

Dairy.

Creameries for Ontario.

BY PROF. L. B. ARNOLD.

It is but a few years since the prairies of the West were of all places on the continent the most notorious for bad butter. Now the West and Northwest rival the best localities in the East in the excellence of their butter product. The change which has come over the character of Western butter is due to the introduction of creameries—a result common to their introduction. Wherever the co-operative system of butter-making has been adopted similar consequences have followed invariably, though not always in so marked a degree. It is not because as good butter cannot be made in families as in creameries that the average product of the latter so much excels that of the former. It is because the latter are conducted by trained experts, who are provided with the best facilities and most approved apparatus for doing the work, while in families butter-making is generally but one of a thousand household duties to share the attention of the housekeeper, usually with but poor facilities and little or no training.

Butter-making in Ontario now approximates somewhat the former condition of that art in the West. Its general product is heterogeneous in quality, and the average character is too low. There are localities and individuals here and there that have devoted special attention to butter-making, that turn out goods fine enough to grace a royal table. These examples stand out in bold relief as indications of the capacity of the Province for assuming a high standard in the butter-making world. What is wanting is the introduction of creameries. In these there is now a sad deficiency, there being but very few yet introduced. I have seen enough of Ontario to know positively that there is no good reason why it may not reach the highest pinnacle of fame in the production of butter. Grass is nowhere sweeter or more abundant, and nowhere does it retain its freshness for a greater portion of the season, and water is everywhere plenty and good. Nature has done all that is necessary, if dairymen will only do their part as well.

The co-operative system of cheese-making, coupled with an application of the best skill and intelligence and enterprise, has given to Ontario a proud distinction for the excellence of her cheese. No better cheese is made on the American continent than is now annually turned out of the factories of Ontario. The same distinction might as certainly be reached in the production of butter if the same skill and efficiency were applied to that branch of the dairy industry.

To make such an advance, the co-operative system must be applied the same as it is in cheese-making. It can never be attained by the slack and unequal skill which prevails in private dairies. Whenever the creamery system is adopted it will be found that an improvement in quality, and consequently in price, will speedily follow, with no increase of cost in the manufacture. This should be a sufficient inducement to strive for them.

In the States the existence of creameries has proved a great controlling agent in regulating the relative production of butter and cheese. So many factories contain both cheese-making and butter-making apparatus, that they can easily change from cheese-making to butter-making, or the reverse, to such an extent as to prevent a very excessive production in either. Whenever a given quantity of milk will net more turned into butter than it will made into cheese, it is converted into

butter; but if cheese nets the most, it goes into cheese. This easy change from one to the other is often the occasion of larger returns to the dairyman than he could otherwise obtain. The aggregate profits of dairying are thus increased, and the annual returns rendered more certain and even. The dairymen of Canada may as well avail themselves of this advantage as their neighbors in the States, and it would be very gratifying to see them do so. Co-operative butter-making is the necessary agent to effect such a result.

Cream Gathering vs. Whole-Milk.

This important subject, which is bound to revolutionize our dairy system, and which will be a god-send to the producer and consumer alike, is attracting the attention of all our enterprising dairymen, both East and West. Prof. H. E. Alvord, one of our most prominent and reliable dairy writers of the day, has made a thorough investigation of the system of cream gathering, and in an article to the *Country Gentleman* on this all-important subject, says:—

Those who object to the Fairlamb creamery system, say that where the cream is separated on the different farms, with more or less variation in the conditions, it is impossible subsequently to gather and mix the cream, and then make from it a butter of as high grade as where all the milk is received at the factory and controlled by the butter maker from the time of cooling. Hence it is broadly asserted that the cream gathering plan results in butter of at least second grade. There is doubtless some truth in this, theoretically, but the position cannot be sustained upon a practical test under average conditions. A close comparison of this newer system, with the whole-milk method, is very favorable to the former.

If the milk could always be delivered promptly at the factory, in perfect condition, and thenceforward be treated with entire uniformity and the utmost skill, the butter produced might be expected to be a finer article than if the same milk were handled on the Fairlamb plan. But there is no certainty of the milk reaching the factory in such perfect condition, in the case of nine creameries out of ten, where the whole-milk is received. Take an average example, an "all-the-milk" creamery with fifty patrons. The rule is that the milk from fifty scattered farms is handled by more than fifty different persons—and just about as they please—before it reaches the creamery. Regulations there may be, but no enforcement, an inspection of the farms of the patrons by a factory official being exceptional. On the cream-gathering plan there is no miscellaneous hauling and handling of the milk; it remains on the farms; the cream only is hauled (a very small part of the whole bulk), and that always by one or two agents of the factory. The milk is cooled in fifty different places, in charge of as many different persons, but in vessels exactly alike, under strict rules to insure uniform treatment, and—most important—an officer of the creamery visits every farm every day and sees that everything is right. The truth is, opportunities for the carelessness and accidents which injure the quality of butter, are more numerous in the practical operation of the whole-milk creamery system than in the cream-gathering plan.

