

of lactometers. With these remarks on milk-testing I will conclude this lecture, and thank you for your kind attention. (Cheers.)

Mr. Beale Brown said he felt great pleasure in moving a vote of thanks to Professor Voelcker for the able and interesting lecture which he had just delivered. Perhaps the most interesting portion of the lecture was that in which it was shown that an increase in the quantity of food did not necessarily lead to an increase in the quantity of milk. He had found by his own experience that it was possible to give additional food to his cows, which tended to fatten them, without making any difference in the quantity of cream. He wished to ask the Professor one or two questions, and he should feel obliged by his answering them. He said it was impossible to separate all the cream from the skimmed milk. Would he state whether the practice of scalding milk, which was practised in Devonshire, did not produce a complete separation? He wished, also, to enquire what, in the Professor's opinion, was the effect of gorse on milking-cows. In the *Irish Farmers' Gazette* it was stated that the use of gorse greatly increased the quantity of milk; and if that were so, it might be well to resort to gorse at a period of the year when other kinds of food were not abundant.

Professor Voelcker said, as regarded gorse, although he had made an analysis of it, he was not practically acquainted with its influence upon dairy stock. From what he knew, however, of its composition, and of its practical effect in the case of horses, he was inclined to think that it might be given with great advantage to dairy stock. In some parts of Scotland, waste lands which did not bear anything before are now cultivated entirely with gorse, intended for horses; and he was inclined to think that a food which was given usefully to horses, being a concentrated food, might also be given with advantage to dairy stock. With regard to the other question, he had no doubt that the scalding of milk would throw up a little more cream; but no amount of boiling would effect a complete separation. Even in the clearest whey, when the curd was separated from the milk there remained a certain amount of cream suspended.

Lord Feversham, in seconding the vote of thanks, said, although the Professor's treatment of it was important, there were some interesting parts of the question into which he had not entered, and upon which information might naturally be desired. As regarded the analyses and experiments which had been mentioned, he must remark that, unless comparisons were made between animals of the same kind, it was very difficult to draw satisfactory conclusions. They all knew that the Alderney cow gave much less milk than the Shorthorn, but that, at the same time, the milk yielded a great deal more cream and butter. They had not heard anything on that occasion with regard to the Devon and Hereford breeds.

The Chairman observed that Professor Voelcker stated distinctly that his comparison was between three Shorthorns and three ordinary dairy cows.

Lord Feversham continued: there could be no doubt that grass-fed cows would in summer yield an abundance of milk if the pastures were good, and that the butter would generally be of good quality. As regarded winter keep, they might, no doubt, easily feed cows with too much oil-cake, and so injure their milking properties and diminish the quality of cream; but he supposed the Professor did not object to their being fed on roots, mangold wurzel, or Swede turnips. Turnips might sometimes impart a taste to the milk, and therefore to the butter; but he (Lord Feversham) certainly considered mangold wurzel early in the spring an important and essential element in the feeding of milk cows. That root would not generate too much fat in the animal, and it would, he believed, rather increase the quantity of milk. The noble lord concluded by expressing a hope that the lecture would at once go forth to the agricultural public generally.

The Chairman remarked, that some years ago the subject of the composition of the milk of dairy cows was before under discussion. A great desire was then expressed for some means of securing the cream without the process of skimming; and it was suggested that that might be done by means of a syphon.

Mr. Moore: thought he gathered from Professor Voelcker that the three Shorthorns and the three dairy cows of which he spoke were kept out at grass during the analyses.

Professor Voelcker said both sets of cows were out at grass, and remained under the same circumstances during the experiments.

Mr. Moore: The result of giving cake to both classes of animals was, that it lessened the quantity of milk yielded by both.

Professor Voelcker: Exactly so.

Mr. Moore thought he also gathered from the lecturer that the size of the vessel in which milk was placed, whether it was large or small, did not increase or lessen the quantity of cream. Some years ago considerable discussion took place as to what should be the shape and size of milk-pans. He should like to know whether Professor thought that any particular shape or any particular depth of pan, would affect the quantity of cream which a given amount of milk would yield. Some years ago he (Mr. Moore) made some experiments with respect to the produce of Alderney cows, Shorthorns and Herefords, and the results were very satisfactory. He tested the milk in various ways, by a syphon, referring to the dates from the time of calving, and so on, and he found the quantity of milk in the case of these different breeds of animals very uniform, although there was a considerable difference in quality.