

make a mixture worth \$16, yet can we buy pea meal and bran at same price? We must pay market value, and so we must do for butter-fat, if we expect to hold patrons who furnish rich milk, and especially in those counties near a good butter market. These two great industries, *cheesemaking* and *buttermaking*, are going along side and side. Butter-fat enters largely into composition of both articles. Casein does not, and on account of this, if nothing else, butter-fat will always have a greater demand and, consequently, a higher market value. But another reason: It is the butter-fat that puts the quality into the cheese. Just as the pea meal puts the quality into the mixture before mentioned, so the butter-fat puts the quality *very largely* and richness into the cheese. Take the fat out and what have we left? *Skim cheese*—unmarketable stuff; add butter-fat, and plenty of it, and we have *cream cheese*!—a high-priced article. What makes the difference? Butter-fat! It may be difficult to tell any difference between cheese made from 3 per cent. milk and that made from 4 per cent. milk, yet I am inclined to believe the difference is there nevertheless! But if not, there would be a strong temptation for the man who has 4 per cent. milk to skim out 1 lb. of fat from every 100 lbs. of his milk, making it same quality as his neighbor's, and thus get 20 cents per lb. for it in butter instead of 8 or 10 cents, at most, in cheese. If casein is a fixed quantity in all milk, then it is the fat alone that determines the relative values of different samples. It is the fat in milk that is costly to produce, whether fed in or bred in. If fed in, it would be at cost of rich feed; and if bred in, we almost invariably find that if we breed for quality of milk it is more or less at expense of quantity, so that butter-fat is expensive to produce, and demands its fair value, and I believe that the only way to give full value for each is to divide by the straight Babcock Tester. At the prices I have given, 100 lbs. of 3 per cent. milk would be worth, as compared with 100 lbs. of 4 per cent. milk, as follows: 3 lbs. fat @ 18c. = 54c. + 2 lbs. casein @ 5c. = 10c.; total, 64c. per 100 lbs.; and 4 lbs. fat @ 18c. = 72c. + 2 lbs. casein @ 10c. = 82c.; 82c. per 100 lbs., or in the ratio of 3 to 4 almost. These prices may be too high, but I believe they are in right proportions. In our factory milk varied from as low as 2.4 to over 4 per cent. fat. Our plan of division was to add 1 per cent. to fat readings, and I do think, in all fairness to those furnishing the rich milk, that one per cent. was enough to add to 2.4 per cent. stuff. The City of Toronto standard calls for three per cent. milk, and I think that milk under 2.8 is blue enough for any purpose, and rather too blue. I feel assured that Prof. Dean will still experiment on the line indicated by the ADVOCATE, viz., as to qualities of cheese from different qualities of milk. Producers of rich milk will watch these experiments closely. Until the professors can settle this question I will, for harmony's sake, meet them half way and still add one per cent., while I look for more light on the matter.

ROBT. McCULLOCH,

Secretary of the Edmonton (Ont.) Cheese Co.

With the Travelling Dairy in British Columbia.

BY J. A. RUDDICK, OF THE DAIRY COMMISSIONER'S STAFF.

(Continued from page 479, Dec. 2, 1895.)

There are many fine farms with splendid buildings in Chilliwack district. Most of the farmers are doing something in the line of dairying, and altogether it is the most important dairy district in the Province. The valley suffered heavily by the flood of 1894, but the damage was nothing like what it has been represented to be.

After leaving Chilliwack we had meetings at Abbotsford, Langley, and Pt. Haney, all of which were well attended, and a great deal of interest was shown by those who gathered from far and near to witness the operations of the dairy and listen to the addresses which were given. At Langley steps are being taken towards starting a creamery, and there seemed to be the right kind of men around there to carry out the idea and make a success of it.

This finished our work on the mainland for the time being. On the way to Vancouver Island a visit was made to the new creamery situated on the "Delta," near the town of Ladner, and not far from the mouth of the Fraser River. Here was found a well built and splendidly equipped creamery, turning out about 300 pounds per day of gilt-edge butter, which was put up in one pound prints, and sent fresh every day or so to Victoria and other points, retailing at 35 cents per pound. The manager told me that they could not supply one half the demand, yet creamery butter in tubs from Manitoba and the Territories was not finding a very ready sale, at prices ranging from 20 cents to 25 cents per pound. Why this difference? Simply because the latter was not fresh. The almost universal complaint against Manitoba and the Northwest butter is that it is held too long before being sent out. No doubt the most of it is quite as good as the British Columbia article when first made, but because the people can get one fresh and put up in dainty shape, they are very willing to pay the difference in price which I have quoted. I mention this because some of our Manitoba friends could not understand why they were not receiving more for their shipments when such high prices were quoted.

