A Hindrance to Dairy Improvement.

The dairy industry, in spite of the many irritating hindrances to its progress in Western Canada, is for all forging ahead, more rapidly in some quarters than others, but just the same going ahead.

One of the hindrances recently interposed is the doubling of the rates on cream that is sweet by the express companies. The central creameries ship in a lot of cream for butter-making purposes and they can make a better article when the control of the ripening of that product is in their hands entirely. Rates are made on many such products seemingly indifferent to the effect such may exercise in way of spoiling a business or an article. If the rates for sour cream are too high or too low, it would not increase business for the carrying companies to put up the rate on sweet cream. Rather it would be helping the dairy industry along to reverse the rates by putting that for sweet cream at that now charged for the acid tasting article. Here is a chance for the Dairy Association to do some work, and incidentally give the cream grading idea a boost forward. There are enough discouragements and hindrances to the successful pursuit of dairying in the province of Manitoba without the common carriers discriminating in favor of inferior raw material.

Why Fluctuations Occur in the Milk of Cows.

Fluctuations in the composition of milk might be said to be of normal and abnormal character. The normal fluctuations were due to breed, individuality and time since calving. Were it not for the fluctuations due to individuality there would be no possibility of improving the breeds of dairy cows by careful selection. Of the abnormal fluctuations the most striking was the difference between the first few and the last few ounces of milk drawn from the udder—whilst the first few ounces contain scarcely any fat, the last would contain frequently as much as 8 per cent., even though the average of the whole milk showed only 3½ per cent. This fact was of considerable importance, as the composition of the milk depended greatly upon whether the milker brought away these strippings so rich in milk fat, or whether it was neglected. Both the calf and a good milker, when milking, caused a certain jerking of the udder which appeared to assist in bringing away the cellular tissue. The milking machine, according to the experience of some, quite failed to get the best results because it did not bring away the fat globules nor the cellular tissue. By leaving this a physiological danger ensued of blocking the growth of the milk-producing cells and thus causing the animal to gradually dry off.

The second cause of abnormal milk was the uneven time which elapsed between the morning and the evening milkings. Even were the time equal, the morning's milk would be poorer because the lower temperature of the night would necessitate the blood being utilised to maintain the temperature instead of to produce milk—the longer the intervals between the milkings the poorer the milk. It would seem that the serum secretion was continually taking place, so that if the cellular growth were in the morning diluted with a serum secretion of 16 hours and in the evening with a serum secretion of only 8 hours, it was easy to understand why the latter had such a rich composition. Besides the above, which might be said to be the most frequent causes of abnormal fluctuations, there are others of less frequent occurrence—thus, turning the cows out to grass in the early spring invariably produced a rapid change in both the quantity and the quality of the milk; the serum secretion appeared to be at first augmented more rapidly than the cellular growth, thus causing very poor milk for a short period, which, under favorable conditions of weather, would rapidly improve in composition. In the fall the drought was also known to materially affect the composition of the milk by diminishing the solids other than fat, so that the milk appeared to contain added water. Temperature materially influenced the milk yield both in quantity and quality, and so also did excitement, no matter from what cause. The influence of season was as yet little understood; and the past year afforded a striking illustration of the effect of season, for in many parts of the country milk had been exceptionally deficient in fat, as had been evidenced at every show which had been held where the milk of the cows was tested. We have yet to learn the reason for this peculiarity.—*Farmer's Gazette.*

Raise the Standard of Your Cows-

Farmers have of late years become more and more familiar with machinery, what with binders, mowers, windmills, etc., and recently the gasoline engine.

