

as against 1,953 at Liverpool for same period. Frozen meat is arriving in considerable quantities at most of the distributive ports, and has, in sympathy with live stock markets, risen slightly in value.

I had an opportunity of seeing the Hindlip and Rowfant purchases of Messrs. T. Nelson & Son, as they appeared on board the "Oxenholme." Judging from the contented way in which they were munching the cut grass, I should say they looked as comfortable as if in their own stalls at home. Mr. Hope has naturally been very solicitous as to the welfare of these splendid animals, and his efforts to secure all that can make their journey as smooth as possible have been largely aided by the practical experience of Mr. Geo. Roddick, managing owner of the "Oxenholme." The Hindlip herd, from which the flower of the flock was picked by Mr. Hope, was gathered together at an immense cost, the choicest animals of the highest Bates blood from the most eminent breeders in the Kingdom being found in it. In spite of munificent offers to tempt a sale the female offspring have, through years of patient breeding, all been retained, and the beautiful young stock now at Hindlip prove the soundness of the system pursued, and the wisdom of the policy of an unwavering refusal to allow any of the best females to be picked out. It is to be hoped the Messrs. Nelson will reap a rich reward for their enterprise in securing such magnificent specimens of the Shorthorn breed as Duchess 124th and Duchess of Hindlip.

The "Oxenholme" had also on board a very fine selection of young Herefords, bought for Mr. Jas. Kay, Ont., by Mr. Vaughan. The "bonnie Whitefaces" were in nice healthy condition, and looked in every way remarkably well. The influence produced upon our Dominion herds by such judicious importations is already beginning to be appreciated. At no time has the cattle from Canada been so well represented as during this present season, their fine condition being all that a butcher could desire. We must maintain this, and to do so, we must get the best that money can buy.

SHORTHORN TRANSACTIONS.

The issue of Thornton's circular of Shorthorn transactions for the quarter ending March 31 is matter of great interest, considering the low prices made for choice strains lately. Besides the Birmingham Shorthorn show and sale (at which 154 females realized an average of £30 os. 8d., and '02 bulls of £35 12s. 6d.), there were nine other sales during the quarter. The results of those sales were as follows:—

Herd.	No. sold.	Average Price.
Mr. J. C. Toppins, Skelton, Penrith..	58	£32 3 5
Mr. W. Duthie, Methlic, Aberdeen-shire.....	33	31 8 5
Messrs. J. Hill and E. H. Moss, Congleton.....	35	21 9 0
Lord Polworth, Mertoun, St. Bos-well's, N.B. (bulls).....	20	35 18 2
Mr. T. G. Dunn, Keyingham.....	38	15 13 11
Captain Moir, Colley, Reigate.....	55	22 13 5
Captain D. H. Mytton, Welshpool... 49	18	4 11
Mr. J. Pressland, Harlestone, North-ampton.....	38	17 8 0
Mr. W. T. Talbot Crosbie, Ardferri-Abbey, co. Kerry (bulls).....	13	37 1 6

THE CANADIAN BREEDER AND AGRICULTURAL REVIEW circulates through the entire Dominion, and has a large and increasing circulation in the United States and Great Britain.

THE CENTRIFUGAL SEPARATOR.

The subject of Mr. James Long's paper at the Cheshire Dairy Conference was, "Is the centrifugal separator adapted to the requirements of the British dairy farmer?" He said:—

"It has been stated, and by gentlemen of some experience, that the separator is not suitable to the requirements of the farmer, because his workmen are deficient in the necessary skill which its management requires, and because in order to pay its way it is necessary to work it so many hours a day, and consequently to be a producer of a huge quantity of milk.

"It is my purpose in these remarks to show that all these conclusions are erroneous; that the separator is quite as suitable to the farmer as the factory-man or the milk dealer; that he can manipulate his milk with less trouble and expense by its means; and that, in the manufacture of butter, he will obtain a percentage of increase which will make such a difference to the receipts upon an ordinary sized dairy farm in the course of the year as will almost, if not quite, pay for the whole of the labor entailed in the process of butter-making.

