

markets the best way is to put it up in one pound prints wrapped in parchments paper, with the name of the dairy or creamery neatly printed on it. And by having the butter always of a uniformly fine quality the consumer will pay more and always ask for the same brand.

Every dairyman and creamery manager should remember that it is of the utmost importance that their butter be always uniform in quality; and if at any time you have a batch that is a little off, mark such packages and explain about them to your dealer, so that it may be sold on its merits. Never try to pass it off, it will not pay. If your customers get one bad lot it takes some time to regain their confidence, and probably they will start using some other brand. So that it will pay to be honest with them. We must cater to the requirements of the English market if we are ever going to manufacture butter on a large scale and gain for it a world-wide reputation. The problem of a package seems to be pretty well solved by the square box now being used.

The English people like a light colored butter, and comparatively fresh; that is, with not too much salt in it. So let us study these requirements carefully and give them what they will pay the most money for. Then let us send it to them fresh every week. If we sell cheaply one week the quality of our fresh butter will soon command the price it deserves.

Feeding for Milk.

Winter dairying has become a fact in a large portion of Canada, where only a comparatively few years ago very few cows were milked later than about New Year's. At that time cows were bred to freshen in the spring, and fed in winter upon dry timothy hay, straw and other foods that have little value in milk production. Now the most progressive and money-making dairymen have most of their cows freshen in the fall, and feed them in such a way as to obtain from them a heavy and continuous flow of milk. Succulence in the food contains much of the secret of the return, while at the same time attention is given to a proper balancing of the ration. The old style cows often went dry and gained in flesh at the same time, because of a lack in the character of the food for the production of milk. A large proportion of winter buttermakers have ensilage, others feed roots instead. With the ensilage some protein food is fed, such as bran, oil-cake meal, cotton-seed meal, pea meal, and clover hay. The following daily rations recommended by C. P. Goodrich, in the *Prairie Farmer*, may be considered highly satisfactory for 1,000-pound cows giving milk:

1. Thirty pounds corn ensilage (well eared), five pounds clover hay, five pounds dry corn fodder, what little oat straw they will eat (perhaps two pounds), five pounds wheat bran, and five pounds gluten feed. Gluten feed is the corn after the starch or glucose has been taken out at the factories, and is high in protein.
2. Here is another good ration: Twenty-five pounds corn ensilage, five pounds corn stover, five pounds clover hay, five pounds pea hay, and ten pounds wheat bran.
3. Here is one without ensilage: Sixteen pounds grass hay, two pounds straw, twenty pounds roots (beets and carrots), eight pounds wheat bran, and two pounds cotton-seed meal.
4. Here is another without either ensilage or roots: Twelve pounds mixed hay, eleven pounds corn stover, six pounds wheat bran, two pounds corn and cob meal, and two pounds cotton-seed meal.

Every one of these rations are well balanced; that is, they contain about twenty-four pounds organic matter, from two and a quarter to two and a half pounds digestible protein, and from twelve and a half to thirteen pounds digestible carbohydrates and two-thirds pound fat. With a ration like one of these, if the quality of the foods is good and fed to good cows that have otherwise good care, they will do well in producing milk. Of the coarse fodder, they should have all they want, there being no need of weighing it. The grain ration can be guessed at near enough without weighing every feed. Weigh a measureful and find out how much that weighs. Cows should have as great a variety of food each day as possible, and should be fed with perfect regularity. All the cows in the herd should not have the same proportions in the different feeds. Some need more of the fattening food, like corn meal, to keep them up, if they are inclined to run all to milk, and others need less of it if they are inclined to get fat. Milk cows should never be made very fat.

Milk-Fat and Cheese Yield.

Bulletin No. 110, from the N. Y. Agricultural Experiment Station (Geneva), discusses the relation of milk-fat to yield of cheese and the consequent value of milk-fat as a basis in paying for milk for cheesemaking. The discussion is based upon results secured by making analysis of the milk of 50 herds of cows, whose milk was taken to a cheese factory. The work covered an entire cheesemaking season of six months, from May to October inclusive.

It is shown that in general the cheese yield is somewhat greater for a pound of fat in poor milk than in rich milk. For example, comparing two milks containing respectively 3 and 4 per cent. of fat, the former makes 2.85 pounds of cheese for each pound of milk-fat, while the latter makes 0.25

lb. less or 2.60 pounds of cheese for one pound of fat. It is shown that this difference in favor of cheese yield for fat in poor milk is only an apparent one, because this difference of 0.25 pound is made up of casein and water, which is really not as valuable as separator skim-milk cheese, and which has a market value not to exceed 2 cents a pound.

