

assisting one another but little in their solution. The occupation came to be looked upon as hard, and if the farmer couldn't get away from it himself he hoped his sons and daughters could. If, to-day, agriculture has made progress, it has been due to education, organization and investigation.

To-day, in the towns and cities, people are complaining that they have to pay extravagant prices for their food. Eggs, butter, bread, nearly all products have risen, in some cases almost doubled. To those who complained of this, his answer was that he was glad, glad for the farmers, and glad for the whole community. If it be true that the tillers of the soil to-day are getting the best of it, they are only just coming into their rights. In the past, they have had to take the brunt, and received the least for their labor.

But why is it that during the past season butter was higher in Toronto, Ottawa and Montreal than in Old London? During the last generation in Canada and United States there has been a pronounced cityward drift of population, urban population increasing enormously, while rural population made scant, and, in some cases no growth. There are more people in the cities to consume the food, and relatively fewer in the country to produce it. There is another reason: As our people prosper, they are living better. There are more people enjoying luxuries and using necessities more liberally. Then, too, it is a fact that our butter is, as a rule, better than it used to be, and people are eating pounds where they used to eat ounces. This is not only better for the producer, but better for the consumers, who have the better butter to eat.

All that is necessary is for a few more people to turn their attention to the land. In a country like Canada, why should not our brightest and most ambitious young men and women choose an occupation that has so much beauty, so many advantages, and such great scope for ability as agriculture has to-day? True, there is some hard work about it, but a calling that has no hard work is unworthy the ambition of the young men and women of Canada. We want men in this country who have to toil, and thereby develop skill, intelligence and knowledge. Let some of our town people go back to the country, and they will be better off, lead happier lives, and rear better families than they could by remaining in the town.

SPARKLES FROM MCGILLICUDDY'S SPEECHES.

Opinions, as well as products, are interchanged at cheese factories, said Thos. McGillicuddy, of the Agricultural Department, Toronto, in one of his pungent and humorous addresses.

A merry heart doeth good like medicine. Ask the doctor if this is so, and he will say yes, and charge you a dollar; I give it to you for nothing.

In district after district the hog farmhouses have quickly changed into brick and stone, because of the advent of cheese factories.

An excuse given by one dairyman for the blue color of the milk was that the cows were fed on blue grass. Another remembered when charged with sending watered milk that the cow's calf had been taken from her that morning and so deeply was she affected that tears were shed profusely into the milk pail.

A SEASON'S EXPERIENCE OF THE DAIRY TRADE IN MONTREAL.

Cheesemakers' day was opened by an excellent address by Geo. H. Barr, of the Dairy and Cold-storage Commissioners' Branch, who, during the past summer, was stationed at Montreal as official referee in cases of disputes between buyer and seller as to the grade of cheese bought subject to inspection. Following is his address:

The export trade of butter and cheese from the port of Montreal for 1907 was 2,040,190 packages, valued at \$19,635,541. To receive into the warehouse between twenty and thirty thousand boxes of cheese and between five thousand and eight thousand packages of butter per day requires extensive warehouse accommodation, and to inspect these goods and export between 50,000 and 100,000 boxes of cheese each week requires a splendid system of handling the goods and rapid inspection.

TRANSPORTATION FACILITIES.

The condition of the butter and cheese upon arrival in Montreal would indicate that during the hot weather in the summer there should be some system of controlling the temperature on the river boats for both butter and cheese, and a more general use of iced cars for cheese, as many of the cheese arrive in a heated condition, especially when shipped in ordinary box cars.

STILL ROOM FOR IMPROVEMENT IN BOXES.

The Government cargo inspectors report very great improvement in the condition of the cheese boxes last year compared with former years. Still there is room for much improvement, as many of them arrive in a broken condition, and, even after being coopered, they present anything but an attractive appearance as they are being loaded on the steamers.

The butter boxes are fairly uniform in style, but they are often not as clean as they should be.

There is room for very great improvement in putting on the factory brands and weights of the cheese. Many of them are indistinct, and put on any old place on the boxes, giving them an untidy appearance. There are still too many pencils used, instead of stencils for marking the weights.

WAREHOUSES AT MONTREAL.

There are immense sums of money being spent in equipping the warehouses in Montreal with the most modern storage facilities for butter and cheese.