I have often heard it said that the B. C. market was not a very critical one, and that they would take a poorer article than other markets would. No

doubt they have taken a lot of poor butter in times past—when they could not get better—but give the average British Columbian a choice, and he will pay more in proportion for an article of finest quality than people will in any other part of Canada. He wants good butter, and he wants it bad, and knows as well as anyone else that a great deal of inferior butter has been forced upon him in the past.

The "Travelling Dairy" held forth at the Victoria Exhibition. Prof. Robertson was also present, and delivered a number of pleasing and instructive addresses, which were listened to with great interest by a large number of people. After the exhibition meetings were held at Saanich, Colquitz, and Metchosin, three districts near Victoria. Proceeding north by the E. & N. Railway, the next place we visited was Duncan's, about 30 miles from Victoria, and a flourishing agricultural settlement. An attempt is being made to start a creamery at this point. Nanaimo and Comox were next visited, the latter being one of the oldest and most prosperous farming districts on the Island. There is a good and increasing market at the Union Coal Mines.

Coming back to the mainland, a week was spent at the New Westminster Exhibition, and a meeting held at Cloverdale, a few miles out of Westminster, on the south side of the river.

On our way home we stopped off at Sicamons, and spent a few days in the far-famed Okanagan Valley, holding meetings at Armstrong, Vernon, and Lumby. The climate is dry here, yet the grasses on the ranges are said to be very nutritious, and stock does very well. A great deal of wheat is grown, and we saw some splendid ranches (all farms are called ranches in B. C.).

It is near Vernon that the famous Coldstream Ranch, the property of the Governor-General, is located. I had the pleasure of visiting it at the invitation of their Excellencies, who were there at the time, and I must say that I have never seen a finer sight in the shape of an orchard than the one which I saw at "Coldstream." It is a beautiful place, and His Excellency may well feel proud of it.

Much improvement might be made in the stock of dairy cows in B. C. Among the thoroughbred animals, the Holsteins and Jerseys predominate, and I find a tendency to cross these breeds, with the idea of combining the distinctive qualities of the two breeds in one animal, a course which will not be endorsed, I fancy, by breeders of experience. Many of the cows have too much of the "cayuse," or native blood, in them to make good milkers.

The cows are not as well housed in winter as they should be, and judging from the long hair and shaggy coats which one very often sees, they suffer more from exposure in many cases than cows do in other Provinces, where the winters are much more severe. I look for big improvements in the near future, however, for if the average British Columbia dairyman may not be quite up to date in all his methods, he certainly lacks nothing in the matter of intelligence, and having commenced to think more about his business, the rest will follow in due course. I have been speaking generally, but it is only fair to say that I met many individual dairymen who were making splendid progress. The best butter makers were getting 30 cents per pound for their butter all last summer, and they invariably told me that they could not supply the demand.

A Great Convention.

The Western Ontario Dairymen's Association Convention, to be held in Woodstock on Jan. 7, 8 and 9, should be attended by every dairyman that can possibly arrange to be there. The programme committee have spared no pains to secure speakers who are able to teach the most profitable methods in every department of dairy farming, cheese manufacturing, and cheese marketing. Practical addresses and practical men will be the order of every session. Those who have heard John Gould, of Ohio, need not be told that he is one of the most instructive and entertaining speakers of the day on dairy matters. He will be on the programme upon several occasions during the Convention. Theodore Louis, of Wisconsin, who is known throughout the United States as one of the great authorities on hog raising, will address several sessions on topics of vital interest to hog raisers. Prof. Robertson, Ottawa; Prof. Dean, Guelph; J. A. Ruddick, Dairy School, Kingston, and many other first-class authorities will be present to contribute to the well-arranged and valuable programme. Dairymen who are members of the Association should be there, and those who are not members should also be there and become members, so as to participate in the benefits of the co-operation. A copy of the programme may be obtained from Mr. J. W. Wheaton, Secretary, London.

A World-Wide Butter Competition.

The National Butter and Cheese Makers' Association will hold its fourth annual meeting at Cedar Rapids, Iowa, during the whole of the last week of February, 1896. A working creamery, with all the latest patterns of machinery, will be in operation. There will be liberal prizes given for the best exhibits of butter and cheese. A grand prize—an original design of a buttermaker at work, cast in pure silver, and valued at \$500—will be given for the best package of butter, competition open to the world. Other valuable premiums will be given for high-scoring exhibits, competition open to the State. For further information, address the Secretary, E. J. Burridge, 79 Fifth Ave., Chicago, Ill.