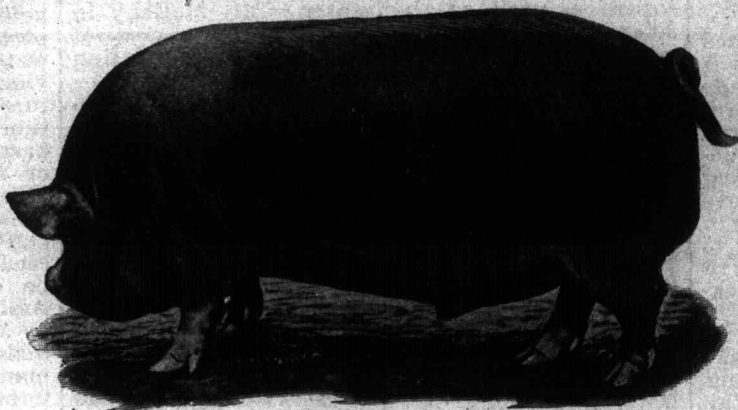
The constituents in 100 pounds of cheese made from the richer milks are worth more in the market than are the constituents in 100 pounds of cheese made from the poorer milk. Milk rich in fat can be made to yield cheese of the same composition as milk poorer in fat in one of two ways: (1st) By adding skim milk to, or (2nd) removing fat from, the richer milk; then the cheese yield for a pound of fat becomes the same. The difference in the cheese yield of milk-fat in the case of poor milk over richer milk is a skim-milk difference, and the extra yield of cheese for fat is the poorest kind of skim-milk cheese.

It is shown that paying for milk according to weight of milk furnished is exceedingly unfair to the producer of richer milk. It is shown that the cheese yield by itself does not constitute a fair basis for payment, because it gives poor milk an undue advantage. The bulletin states that a critical comparison of all methods of paying for milk, suggested or in use, leads most emphatically to the conclusion that milk-fat affords the fairest practicable basis to use in paying for milk for cheesemaking.

In conclusion, it is pointed out that where the milk-fat basis is used there is no tendency to adulterate and defraud, while there is every encouragement to produce milk of better quality.

A Model Berkshire.

The famous boar "First Prize," herewith illustrated, was bred by Thos. Teasdale, of Concord, a leading Berkshire breeder of Canada, and recently purchased by the present owner, Wm. McAllister, Varna, Ont. He was an easy winner at Toronto and London, in the under-a-year class; also won six firsts at the best local shows of Huron county. He is now 14 months old, and is a typical Berkshire in every respect, smooth and even, with great length of body, a grand back, and thickly fleshed well-let-



A MODEL BERKSHIRE, "FIRST PRIZE"

down hams. He stands straight and squarely on strong-boned legs. His head is also of beautiful mold, while for character, quality, and finish he would be hard to surpass. He was sired by the famous stock boar, Baron Lee 4th-3444, bred by N. H. Gentry, Sedalia, Mo., U. S.; dam, Lady-2872, by Royal Crown.

Points in Dairy Practice from an Eastern Ontario Farmers' Institute Tour.

BY PROF. H. H. DEAN, FOR FARMER'S ADVOCATE.

The delegates in Ontario, Division No. 2, for December, 1896, were the writer and Capt. Jas. Sheppard, of Queenston. The places were in the counties bordering the St. Lawrence River. The topics chiefly discussed were Dairying, Fruit, and Good Roads. The attendance and interest were good, except in Lennox and Frontenac. The special feature of the farming in this section is the production of milk for cheese factories in the summer and for creameries in the winter. The County of Leeds is specially noted for its fine quality of cheese and for the large number of winter creameries which have been established. It is a question, however, if these winter creameries are not being located too near each other.

At Lansdowne Station the farmers have built a fine creamery of brick, metal roof, and furnished it with all the latest modern machinery. Its size is 30 x 50. The make-room is 30 x 30, including a small office. The boiler room, refrigerator and ice-house occupy the remainder of the space. The walls are double, with air space between, and are lined with matched lumber. The whole is neatly painted and finished. The cost of the building was \$1,300. The machinery, including two separators, cost about \$2,000, making a total cost of \$3,300. They were receiving about 40,000 pounds of milk each week. Separating is done three times per week, and churning three days each week. Milk is warmed in receiving vat to about 64°, and then lifted and heated to 84° by means of an ejector. The skim milk and buttermilk are lifted with ejectors to the tank overhead. The cream is cooled to 65° for ripening, and a "starter" of buttermilk is added when it is needed. In the evening the cream is