At some of the warehouses the cheese are put directly from the drays into cool rooms, where the temperature is about 45 degrees. I regret to say that there are still some warehouses where the cheese often stand for days where the temperature is almost as high as outdoors, and the quality is injured considerably. It should be the duty of every salesman to acquaint himself with the facilities each warehouse has for taking care of the cheese properly.

UNSATISFACTORY SYSTEM OF INSPECTION.

I am of the opinion that the system of inspecting the cheese and butter, which is generally adopted in the warehouses in Montreal, is not in the best interests of the trade, nor is it as fair to either the buyer or seller as it should be.

All inspection or examination of butter and cheese after it is sold should show, as far as possible, the actual quality of the whole lot. This is impossible under the general practice in the warehouses of testing a percentage of the packages selected at random, and judging the quality of the whole lot by the result of this examination. I believe the inspecting at the present time is done fairly, and as accurately as it is possible under the present system, but it is not done as thoroughly as it should be and can be done, if the factories would adopt a uniform and honest system of marking the cheese from every batch or vat, and the butter from every churning. If this were done, it would then be possible to select one package from each vat or churning, and, when these were examined, an absolutely correct indication of the quality of the whole lot would be obtained, without injury by unnecessary use of the trier. It often happens that the cheese from one vat, or the butter from one churning, is very inferior in quality, while the rest of the shipment is quite up to the standard.

NUMBER EACH VAT OR CHURNING.

When the inspection is made under the present method, one or two of these inferior boxes or packages may be in the number examined, and the whole lot is rejected; but if each batch or churning were numbered, the packages representing the inferior batch could be easily set aside, and the reduction in price figured on the actual quantity of inferior butter or cheese, instead of being averaged for the whole lot.

Let me give a couple of instances that happened during the past season.

A WHOLE LOT CUT ON ACCOUNT OF ONE CHURNING.

I was called upon to examine a lot of 31 packages of butter, which was rejected on account of the flavor. No fault was found with anything else. A representative of the creamery being present, I asked him to pick out five packages for me to examine. I found two in the five with a strong, leeky flavor, and, of course, put the lot second grade. I said to the creamery man: "It is just possible there is only one churning with that flavor, but we cannot try every package." He found out from the maker that this was the case, and immediately bought a set of rubber stamps, and has numbered every churning since. The merchant made a cut of 1/4c. per lb. on the lot, amounting to \$8.68, which was equal to a little over 3c. per lb. on the five boxes which was wrong in flavor.

The other case was on cheese. Five boxes had been examined, and two were found wrong in flavor. When I went to look at them, I saw the batches were numbered, and asked to see a box of each batch, and found all the batches, but one, fine. The two cheese the inspector found wrong had the same number. The merchant was pleased to know that he had a fine lot of cheese when the five inferior ones were picked out.

I found quite a number of such cases later in the season, when quite a few of the factories in Quebec were marking the batches. The numbers may be put on with 1/2-inch or 3/4-inch rubber stamps, and should be put near the factory brand.

If the cheese is made in two vats at the factory, the first day's make would be 1 and 2, the second day's make 3 and 4, and so on, up to the date of shipment, then commence again with 1. The churnings of butter could be numbered in the same manner.

FLAVOR THE COMMONEST DEFECT.

I found the chief defects in the cheese, which I was called upon to examine, as follows: Nearly ninety per cent. not clean in flavor, sixty per cent. open and loose in texture, thirty-three per cent. acid and mealy, twenty-nine per cent. too soft or weak in body, twenty-two per cent. uneven or too pale in color, fifteen per cent. poor finish, mouldy or stained surfaces.

It will be seen that "not clean in flavor" is the chief defect, and is due, no doubt, largely to taints in the milk. Yet quite frequently the flavors appeared to be caused by the use of bad starters and impure water at the factories. There were very few cases where defect in flavor could be described as "food flavors." In the spring a number of lots had a leeky flavor, caused, no doubt, by the cows eating leeks.

Loose and open texture, which is the next greatest defect, appeared to be caused by leaving too much moisture in the curds, either by insufficient cooking, or not stirring the curds sufficiently when the whey is removed, and by salting the curds too soon.

Acid and mealy texture is a very common defect, and is usually due to too much acidity in either the milk or curd, and to the use of too much salt on the curd.

Soft or weak body is a defect very common in the extreme Eastern part of Ontario and some districts in Quebec. Insufficient cooking of the curd, and leaving

an excessive amount of moisture in the curd after the whey is removed, not only gives a soft or weak body, but often injures the color as well.

