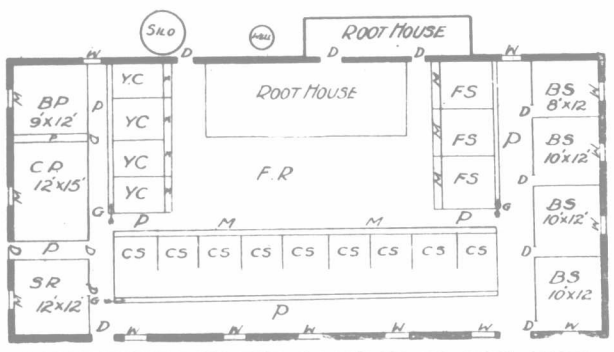
which they know to be well adapted for growing large crops of grain of good quality, and gather each year from those plots enough of the large heads of grain from the most vigorous plants to produce good seed for the succeeding seed-grain plot, they would not only overcome the tendency to run out, but they would increase the yield and quality of their grain crops sufficient to make a difference between profit and loss.

MACDONALD SEED-GRAIN COMPETITION.—Two years ago arrangements were made by Prof. Robertson and Sir William C. Macdonald, of Montreal, so that cash prizes might be given to boys and girls living on Canadian farms, with a view to encourage them in the study of the benefits to be derived from a systematic continuous selection of seed grain.

The competitors in the Macdonald Seed Grain Competition have been operating a seed-grain plot of one-quarter of an acre, each year selecting seed for their plots according to instructions which were outlined for them by Prof. Robertson.

We now have in the neighborhood of eight hundred boys and girls who have been following up this very important branch of nature study. The results have been quite satisfactory. These young people have been depending largely on the encouragement and instructions which have been given them by their own people. It is hoped that in the near future they will have help from a well-trained teacher, and the work will be carried on in connection with our rural schools.



CATTLE-STABLE BASEMENT IN BARN OF MR. JOHN ANDERSON, SIMCOE CO., ONT.

B. P., bull pen; B. S., box stall; C. P., calf pen; C. S., cow stall; Y. C., young cattle; F. S. fattening stall; P., passage; M., manger; W., window; D., door; G., gutter; S. R., separator room; F.R., feed room. Size of building, 40x86 ft.

Stable Manure and Sugar Beets.

The common teaching is that sugar beets are injured in quality by stable manure applied the same season that the beets are sown. That this is not true, at least not on certain soils in New York, is proved in a bulletin of the Station at Geneva. Tests were made for four years—on two farms in widely-separated localities for one season—with results uniformly favoring rather than opposing the use of the stable manure.

DAIRY.

Dairying in British Columbia.

I beg to submit statement of business done in our creamery, "Eden Bank," in 1901. Our creamery is run on a combination of whole-milk and cream-gathering systems. Number of patrons, 70 in summer and about 40 during winter months. There were delivered at the creamery during the year, 114,168 lbs. of butter-fat, from which were made 130,180 lbs. butter. There has been credited to the patrons $28,037, an increase of $3,852.58 over the previous year. A comparative statement of the past five years shows a steady increase in the output and a yearly decrease in the cost of making, as follows:

	Lbs. butter.	Cash to patrons.	Cost of making.	Average price per lb. of butter.
1897....	53,605	$10,591.30	4.35c.	19.76c.
1898....	81,212	16,763 94	4.02	20.64
1899....	96,943	19,527.24	3.86	20.14
1900....	107,615	24,174.42	2.95	22.46
1901....	130,180	28,037.00	2.75	21.50

The trade account for the year ending Dec. 31, 1901, shows a net profit of $2,033.53, being a marked proof of the progress of the company. Of this amount $50 was donated to the managing director, $210 was reserved for repairs and renewals, $57.50 for insurance, $574.57 was placed against bad debts (owing to the assignment of a commission house), and the balance, $1,141.52, was returned to the patrons supplying cream or milk during the year. A large portion of our output was sold in the Coast cities, and during the year we have succeeded in opening up a very good trade in the Yukon, and also in the Kootenays. Our butter is all put up in one-pound prints, and that which goes to the Yukon is shipped in tin cans, which will hold 50 lbs. in prints, and filled with brine before being soldered. Our experience with this kind of package has been very satisfactory.

