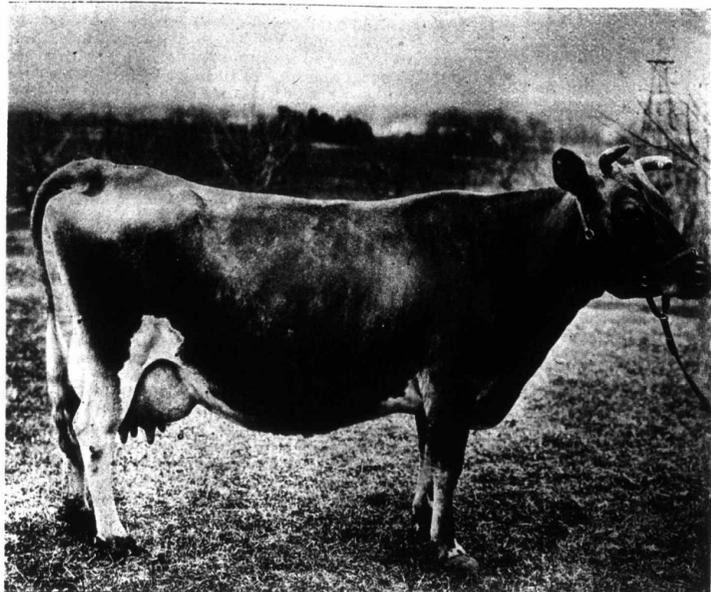


of private or co-operative concerns, can do a great deal through the medium of better curing-rooms and more sanitary conditions surrounding the factories; while the transportation companies have their share of responsibility in providing safer carriage and better handling, so as to insure less damage to quality and packages in transit. The best thing about it is that all this improvement can be effected without adding to the cost of production



GIPSY OF SPRUCE GROVE 69241.

First-prize Jersey cow and sweepstakes female, Provincial Fair, Halifax, N. S., 1900.

PROPERTY OF J. RUFUS STARR, STARR'S POINT, N. S.

in the slightest degree. Indeed, the experiments which have been conducted under the direction of the Commissioner of Agriculture during the past two years show that it is a matter of economy to control the temperature of a curing-room so that it does not go higher than 65 deg. In a series of experiments conducted by the writer at Kingston, in 1897 and 1898, it was found that the shrinkage was 1.34 per cent. less in three weeks when the temperature was partially controlled, as compared with no control of temperature.

Improvement in quality will surely result in greater consumption, which admits of increased production at remunerative prices.

Canadian cheesemakers should not rest content with having beaten all competitors in the import trade of Great Britain, but keep in mind the fact that the best English and Scotch Cheddar still sells 3 cts. to 4 cts. higher than Canadian does.

**BUTTER.**

The United Kingdom imported during the year ending August 25th, 1900, the enormous quantity of 386,020,554 lbs. of butter. Our share of that immense trade, for the same period, amounted only to 24,681,440 lbs. Denmark, Australia, France, and Holland, in the order named, all furnished more than we did. Sweden, Russia and New Zealand follow with large amounts. While our exports are small, compared with the total imports of Great Britain, it is very satisfactory to note that they are five times as great as they were when our excellent system of cold storage was inaugurated. Our exports to Japan and the British West Indies are increasing, but we still have to take a second place to the United States in these markets. Although the shipments of Canadian butter to the West Indies have been trebled in as many years, the total amount shipped in 1899 was about 200,000 lbs., while the United States sent over 2,000,000 lbs.

There is no reason why our exports of butter should not continue to increase rapidly, as long as we make a good article and find the production of it profitable. The forces which have helped us so far, viz., the spread of knowledge concerning the science and art of buttermaking, better control of temperature at the creameries, and safer transportation by rail and sea, are still with us, and capable of being strengthened at many points.

Another element in our favor is the deepening of the Imperial feeling which has lately manifested itself throughout the Empire. When trading with the motherland, in competition with foreign countries, it means more to be able to use the word Canadian than it formerly did. This would not be a good foundation on which to build all our hopes for the future of the butter trade, for quality will always be of prime consideration, but it is of decided advantage to have the preference when the quality of the goods are equal.

The three great points in favor of the cream separator are: (1) that it enables more butter-fat to be abstracted from the milk; (2) that it enables a great saving to be effected in space; (3) that it enables the skim milk to be used for calf-feeding and other purposes while quite fresh.

**The Value of a Good Udder.**

Just as there are cows and cows, so also there are udders and udders. Some very good-looking cows are furnished with but poor udders, and, as an old dairyman of our acquaintance is in the habit of putting it, "It is better to have a scraggy-looking cow any day with a good udder than a grand-looking beast with a miserable bag."

No matter how good-looking a dairy cow may be, except she has a well-developed udder, with its accompanying network of mammary glands wherewith to secrete the milk which she is to produce, she cannot be expected to excel as a pail-filler. As a rule, heavy milkers are seldom the best looking cows, because, though good-looking animals capable of creditably acquitting themselves at the pail are sometimes met with, it is the general invariable rule to find cows which are good at the pail thin in the flesh, narrow across the shoulders, slack over the loins, and in other ways deficient in shape from a butcher's point of view. The ideal udder is the one which goes well developed both fore and aft—one that is carried high up towards the escutcheon and at the same time goes a long way up under the belly. In addition to this, the udder must be deep and broad—the deeper and squarer the better. Its four teats

should be placed as nearly as possible at equal distances apart. Cows possessing udders of this description may generally be counted on to prove good milkers, just as other cows possessing small, round-shaped udders, with teats so close together that they almost touch one another at the points, may invariably be put down as poor pail-fillers, no matter how fine their appearance may be, or how good-looking in other respects.