Quite frequently the color was mottled by mixing in old curd, especially about the time the cows were going out on the grass in the spring, and again in the late fall when they were beginning to get fodder.

INFERIOR CHEESE FROM THE SMALL FACTORIES.

The following figures will give a fairly good idea as to the size of the factories which are turning out inferior cheese. In most cases the number of boxes in each lot represents a week's make of cheese.

6.5% of the lots examined contained over 100 boxes.
93.7% of the lots examined contained under 100 boxes.
83.3% of the lots examined contained under 70 boxes.
43.7% of the lots examined contained under 40 boxes.

Bearing in mind that about 98 per cent. of the total lots examined were second and third grade, it will readily be seen that the great majority of our inferior cheese come from small factories. It does not necessarily follow that fine cheese cannot be made in small factories; but it is true that the best men cannot be secured to operate them. It requires men with decidedly greater ability to manage a large business than to manage a small one, and just as long as we have small and poorly-equipped factories, just so long will there be weak or inferior cheesemakers in them, and one of the solutions for doing away with a great many of our second- and third-grade cheese is larger factories, with strong, capable men to operate them.

Now, the defects in our cheese and butter are not so very serious. We are not making a whole lot of third-grade and cull goods, but, as Canadians, we are making too many second-grade goods.

With the splendid system of instruction at the factories and creameries, the dairy schools, the dairy literature, and information distributed by the different governments, dairy papers and dairy meetings, there is no good reason for ignorance regarding any line of our dairy industry.

What we need is that each one, from the boy who brings up the cows from pasture to the man who puts our cheese and butter on board the steamer for Great Britain, shall each do their work in the very best manner. Will you do it?

STEAMBOAT TRANSPORT OF CHEESE.

Some discussion followed Mr. Barr's address, in the course of which he emphasized the point that in Prince Edward County, where they have many cool-curing rooms, they should be especially careful in shipping if they wish to derive the full benefit of their cool-curing rooms. He saw some cheese that would have been much better if sent in an iced car than on a river boat, where the temperature is uncontrolled. Relevant to this, the opinion was expressed and concurred in, that carrying the cheese in open wagons and leaving them exposed to the sun while on the docks would do them more harm than any temperature they were liable to suffer during transit. Covered wagons and protection from sun on the docks were essential. A. A. Ayer, cheese merchant of Montreal, said he would rather have the river steamer any day than an ordinary box car, but it certainly was not as good as a refrigerated car. He thought if they would put a few fans in the steamer to ensure ventilation it would be all right. J. A. Ruddick, Dairy and Cold-storage Commissioner, subsequently dissented from this view, claiming that something more than ventilation was needed on the steamer in hot weather. The problem of refrigeration on steamers was rather peculiar, and much more difficult than icing cars, because any space fitted up for any special purpose is in disuse when not required for that particular purpose, and steamer space is somewhat expensive. A special car may be detached and need not be hauled about when unemployed. However, he thought, perhaps, satisfactory arrangements could be made to improve conditions on the river boat.

REPORT OF CHIEF DAIRY INSTRUCTOR AND SANITARY INSPECTOR.

THE NEW SYSTEM OF INSTRUCTION.

Following is a synopsis of the report of Mr. G. G. Publow, the efficient Chief of Dairy Instruction and Sanitary Inspection for Eastern Ontario. The change in the system of dairy instruction, by which the functions of dairy instruction and sanitary inspection were combined, and the services of the instructors extended to all factories free of charge, enabled the staff last summer to devote as much time as they found necessary at any particular place to make the required improvements. The number of the instruction staff was reduced from 28 to 24, and the territory, comprising all that east of Toronto, and embracing 975 cheese factories, was divided into 24 districts, with about 40 factories in each. Over each district was placed an instructor, whose duties were to visit each factory, see that it was kept in a clean, sanitary condition, and provided with a pure water supply, to give instructions in the manufacture of cheese, and, where necessary, to visit the farms of any patrons who were delivering milk which was found to be out of condition, and to test milk for adulteration where factory men had good grounds for suspicion that the milk was being tampered with. Of the total of 975 factories regularly visited, 178 received instruction for the first time. One thousand five hundred and one full-day visits were made, and 5,022 call visits, making a total of 6,523, or an average of over 6 visits to each factory. Full-day visits are made only at the