T. A. F. WIANCKS,
Creamery Operator.
N. Westminster District, B. C.

The Cheese Factory Secretary's Reverie.

Let me see now; how things do change! Twenty-seven years ago, patrons were charged $2.25 per 100 lbs. of cheese for hauling milk and making cheese, and we got no whey returned. No, sir. The cheesemaker kept a piggery at the factory. He must have coined money in those days. The milk-drawer washed the cans at the factory and left them on the farmers' stands ready for the evening's milk. Yes, the milk was hauled twice a day, and the drawer did not generally get through until 8 or 9 o'clock at night. Now the milk is hauled only once a day and made up for $1.55 (and by some factories for less), a difference of 70 cents per 100 lbs., and then the patron gets the whey returned in his can. Is that a good plan? Well, no, I scarcely think so. But the farmers think, like Col. Sellers, there are "millions" in it. The patrons who haul their own milk take a good supply of whey; the drawer who has a heavy load studies how little he can take and keep his patrons from growling. How does the whey go all 'round? Well, there is generally real good water at the cheese factory, and ——— of course, you cannot blame the cheesemaker. How long have I been keeping cheese-books? Last year must have been my 17th season; a good many changes in that period. I remember the first time the inspector came around with the lactometer. Our cheesemaker did not have much faith in it, and quietly slipped out and poured a pail of water in a patron's can of milk, which he marked. By and bye the inspector called him to the weigh porch, saying, "This patron has been watering his milk, we must prosecute him." The cheesemaker asked, "How much water do you think has been put into that can?" After again looking at the lactometer and noting the number of pounds of milk, the inspector said, "About 25 pounds of water." "That is just the quantity that I poured into that can a few minutes ago. I merely wanted to find out if your lactometer was any good." We did not have a Babcock tester then, and when the cheesemaker suspected a patron of skimming, he took samples of the milk in glasses and allowed the cream time to rise. Yes, he could tell pretty correctly, but it was not easy to bring the delinquent to time. On one occasion the cheesemaker reported to a meeting of directors that a certain patron had been keeping the cream from the Sunday morning's milk which he sent to the factory on Monday mornings. After some abortive motions, it was finally carried that the secretary be instructed to write to the offending patron, and the meeting immediately adjourned. The secretary sat down and penned the following: "Dear Sir,—Our cheesemaker has reported to the directors that, while your milk is generally satisfactory, yet for the last three or four Monday mornings it has been found that a quantity of cream has been abstracted. Now, although the directors do not even wish to insinuate that you have been skimming your milk, yet it is possible that while you have been at church, your own cats or those of your neighbors' have been getting access to your milk and licking the cream off, and the directors wish me to state that they would feel obliged if you would see that this does not happen again." The milk came all right in future. In course of time the inspector brought the Babcock tester and tested every patron's milk. On one of these occasions he said to the cheesemaker, "Your milk is all right except No. 9, and that appears to have been partly skimmed, and you must take me to his farm so that I can milk his cows and get a sample of his milk." On the cheesemaker looking at his milk-book to see who No. 9 was, he exclaimed, "There must be some mistake; No. 9 is the preacher, his milk is all right." But the inspector represented the majesty of the law, and he was obdurate, and so they went to the manse. It was found out that the minister and his housekeeper were from home, and the boy who was left in charge of the cow had that morning taken a liberal supply of cream with his porridge from the evening's milk, which had stood overnight. He naturally explained that he thought a patron had a right to take as much as he required for his own use. The inspector pointed out that patrons must set aside the quantity required for their own use immediately after the cows are milked. In this case, there being only one cow, the taking of all the cream that a growing boy could use for his breakfast would naturally make a great difference to the percentage of butter-fat. In next week's local news there appeared something like the following: "The inspector appointed by the Western Dairymen's Association called at our factory and the patrons' milk was weighed in the balance and one or two found wanting. This is a good text for every patron of every cheese factory. 'Be ye also ready, for in such an hour as ye think not the inspector cometh.'" The plan of paying for factory milk by the test now in vogue in our more advanced factories disposes satisfactorily of many of these old difficulties.