**Holding Back Milk.**

COWS ARE NERVOUS AND MUST BE CAREFULLY HANDLED.

According to Professor Stewart, the following is the explanation why cows sometimes hold up or keep back their milk. The production of milk is due to a nervous action by which the glandular substance of the udder is broken down into milk whenever the cow is influenced by sufficient excitement of the right kind. It depends upon the structure and function of the udder just as much as the sections of other glands do, which we know are wholly subject to a set of nerves controlling this distinct function. The udder is not a mere vessel for holding milk that is supposed to be secreted continually and gathers in the udder, as one may suppose a constant dripping of any fluid would fill any other receptacle. On the contrary, it is a gland, made up of cellular substance, which grows by separation (from the blood) of the matter required. When it has attained maturity, or when the necessary nervous action occurs, it breaks down into a special product—milk.

Several experiments have been made with the udders of cows in milking condition that have been slaughtered, and an examination is recorded of the udder of a cow accidentally killed on the railroad when going home to be milked, when she would have given the usual ten quarts. The microscope showed the minute lobules of the tissue swollen and distended, but the udder contained practically no milk, except a very small quantity that drained from the divided tissue when cut across. Let us consider what happens when we sit down to milk a cow. The milker gently rubs the udder and gently handles the teats, and this excites the maternal instinct. There is what is called an erectile action of the muscles of the milk organs. The previously soft and loose condition of the teats change to rigidity, and in a very short time the milk flows and continues until the glandular tissue is exhausted, when the udder, previously hard and tense, becomes soft and loose. We perceive that this function of the cow is

wholly nervous in its action, as indeed every other function of the animal is, and if the due nervous excitement is absent there is no functional action. It is wholly due to the right influence on the nerves that the milk is produced and flows from every ultimate lobule of the udder down through all the ducts, small and great, to the teat. Then, if all goes well, and the cow is in her natural, easily excited, nervous condition, as soon as the milker begins to touch the teats the cow lets down the milk—that is, she does not exert herself to oppose the action of the nerves of the mammary glands. But let the milker be rough or ill-use the cow, or let the cow from any cause be stupid and willful, and this necessary motherly influence on the nerves be prevented in any way, and there is no milk. The udder may remain as tense and full apparently as usual, but not a drop of milk can be drawn until the current of the cow's mind is turned successfully to maternal desire.

**A Preventive for Milk Fever.**

Milk fever is a source of heavy loss in good dairy herds; in fact, it may be taken as a rule that it is only the good cows that take this disease. It is not surprising, then, that our most enthusiastic dairymen pronounce milk fever the greatest scourge to dairying. Mr. Geo. Rice, of Oxford Co., Ont., whose herd has become famous from the high public records made by his Holsteins, has had several cows "down" with it, some of which recovered and others were lost. Mr. Rice, being a student and keen observer, made a study of the trouble, and after having found carbolic acid good to prevent abortion, and also to hasten the complete delivery of a retained afterbirth, gave it a trial for the prevention of milk fever, and found it to be a real success. Mr. Rice agrees with many scientists in attributing milk fever to a germ, and his treatment is to destroy the germ and thus prevent its possibility of damage. He gives the following description of his treatment:

"All my cows are heavy milkers, and all are treated about as follows: I aim to have them dry six to seven weeks before calving, fed well at all times and in good condition, and feed fairly liberally up to a week of calving, in order to have the cow in good 'heart.' About a week before calving (as indicated by her udder and other signs), I give 1 1/2 lbs. salts, 1 oz. saltpetre, 1 oz. ginger (large spoonful), and 1 cup of black molasses, and I give about the same dose day before the cow calves, but if I strike her right and have given a dose soon before calving, I give no salts after calving. I used to, but have quit it."

"I have treated the cows this way hitherto, still it did not prevent milk fever. Now, in addition, if in summer, the cow is kept in a shady and short pasture; if in winter, fed some ensilage, straw or similar light feed; and, in addition, no dry meal or bran is fed a week before calving, but two or three quarts of bran scalded, to which I add 25 drops of carbolic acid put in a cup of water and thoroughly mixed in the bran mash, adding a little salt. Give the carbolic acid for three days (twice a day), then drop it until very near calving, and give same dose same way with more salt, also spoonful of saltpetre in bran mash, continuing for a couple of days after calving."

"If a cow's bowels move 12 hours after calving, and continue to do so, then you may know the cow is all right. If the cow calves inside, it is well to sprinkle a disinfectant, carbolic acid, creolin, or any similar preparation, 1 to 50 or 100 of water, around the pen. Most of the troubles that dairymen have are caused by 'germs,' and where cows are kept year after year, these 'germs' multiply, and successful dairymen of the future must use more disinfectants. I think if we work on this tack, we shall be more successful in preventing milk fever, abortion, etc."



LADY OTTAWA AND HOVER-A-BLINK.

Third-prize Ayrshire cow at Toronto and second at Ottawa, and first-prize yearling bull at Toronto and Ottawa, 1900.

OWNED BY WM. STEWART & SON, MENIE, ONT.

A press dispatch from Milwaukee states that a movement is on foot to consolidate all the creameries in the North-western States, for which Chicago is the market, for the reason that the past season has not been a paying one.