether unsuited for a high-class city

trade. On the other hand, where farmers have wisely selected some of the finer-bred types, such as Delaware, Carman No. 1, Green Mountain, etc., the results are most excellent. We had some good examples of them at the Fair, and I saw some at several farms I visited, of fair size, good shape, clear skin, fine texture when cut, equal, if not superior, to the best stock shipped into Toronto from noted potato-growing districts.

Second.—Turnips. There were Purple-top Swedes that would weigh eight or ten pounds or over, with small taproot, smooth as if turned in a lathe, clear skins, no worms, no prongs. I cut several, and found them of very fine texture and flavor. Some very good white turnips were shown, also. In carrots, the display was large. White and Red Intermediate being especially good. Cabbages were also good. Coming to the more

tender vegetables, while there were some very fair tomatoes exhibited, I doubt if tomato-growing can be made a commercial success in that district. Some very fair specimens of pumpkin and squash were shown. Onions, judging by those shown at the Fair, attain a very fair size, but ripen poorly.

Taking the exhibit as a whole, it would compare very favorably, indeed, with most similar shows in older Ontario. THOS. DELWORTH.