"Now, let us compare the three recognized systems of obtaining butter from milk. By the ordinary method of setting milk in shallow pans it is necessary, when the weather will permit, to let the milk remain so long that, except in the coldest weather, it is spoiled in flavor and unfit for sale to the public. In any case, and however closely it may have been creamed, a proportion of fat is taken away with it, which depreciates the butter return, as compared with the separator, by at least 10 per cent. In summer this loss of fat is infinitely more, as in consequence of the high temperature the milk is often, for from two to three months, given to the pigs before the period of its second creaming has arrived. This loss the farmer does not notice so keenly as he would, for in consequence of the cows being upon the pasture, their yield is generally at its highest point. The loss, then, may be summed up thus—at least 1d. per gallon upon the skim-milk, and ten per cent. upon the butter yield. With regard to the value of the butter, I believe there is little or no difference, this depending more upon the manner in which the cream is ripened than the skill of the butter-maker. It has been urged that in consequence of the quantity of cream taken by the separator there is a depreciation in the quality of the skim-milk, and consequently in its value; but I would point out that the butter-milk is almost as valuable as the skim-milk when it is obtained in a sweet state, whether it be for sale, for conversion into cheese, or for feeding to stock.

"It may be argued that there is no necessity to skim thin cream by the separator. I can only answer this argument by stating that I have myself proved that a greater percentage of butter is obtained by this method of working, and that the Danes are undoubtedly right in their system of preferring, for butter-making, quantity of cream to quality. Any butter-maker doubting this fact has only to make an experiment for himself, if he is fortunate in the possession of a separator. I either of the cold-setting systems of raising cream is observed, the arguments are not so strong as against the open-pan system, for a greater quantity of butter is obtained—by the Swart system for example; whereas the skim-milk is at almost all seasons of the year perfectly sweet and saleable. There is, however, one more argument which applies to all ordinary skimming systems. A milk-room or dairy-apartment is required, which must be fitted up either with milk vats and a cold-water system, or furnished

with a large number of milk pans, and the usual dairy appliances. These may not cost so much as the separator, but the first cost of a dairy plant in use upon a good butter-making farm would go very far indeed in the purchase of the small Danish or the Laval separator.

"With regard to the time occupied in the work, assuming that in a small dairy of 10 cows 20 gallons of milk are produced daily and I consider that a separator can be used with advantage upon a farm so small as this—one hour would be required each day in the working; or, if it were more convenient to the farmer, he could churn the whole of the four milkings at one time, and thus separate every other day after a morning's milking, having already skimmed the three previous milkings, and passing the skim-milk through the machine. As the churning in this case, just as if the ordinary system were adopted, would probably be only twice a week, the comparison of labor entailed must be between the working of the machine and the time occupied by a pony, as against the time occupied by the dairy-maid in the ordinary process of skimming and in manipulating the milk, which is well known to every one.

"In churning milk, a system still adopted in a part of the north of Ireland and in some parts of Lancashire, and which is claimed to produce more butter than the cream-setting system, there are some points to be considered. Hitherto some of the advocates of this system have urged that they obtain a large quantity of sweet butter-milk, which is equal to sweet skim-milk, and very saleable, and that they obtain a maximum quality of butter; whereas the opponents of churning milk declare that the labor in churning is very great and constant, and that the extra cost it entails is the cause of a smaller pecuniary result than is obtained by the common system. In the first place I have proved by experiment that it is almost impossible to churn whole milk with complete success; that, in other words, the milk must be soured, as it is in Ireland, to obtain a successful result. This being the case, the greatest argument in favor of the system is entirely disposed of, for the milk is spoiled for use in any form but that of consumption by animals.

"Some time ago some questions were put to me by an Irish landowner who had experimented by churning milk, and had found that he obtained a larger quantity of butter than by churning cream. I gave an opinion as to the system in general, but I also made several experiments myself, with the following results:—In one case 43 lbs. of Jersey milk were churned sweet at 60° Fahr., bringing 1 lb. 5 oz. of butter in one hour and 50 minutes. A portion of the butter-milk was set, and at the end of 24 hours it threw what looked like substantial cream. The butter itself, which came in very small grains, was most difficult to make up, and I have found this to be the case with all butter made from whole milk, also that it was almost tasteless, the slight flavor it possessed being rather like animal fat than butter. In the next case, 33 lbs. of whole milk were churned. This had been soured by the addition of a small quantity of sour butter-milk, and by standing 36 hours. The temperature was 66° Fahr., the temperature usually recommended by those who churn whole milk, and in the churn it was almost a thick curd. In 76 minutes the butter came, the temperature being well maintained. It was well washed, but difficult to make up, and only yielded 1 lb. 6 oz. of butter. It will be observed that in this case more butter was yielded from a third less milk, and this is one of the advantages of souring. In the next instance the same quantity of milk was churned in a slightly sour state, and on this occasion 11½ oz. only were obtain-