

grass alone, amounted to 28 pints in the morning, and 21 pints in the evening, making together 49 pints. The common dairy stock produced rather more, being 31 pints of morning milk, and 21 pints of evening milk, in the whole 52 pints. When they received 1 lb. of cake the three pedigree cows gave in the morning 26½ pints, and in the evening 22 pints, together 48½ pints: very nearly the same quantity as before, (A member—do you mean the three?) Yes; and the three common dairy cows produced 28½ pints in the morning, and 19 pints in the evening, making 47½ together. When 2 lb. of cake were given to them, the three pedigree cows yielded 26½ pints in the morning, and 21 in the evening, together 47½ pints; whilst the three common dairy cows produced 30 pints in the morning, and 19 in the evening, to ether 49 pints. It follows from this that, whilst the quality of the milk was not materially bettered, the quantity became slightly less in the case of the three ordinary cows; because we had from the three pedigree cows 49 pints of milk when kept on grass, 48½ pints when they got 1 lb. of cake, and the quantity was further reduced to 47½ pints with 2lbs. of cake; and from the three common dairy cows, when fed on grass alone, we got 52 pints, with 1 lb. of cake 46½ pints, and with 2 lb. of cake 49 pints. It would appear from these facts, then, that the additional food had a tendency to go to meat, or to produce fat. This would show that we cannot increase *ad infinitum* either the quantity or the quality of the milk. Cows that have a tendency to fatten, when supplied with additional food rich in oil and in flesh forming matters like linseed cake, have the power of converting that food into fat. They do not produce a smaller quantity. It is this, then, which renders all investigations respecting the influence of food on the quantity and quality of milk so extremely difficult. Accordingly to theory, it would appear that food rich in oily or fatty matter would be extremely useful for producing a rich milk; but in practice we do not always find this to be so. Indeed we often find that very rich food has just the other effect. It produces by no means a better milk, but a smaller quantity, and fat and flesh instead of milk. Well, I repeat, these things render all investigations on the influence of food extremely perplexing. There are so many circumstances which have altogether a disturbing influence on the food in its passage through the animal system that it is difficult to trace its course, and still more difficult to predict beforehand what will come of it.

INFLUENCE OF FOOD ON MILK.

* These remarks lead me naturally to speak a little more in detail of the influence of food on the quality of the milk. I just now noticed that the quality of the food, the composition of

the food, does not always indicate its adaptation or fitness for producing a good and abundant quantity of milk. For, besides a tendency which cows that are good fatteners have to convert peculiarly rich food into fat there are some purely practical considerations to be taken into account before we can decide upon the quality of the food which ought to be given to milking cows. It is well known that of matters pass rapidly into the milk. Cows that are supplied too abundantly with linseed cake produce milk that does not make butter. A very curious instance was brought under my notice some time ago, by Mr. Barthropp, Crettingham, in East Suffolk, of milk farmed cream that could not be made into butter. Whea put into the churn it heat up into foam and could not be converted into butter; the caseine would not separate, and I have been informed by Mr. Barthropp that he had given his cows linseed-cake in considerable quantities. This excess of linseed-cake, and, perhaps, a want of good dry hay, have evidently the effect of producing too much liquid fat; and in trying to separate as well as I could the solid or crystallised fat from the liquid fat I obtained the proportion: one-third of solid fat, in round numbers, and 23 parts of liquid fat. In churning the whole of it was made up into a sort of froth; in fact, it could not be churned; the butter remained a liquid, even at the cold period of the year when the milk was analysed—namely last January. I have never become acquainted with so striking a case, as showing the influence of a great excess of oily food on the quality of the cream and butter. In speaking of the quality of cream, more especially the fatty portion of the butter, I would likewise take this opportunity of observing that bad oil-cake, and especially linseed cake, does a great deal more harm than is generally supposed by the dairymen. The inferior taste of the milk of stall-fed cows is well known; but I believe it is not so well known that the wholesomeness of milk is affected by the abominable matters which are occasionally put into linseed cakes. At the present time, cake crushers seem to enjoy the privilege of incorporating any kind of oil refuse, no matter what it is, with linseed cake; and since this has been so, we hear more frequently of the milk, and of milk which has a disagreeable flavour. When the necessity arises for feeding cows with additional food, and linseed cake is found by practical men to be preferable to other kinds of food, I would suggest that it is better well laid out to buy the very best and purest cake, and not, for the sake of the lower price, get it of an inferior quality. The use of water, food, distillery wash, the acid waters of the makers, and similar refuse, make the milk, as is well known, watery, and dispense with the necessity of mixing water with the milk afterwards. By far the most commonly adulterated milk