It is therefore not beyond the capabilities of the average farmer to master the Babcock test and by its use find out wherein his cows are making or losing money for him. Almost any dairy supply house or cream separator people can supply you with a Babcock outfit for $5.00, and if it is used carefully and conscientiously it will be worth one hundred times its cost price. The apparatus consists of a pipette of glass on which will be found a mark. There is an acid measure test bottles and a centrifugal machine. A four bottle size is a handy one for the farmer to have. There is a little chemistry involved in the operation, but the principle is not hard to grasp, once the attention is given to it. The following directions will help one to understand, and should the travelling dairy come your way, give particular attention to the handling of the test—there is money in it for those who apply the lessons it teaches. The first thing to be done is to secure a fair sample of the milk to be tested. This should be at a temperature of from 60° to 70° and be mixed thoroughly, either by stirring or by pouring from one vessel to another two or three times. Then take the sample in the pipette drawing the milk up with the mouth until it is above the mark in the pipette, then quickly slipping the fingers over the upper end of the pipette and allowing the milk to flow out until it reaches the mark. When the proper amount of milk is secured in the pipette, allow this to flow into one of the test bottles without waste. With a four bottle tester four different bottles can be tested at one time and the samples of milk should be placed in each of these first. Then measure the acid into each bottle, allowing the acid to flow slowly down the side of the neck of the bottle by holding the bottle in a slanting position. After the acid has been added to each bottle, take the bottles one at a time and mix the milk and acid by rotating each of the bottles holding it by the neck; do not shake up and down simply rotate gently until the acid and milk are thoroughly mixed. The acid attacks the casein in the milk and turns it black, creating considerable heat. After the acid and milk have been thoroughly mixed in this manner, place the bottles in the testing machine, put on the cover and whirl for four or five minutes. Then add to each bottle hot water up to the neck. This can be added by using the pipette just as for the milk ,or in cases where there is much testing to be done hot water can be kept in a little tin bucket hung on a nail above the testing machine and conducted from it by a rubber tube so that the hot water can be added without removing the bottles from the machine. After running in hot water up to the neck of each bottle, whirl again for one minute. Then add hot water until it comes to the 8 or 9 per cent. mark on the bottle. After this whirl for another minute. This completes the operation of testing and the percentage of fat is determined by reading the scale on the neck of the bottle.

The fat should be a rich yellow in color. If the fat column is very dark it indicates either that too much acid has been used or that the acid was too strong. If very light in color the indication is that not enough acid has been used or that it is too weak, In the one case use less acid and in the other more. In reading the percentage hold the scale level with the eye and read from the top line of the fat column to the bottom. The easy way to read the test is to measure the fat column with a pair of dividers then place one leg of the dividers on the zero mark and the other leg will point to the percentage

THOS. CONMEY'S WHEAT CROP NEAR PRINCE ALBERT. AVERAGE YIELD, 45 BUSHELS PER ACRE.

FIELD NOTES

Events of tne Week.

CANADIAN.

Mrs. Featherstone Osler, who last December celebrated her one-hundredth birthday, died quite peacefully at her home in Toronto on the 18th of March.

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The annual statement of the federal Minister of Railways shows a Surplus in the revenue of the Intercolonial railroad of $93,881 for 1906.

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The list of successful candidates at the third-class Manitoba teacher's examinations is as follows: Mary Attridge, M. H. Boake, Tena Coulthard, John A. Carefoot, May Clifton, Ida H. Cummings, Jane Cumming, Eunice Cuthbert, Nat Fitzsimmons, H. K. Greenway, Thvala Jonasson, Effie Johnston, Hallifridur Kristjanson, James Mackay, Dora M. McAllister, Ruby McDiarmid, Margaret N.McGongal, W. G. McIntyre, R. D. McKenzie, May T. MacPherson, Flora McPherson, Harry Pascoe, Mabel Qually, Lily Syndal, Albert Sparling, Margaret Taylor, Ethel P. Thomas, Olive E. Thompson, Winnifred M. Tighe, Genevieve Tinline, Walter F. Tisdale, Jean Wilkie, Christina C. Wright, Andrew Alford, Clara Alford, Eugene Bates, Winnifred Bickle, Annie Bowman, Edith Bullock, Laura Carruthers, Dora A. Dale, Minnie Dalzell, John Delmage, Jesse Freed, Wilmot Gill, Dora Gillman, Louise Harkness, Effa Herron, Margaret Minaker, Edna Morgan, Annie Morrow, Grace McArthur, Mattie McCulloch, Margaret McKay, Alex. McKinnon, Myrtle McLenaghen, Robina McRae, Alice Ormond, Gertrude Riesberry, Jessie Robertson, Laura Romig, Mary E. Ross, Lily Rutledge, Emma Sisley, Maggie Snider, Margaret Storey, Agnes Valens, Robert Wood, Audrey Young.