

circumstances which spoilt butter-making in this country, and in order to do that he must allude very briefly to the composition of milk. No more serious mistake could be made than to withhold milk from young animals. Cream consisted of a certain proportion of water and fatty matters, and a small proportion of casein. The less casein there was in cream the better it was for butter-making. If by any means they could separate the fatty matter from the curd matter they would get excellent butter. It was the curd matter which caused all the difficulty in butter-making; and it was from that reason that we believed dairy farmers would never have first quality butter from whole milk—not the same quality as that which they obtained from cream. Like everything else, the composition of cream varied. Nobody could feel any astonishment at the fact that when cows were fed with turnips, swedes, and mangolds, there was a more or less disagreeable flavour in the butter made from the cream produced from the milk of those cows. The best flavoured butter was made, he believed, from pasture which had the general reputation of being poor pasture—not rich pasture. He wished them to understand what he meant by poor and rich pasture. He simply meant by poor, pasture with scant herbage on which cattle could be kept, such as uphill pastures. By rich pastures, he meant pastures which produced a large bulk of grass, but not composed of different herbs. The more mixed their herbage was, generally speaking, the smaller the produce, but the richer the quality of the cream the richer it was in butter, and the finer was the butter in flavour. It had been said, with a considerable amount of truth, that by over-manuring pasture land they reduced the fine quality of the butter made from such pasture. He believed the finest quality of butter was produce from pasture which contained a great variety of herbs, some of which might be regarded as weeds. Could ordinary pasture produce first quality butter? His answer was, decidedly, if they took care to prevent the cream getting sour. That was the great hindrance in making first quality butter. Many dairy farmers unconsciously allowed cream to get somewhat sour before making butter. They should churn cream as sweet as possible. That was an extremely simple matter; and he felt almost ashamed to speak of simple matters in the presence of so many experienced persons; but he found that simple things were difficult to learn. It was a peculiar tendency of the human mind to aim always at big things and to neglect little things on which so much of their daily comfort depends. It seemed a small matter to prevent cream getting sour; but if they considered the enjoyment they had in tasting first-quality butter as against the feeling experienced in having to eat rancid and ill-flavoured butter he did not think it would be regarded as quite so small a matter. How were they to prevent cream getting sour? In the first place they should carefully look after all the people they employed in and about their dairies, and see that the people who milked the cows had thoroughly clean hands. In the second place, they should see that the cows were perfectly stripped, or they would leave the germs of rancidity in the milk. Then they should cool the milk as rapidly as possible to about 55 deg. He was an advocate for the use of deep vessels for getting cream by placing them in water. For ordinary purposes pump water answered well. Twelve hours would be found quite sufficient to get by far the largest proportion of cream that the milk would yield. That should be churned at once. Rancidity would be prevented by churning as early as possible. In churning they should not be into great a hurry, but should turn steadily at about 40 or 45 per minute. As soon as the noise (they knew what he meant) came, they should stop at once, and deal with the butter kernels. Then they should churn it again with cold water, temperature about 57 deg. to 60 deg. He could not help thinking it would be a good plan

to place at once a little salt into the churn, because it would distribute itself evenly amongst the butter. He confessed he would not push the washing process too far. If they had really good sweet cream, he recommended them not to wash the butter. After the process they should clean the churn with boiling hot water. Everything in butter-making depended upon cleanliness—scrupulous cleanliness—the use of plenty of hot water, or steam if they had it, followed by cold water. At the close of his remarks, Dr. Voelcker was enthusiastically applauded.

Feeding and Shipping Canadian Stock.

On this point Mr. E. C. Morgan, who was examined at Toronto in June, 1881, says:—

I am a shipper of cattle. I have been engaged in that business about three years. I buy cattle from farmers and on the markets to supply the British demand. For that market I would recommend farmers to produce nothing but the Durham. There are some differences in the quality and value of different families of this breed. We prefer the fine-boned heavy-fleshed animal to the heavy boned animal. I think the market in Britain for Canadian cattle will increase as soon as the industries of Great Britain get going again. The English consumption of our cattle is now 25 or 30 per cent, less than it was two or three years ago. At this time of the year we cannot obtain a supply sufficient for the British market, and we shall not be able to do so until the winter. That is a misfortune to this country, and I would recommend to farmers to have a good supply of cattle all the year round. It is a great mistake for the farmers to have their cattle all come at the same time, because it not only gluts the English market at one period, but prevents them from keeping up a regular supply.

Four-year old steers are the best to ship, but a great many good cattle are shipped from three years old upwards. No cattle weighing less than 1,300 lbs. should be shipped; the best weights for the English markets are from 1,300 to 1,600 lbs. We have sent fine animals weighing as much as 1,800 or 2,000 lbs., but they are not wanted by the butchers so much as those I have mentioned.

The most profitable period for shipment is during the months of May and June. One cross on our native stock, provided the sire is a thoroughbred animal, will produce a very good grade. The higher the breed of the bull, the greater will be its impressiveness on the calf, and consequently the better will be the beast produced. I don't think it is profitable to ship cattle which have been fed on grass. The grass just puffs them up, and makes them look very nice when they leave here, but they can't stand the journey; they must have grain. The difference in the shrinkage between grass-fed and grain-fed animals is 25 per cent.

SHEEP.—I have shipped some sheep to the old country. The weight preferred there is 150 lbs. live weight; that will make the carcase from 70 to 75 lbs. About eighteen months to two years is the proper age for shipment. In England they prefer the black-faced sheep. I would give two cents a pound more for a good cargo of good black-faced sheep than for other kinds. The Southdown, Shropshire, and Oxford Downs are the best. There is a penny to twopence a pound difference between the value of wethers and ewes in England; that is equal to a cent and a half a pound, here, liveweight. There is a difference of two cents a pound in the price paid here for wethers over that paid for common ewes. You can ship nothing better to England than a good Southdown or Shropshire or Oxford Down wether. The English butchers, when they kill a Down sheep, leave the skin on the legs, so as to convince their customers that they are selling them Down mutton. It