OLD DAIRYMAN.

Care of Cream on the Farm.

The care of the cream on the farm is getting to be a matter of supreme importance in our butter industry, on account of the number of "cream-gathering" creameries which are springing up all over our Province. A few years ago the tendency was strongly in favor of "separator" creameries, but the advent of the hand separator on the farm is gradually changing the aspect of the whole business, and whether for good or for evil, remains to be seen. The butter which has been made from "separator" creameries has undoubtedly built up the reputation of our butter abroad, and if that reputation is not sustained we are going to suffer heavily in consequence. That first-class butter can be made from "gathered" cream has been abundantly proven, and especially in the U. S., where large quantities of butter is made from "gathered" cream. Evidence is not wanting, however, to show that the average grade of "gathered" cream butter is not equal to that from the "separator" creameries, and we have to face this fact and apply a remedy if at all possible. Hauling the milk to the creamery to have the cream taken out and then hauling the skim milk back again to the farm is an expensive and, apparently, unbusinesslike method of handling the milk. The hand separator is undoubtedly the proper method of taking the cream from the milk and then hauling the cream only to the creamery, but the loose and careless methods of caring for the cream after it is separated is causing serious trouble in many creameries; whereas, the cream from the hand separator should reach the creamery in the pink of condition if properly cared for. All cream, whether from the hand separator or "gravity" method, should be kept in cold water, and if iced water all the better. Cream from the hand separator should never be mixed with a previous lot until it is cooled down, and to do this properly it should be placed in cold water by itself until the next milking. The can should then be thoroughly washed and scalded, ready for the next lot. "Deep-setting" cream is always, or should always be, cold when it is taken from the milk and it should be kept as cold as possible by placing the cream can in ice water. "Shallow-pan" cream should never be accepted at a creamery, because the milk is always too much exposed to taints and odors. The cream is liable to be tough and clotted, and it is almost impossible to get it to the creamery in a sweet condition. As a rule, the flavor of "gathered" cream butter is taken completely out of the hands of the buttermaker, because the cream is usually sour before it reaches the creamery. There is no excuse for this state of things if the equipments for handling the cream on the farm are what they should be. These are of the simplest kind and consist only of a tank of some sort to hold water and ice and a good cream can with a tight-fitting cover.

The great trouble is that we have so many persons who will not go to a dollar's expense to provide the crudest of appliances for the dairy, and they are the class of people who are keeping down the grade of butter, both creamery and dairy.

"Gathered" cream is collected not less than three times per week during the summer, and every patron should have the necessary apparatus to keep his cream sweet for that length of time, and until we can do that our "gathered" cream butter is going to suffer in quality.

There is a partial remedy in collecting the cream every day, but this adds to the expense. We may, however, have to come to this, and by using the hand separator exclusively we should then have ideal conditions, which ought to give us the finest of butter and which is giving the finest grade in sections where it is in vogue in the United States. Many people do not take proper care of their separators, which, in many cases, are covered with a stinking mess of milk and cream both inside and out.

Such people ought to be ashamed to use a valuable piece of machinery in such a manner, and especially a machine that has anything to do with milk. Anyone who is careless with their separator will be careless in the whole operation of getting and handling their cream, and they not only suffer in pocket themselves but they lower the product of their neighbors who take better care of their milk and cream.

Nothing but clean, bright tinware should be used in connection with the cream. A can with the tin worn off in spots is fatal to the good flavor of cream and should never be used. Stir the cream thoroughly when two lots are mixed together.

J. STONEHOUSE.

Of the eighty-one students who attended the Western Dairy School, Strathroy, this winter, twenty-five wrote on the examinations held at the close of the term.