THE DAIRY.

For THE RUHAL CANADIAN.

CREAMERY.

With our experience so far in the use of the cherry can for deep setting c? milk, we have found out. a few things. First, we have found that those who use ice will show a greater number of inches of cream than those who do not cool with ice ; but an inch of cream raised with ice in the water will not yield as much butter as an inch of cream raised without the aid of ice. In the joint stock or gathered cream system, the inch standard is liable to do injustice to those who raise their cream at a higher temperature, as the higher temperature gives more butter, and of better quality. Not having a knowledge of these facts has caused dissatisfaction in the management of a few creameries, and been the means of closing one and changing another into a cheese factory. The only equitable plan of awarding dividends is to test the cream by actual churning, as was practised in the Seaforth creamery during the past year, by which even justice was done to all, and fraud becomes impossible where ordinary care has been used.

WHAT WE BELIEVE.

That the deep setting plan, as we have used it, is not exactly right. The cans being entirely submerged in water, the greatest cooling is done at the bottom while it should be done at the top, for the following simple reasons: first, cold water is heavier than warm, and cold water will sink to the bottom of the box and cool the milk at the bottom first, which becoming heavier remains at the bottom and has no tendency to produce a current from the bottom toward the top, which is so essential to enable the milk to throw the cream to the top. To do this ice is required, and then ice is injurious to the quality of the butter.

WHAT WE DO NOT KNOW

is how we are to fix our cherry cans so as to get the upper half of the can in the water without cooling the lower half, or what can we are to substitute for it, so as to keep within reasonably cheap bounds. We have not had time to experiment with the half immersion system, but are certain that it is the true one, and that all the cream that is fit to make good butter can be raised by it in a few hours without the use of ice, or without cooling much below sixty degrees, which can be conveniently done with good well water. The theory of the operation is this: Suppose we have a tin can twenty or twentytwo inches high, of eight or nine inches in diameter and a head or flange around the ontside, midway between the top and bottom, so that when the can was let down through the bottom of the water box, the head or flange would make a water-tight joint with the bottom of water box. Now, say we strain milk warm from the cow into the can at ninety-five degrees, put on the lid and pump the box full of water at say forty-five degrees ; the upper half of the milk is cold, the cream becomes lighter in cooling and rushes to the top; the water of the milk becomes heavier by cooling and falls to the bottom, bat

by dropping to the bottom it forces its own bulk of warm milk up, which, when it comes into the cold zone surrounded by cold water gives up its cream, gets heavier, descends to the bottom to displace another volume of warm milk, and so the process continues with a continual current from bottom to top, somewhat after the fashion of water over a fire till all the milk has been reduced to the heat of the water in the box after the milk has been sent from bottom to top several times in proportion as the cooling has been done, slowly or rapidly. This, according to my little knowledge of the laws of heat and liquids, should enable any one, without the use of ice, to get all the desirable cream from milk with a small quantity of water, and without cooling much, if any below sixty degrees, which would insure a prime article of both cream and butter. M. McQUADE.

Egmondville, April 8, 1886.

A COW WITH FIRST CALF.

It is often the case when a heifer has her first calf that the farmer thinks she will not give more milk than will keep the calf in good condition, and lets them run together to teach her the mystery of being milked when she has her next calf, says an exchange. In this decision there are two mistakes that go far to spoil the cow for future usefulness. Cows, says a contemporary, are largely creatures of habit, and with their first calf everything is new and strange to them, and they readily submit to be milked, and think it is all right; but suffer them to run with the calf the first season, and a vicious habit is established that they will hardly forget in a lifetime. If they ever submit to be milked quietly, it is evidently under protect. But there is a greater objection than this-the calf running with the cow draws the milk every hour or two, so that the milk vessels are not at any tlme 'distended with milk, though the quantity secreted in a given time may be large. But this is the natural time to distend the milk ducts and expand the udder to a good capacity for holding When, with her next calf, you require the milk milk. to be retained twelve hours, the udder becomes hard and painful, and the milk leaks from the teats, or, more likely, nature accommodates the quantity of milk secreted to the capacity to retain it, and the cow becomes permanently a small milker. Much of the future character of a cow, therefore, depends upon her treatment with her first calf. Everything that aisturbs the quietness of a cow impairs the milk both in quantity and quality. To obtain the best results, therefore, there should be a regular time and place of milking, and, as far as possible, the milking should be done by the same persons. Any cow can be milked dry in a few weeks by irregular milking, sometimes at intervals of twenty-four hours and sometimes of six. Separation from her usual company, a change to new location, a strange milker, and, above all, a blustering manner and scolding voice, are sources of irritation that more or less impair the milking qualities of a cow. No cow under the influence of fear will give her full quantity of milk.