But if we admit, for the sake of argument, that the butter produced by the older system is likely to be a shade better than that made on the newer plan, there remain other considerations which, in a comparison of the two methods, show the latter to be, in most localities, far more economical and satisfactory than the former. The disposition of the skimmed milk is of the utmost importance. Let it be remembered that cheese factories and cheese-making districts are not under discussion; the question supposed is, in starting creameries in a butter-producing district, where farm dairying has prevailed, is it best to a range for all the milk to go to the factory, or only the cream? If the whole milk goes to the creamery, the skim milk must be either hauled home again or lost from the farm. In the first place, the extra hauling becomes an item of labor so great as to more than offset all possible advantages of handling the milk at the factory. In the second case, few butter dairying districts can afford to sell all the milk from the farms every day in the year, at rates at all usual at butter factories. At present prices of approved fertilizers, the manurial equivalents of 1,000 pounds of skimmed milk, delivered on the farm, cost about \$1.20; so that skimmed milk is worth at least one cent a gallon for use on the compost heap! Its feeding value on any farm where there are young and growing animals, in-

cluding chickens and children, is much greater; close estimates very generally place it at about one cent a quart. The localities are few where skimmed milk will net the producer more than this, used in any other way. Hence, as a rule, the draft upon the fertility of a farm incident to selling the whole milk produced, cannot be afforded; while all the cream produced on the same farm may be sold off for years without perceptible loss of fertility. Another fatal objection to the whole-milk system is the failure to satisfactorily discriminate at the creamery between the butter values of the different lots of milk. Within certain limits, fixed as the standard for purity, all milk is received and paid for as equal. Yet two lots of 100 pounds each, so treated, and which might appear alike by the ordinary factory tests for milk might produce—one, three pounds of butter, the other, five or six pounds. A difference of one pound of butter to 100 pounds of milk, when the lots of milk appear alike, is not uncommon. No such vital defect exists in the cream-gathering system. The richest milk—which at an "all-the-milk factory" would weigh the least—gives, when set in uniform cans, the greatest number of inches of cream, and the owner derives no benefit of having good butter cows. Of course there is some difference in cream, and two or twenty inches of cream measured and skimmed from the cans on one farm, may not have exactly the same butter value as the same quantity taken from like cans on another farm; but there is nothing like the difference in butter value of cream that exists in milk, and practical experience in handling cream from different farms and herds, in quantity, proves that if the milk is uniformly treated the cream is substantially equal, pound for pound, or inch for inch. This is not true in theory, nor is it shown by samples of cream treated experimentally.

Fine theories are not always practicable, however. If one wished to obtain the greatest quantity of butter from the milk of 300 cows, the product of those of different breeds and on different farms should not only be kept separate, but the milk of every cow should be set by itself, and the cream of every cow churned by itself. To obtain the very highest theoretical quality of butter, every milking should be skimmed three times, several hours apart, and these skimmings separately churned. This is reducing good theory to a practicable absurdity, on account of the labor involved. In practical dairying, the labor consideration necessitates stopping short of what may seem perfection, lest it cost more than it comes to. The line must be drawn somewhere. Let it be at this cream-gathering plan of creamery practice and you attain the best combination of equity, economy and good results which has yet been discovered. Other advantages of the Fairlamb system are the cheapness of the factory itself, the simplicity of its management, and the great extent of territory which it is possible to cover in the operations of a creamery of this kind. The hauling is reduced to a minimum, and is done wholly by teams from the factory, which are on the road all day; this difference alone makes this system practicable and advantageous in many localities where the distances between the farms and factory preclude the establishment of a whole-milk creamery.

The large eating capacity of a good dairy cow is proverbial, which will be easily understood if we make a cursory examination of her production. Suppose a cow weighing 900 lbs. yields 6,000 lbs. of milk in nine months. This milk would contain 780 lbs. of dry matter, counting it 87 per cent. water. Here she yields 6 $\frac{2}{3}$ times her own weight in milk, and the dry substance in the milk is twice that in her own body. The cow is the most remarkable food-producer among animals. She produces twice as much food in her milk as does the beef animal of the same weight in its gain in flesh during the same time.

DOES IT PAY?—It always pays to read about what others do, and say, and think, in the same line of work or business. If one does not find direct information specially applicable to his own work, yet the thoughts and methods of others incite new thoughts and plans in the reader's own mind, that lead to profitable results. The reading, thinking man makes his head help his hands. Brains tell everywhere, and in nothing more than in farming, gardening and housekeeping. And the fewer brains one has, or thinks he has, the more anxious should he be to get all the facts and suggestions he can from other people's thinking and experience.