cooled to about 59° or 60°, at which temperature it remains over night. Next morning it is churned in about one hour. Salt at the rate of one-half ounce per pound of butter is added to the butter in the churn. Half of the salt is put on and the churn is revolved. The remainder of the salt is then added, and the churn revolved until salt and butter are thoroughly mixed. The butter is then set in tubs in the refrigerator for one to two hours, when it is brought out, worked on a Mason worker, and either put up in pound prints or boxes for market. Most of the creameries in the East are using the "Rutherford box," which seems well adapted for the export trade. It is light, lined with paraffine wax, the lid fastens with three screws and a special arrangement with two pins on one side. If they were made to hold exactly 56 pounds of butter when full it would be an improvement. Some makers put in 56 pounds, and leave a space of one-half to three-quarters of an inch on top. Others are filling the box, and put in 59 to 60 pounds. Uniformity of weight would be an improvement.

One point is very important. In packing butter in tubs or boxes it should be packed in *firmly*, so that when "stripped" the sides of the butter present a close, solid appearance. A buyer said to me recently that some of the butter shipped to him looked as if it had been "tramped in by a hen."

Two and one-half miles from Lansdowne creamery another new creamery was built last fall. Between these are two cheese factories, and I was told that eight or ten cheese factories are within a short distance of these creameries. Too many small factories make the expense of manufacturing too high. Fewer factories would lessen this expense, and consequently increase the profits of the dairy farmer.

The Tilley Creamery is built altogether of wood. The walls are built of two thicknesses of matched lumber, with tar paper between. The size is 36 x 48, and it cost \$1,000. The machinery cost \$1,800, including two separators, making a total cost of about \$2,800. Both these creameries are heated with steam by means of steam pipes passing around the walls. The Tilley is heated from the exhaust steam of the engine. They also have an ingenious device for weighing the skim milk to the patrons.

It is the invention of a local man—Mr. Webster. The receiving vat is elevated and so are the separators. The milk travels by means of gravitation until the cream is delivered in the cream vat. The skim milk and buttermilk are elevated by means of a rotary pump, which appears to give entire satisfaction. This creamery is receiving 30,000 to 40,000 pounds of milk weekly, so readers will understand that a large quantity of milk is produced in that section. The cost of manufacturing is 3 cents per pound in both creameries—patrons to deliver the milk and take away by-products. At the Tilley creamery the company pays the maker 2 cents per pound of butter for making, he to furnish supplies.

Mallorytown—8 miles distant—has two cheese factories and a winter creamery—all within 200 yards of each other. Here, too, a large quantity of milk is made up each week. The people of this part of the country are thoroughly convinced of the importance of winter buttermaking in conjunction with the cheese business. This creamery was running last winter, so the people have had an opportunity to test its value. The price this season is not so encouraging, as the butter is selling for about 18c. After deducting 3c. per lb. for manufacturing, it leaves but 15c. for food and labor, but at this price the Eastern dairyman considers that it pays. The use of corn silage and the low price of coarse grains enables him to produce a pound of butter cheaply. He finds a better market for his fodder and grain at the warehouse of Cow, Butter & Co. than at the grain market of towns and cities. The first named firm always pays cash and gives a liberal rebate in the form of fertilizing matter for the farm and valuable by-products with which to produce ham, bacon, and calves for the dairy. We commend his wisdom in dealing with this firm.

Dairy Cow Feeding.—D. M. McPherson, M.P.P., of Lancaster, in the course of an able address in his native town on the "Feed and Care of Dairy Cattle," spoke of the following points of interest to dairymen: There is a marked improvement at present in the winter management and feeding of dairy cows compared with a few years ago. Formerly they were fed chiefly on straw and came out poorer in spring than when they entered the stable; now many cows are in better condition in the spring than in the previous fall. Formerly the cows gave about 2,500 lbs. of milk per season, which meant a loss to the dairymen; now their cows average 5,000 lbs. of milk, which means a profit. This is the result of better feed and better care. For winter feeding he recommended corn silage, clover hay, linseed, cottonseed meal, bran, and peas. Any one of the following rations he considers good:

60 lbs. corn silage.	30 lbs. corn silage.	25 lbs. hay.
5 " hay.	15 " hay.	3 " bran.
8 " bran and shorts.	8 " bran and shorts.	3 " meal.

In summer he recommends plenty of grass, and next to grass, green tares. Sweet corn and bran are also good. He would feed 3 to 5 lbs. of bran on short pasture. Never allow milk to fail any more than possible. Deficiency in the milk pail is usually caused by deficiency in food. Under the head of "Care," observe: Gentleness and kindness; allow no worrying or dogging. Water and feed regularly