POULTRY.

Feeding for Winter Eggs.

BY R. C. ALLAN.

The article by Mr. Maw, in the ADVOCATE of Dec. 2, '95, on winter eggs, while treating of a very seasonable topic, fails to enter fully into even the meagre details given on the subject. There is a great deal of arrant nonsense paraded in the columns of our papers, much that is simply theory on the part of the writers, or the reiteration of assertions made by some other equally theoretic writer that appeared to the impractical author to be sensible; but when applied to practical work, invariably proved unsuccessful. At the risk of calling down upon my devoted head the derision of my brother poultrymen, I beg leave to assert that more hens, by 50 to 1, fail to lay from want of food rather than from excess of it. Hens must be in good condition (*fat*, if you choose to put it that way) to lay. A thin hen never lays.

The first paragraph in the article above referred to contains some admirable hints to all who keep hens, but the last is, to say the least of it, misleading to the amateur. In the first place, a steady supply of winter eggs cannot be obtained if no other green food is given except the table scraps from an ordinary kitchen, with a raw cabbage or turnip for the hens to jump at. Cut clover hay, all the hens care to eat once every day, is absolutely necessary; it is one of the best persuaders to egg production known. It should be cut very fine ($\frac{1}{4}$ inch); and where there are no especial appliances for preparing the cooked rations of the fowls, may be crammed tightly into a pot, which should then be half filled with water, and boiled. It should scald ten or fifteen minutes. To a pailful of the hay add about two quarts canelle; mix well and feed hot. Let them have all they will eat up clean. You need not be a bit afraid that they will eat too much; it is soon digested, and they will be eager for another meal when it comes.

I have very little patience with the oft repeated assertion that "hens won't lay unless they work all day." I grant that exercise to a certain extent is necessary; so is it for cows. But just fancy Mrs. Jones hanging up a bunch of roots before a fine Jersey cow for her to jump at; there is about as much sense in doing it for the cow as the hen, and about as much good. I have as fine a flock of laying hens as can be found—regular egg-machines, and a turnip would hang up intact till next spring if they had to jump for it. Mangolds are more readily eaten than turnips, and a larger quantity will be devoured. If they are sliced down the center and laid in the feeding trough, the hens will attend to the rest. I feed them, about two hours after the cooked hay in the morning, about four medium roots, being cleaned up by 100 hens. Leave no stale food from one day till another; feed just what is eaten up clean.

In the production of winter eggs, a green bone mill is of inestimable help; it reduces the grain bill one-half and makes the fowls more thrifty, while the increase in the number of eggs would hardly be credited by one who had not used ground green bone and meat as a part of the daily food. Dry ground bone is good to a certain extent, but of course is not a food like the green bone and lean meat. Now, if you measure out a pound to every sixteen hens (the amount usually recommended by many writers), about one-half of the sixteen (the laying half, you will find) will gobble up three-quarters of the pound, and the other eight will get about one-half of what you intended them to have. Unless each hen could be fed by herself, that will invariably happen. Now, let me tell you that all the green bone the hens will eat will not hurt their laying qualities one whit, but will increase the dozens of eggs until you are astonished. This should be fed after dinner, but I prefer the hot hay in the morning followed by roots, because if the hens get what they like best, viz., ground bone and grain, first, they will not eat a sufficiency of the bulky food, consequently the latter should be fed first. Now, as to throwing grain among litter for them to scratch after, will someone tell us what kind of hens will scratch all day for a few handfuls of grain, in say six inches of litter, which is far too much on the floor, for many reasons? A good, lively flock of hens would turn every straw or leaf upside down in half an hour. If you gave them enough to keep them at work all day, you might carry in half a bushel to 50, and I'll engage they will find every kernel in a good deal less than half a day, if they can only eat it all. A covered dish of grain kept in the house and a handful thrown to them every time the eggs are gathered, is, I find, the best way to give them something to do; one quart to 50 hens will be sufficient. This, with the work of picking the roots, will be all the exercise they will need. Cabbage should be cooked the same as the hay and given occasionally for a change. When feeding for night, give all they will eat. Wheat is the best grain for steady use, but on very cold nights I feed whole corn warmed in the oven. They cannot go to roost with crops too full for the long cold nights. If properly fed before, they won't eat as much grain as you fancy; but if you half starve them all day, they will gorge themselves on the grain. I know from many years' experience that hens fed as I have described will give a good account of themselves, even if they do sit huddled in a corner part of the time; they often do that for warmth.