

vorous animals; and curiously enough, it makes its appearance in the milk even of carnivorous animals when, by domestication, they are gradually accustomed to a bread diet. If you feed a dog with bread, the milk increases, and will contain some milk-sugar, and that quantity increases with the amount of bread and the starchy food with which you supply the dog. This shows the intimate connection which subsists between the character of the food and the composition of the milk of animals. Contrasted with the milk of carnivorous animals, the milk of the ass appears most inferior, and an extremely poor milk. But whilst it contains, as indicated in the analysis, 91½ per cent. of water, little *caseine*, scarcely any butter, and a very small quantity of ash, it is comparatively speaking rich in milk-sugar. Now, milk-sugar is a very digestible material. It is easily digested. Indeed, on the continent it is used as medicine in cases of indigestion. It is a household medicine for children. Children suffering from indigestion have administered to them a teaspoonful or two of this milk-sugar or *lactine*, as it is also called; and as an aperient medicine, I do not know another so wholesome. For invalids, therefore, ass's milk is, no doubt used in this respect—that it is an easily digested food. Persons suffering from indigestion are frequently unable to well assimilate the butter which is contained in good rich milk, and ass's milk, for this reason, is peculiarly well adapted to them. I question much, however, whether the composition of the milk of all donkeys is so poor as this. I ought to mention that my analysis is made of the milk of a German donkey, which, like Irish donkeys, is fed on the road side, not upon the richest of food. In short, it eats what it can pick up; but I believe that a well-fed donkey would furnish a much richer milk. I am led to this belief from having seen, by investigations, which I hope to publish in future number of the Royal Agricultural Society's Journal, on the variations in the composition of milk, what an important influence the amount and quality of food have upon the composition of milk. For a moment or two, allow me now to point out a few particulars with respect to the milk of ewes. I have here the composition of two samples of ewe's milk. Both were analysed by myself recently; one a fortnight ago, and the other was completed only the day before yesterday. The first sample of ewe's milk I had the pleasure of analysing for his Grace the Duke of Richmond, who had experienced a great many losses in his flock of sheep. Many lambs had died, and his grace thought it probable that the milk of the ewes was of a poor character, or contained something that was injurious. I put it under the microscope, and subjected it to a careful examination; but I found it perfectly normal. No pus, or other matter, which occasionally occurs in diseased milk, was present; and on comparing the analysis with the published analyses of ewe's

milk, I found it agreeing as nearly as could expect in two samples of milk. The published analyses of ewe's milk made it closely resemble goat's milk, for this reason; but on analysing the milk from our own ewe pen I struck with the very great difference in quality. You will observe that in the first sample of milk, which is from the ewe pen of College Farm, we have no less than 30 per cent. in round numbers, of solid matter; whereas the second sample we have only 16 per cent. There is thus, in the one sample of milk, nearly double the quantity of solid food than in the other. I have not learned what time had elapsed from the ewes having lambed; but the milk analysed by me from our own ewe pen is deduced from ewes that had lambed only three or four days previously. Now, the time at which the lamb had dropped has unquestionably great influence upon the quality of the milk. We know the very first milk which is yielded by the ewe after the lamb is dropped is more like cream than butter. The sample I have before me is not the very first milk: it is milk that was dropped two or three days after. I gathered it from a number of ewes, and all had lambed within the same period; but I was not prepared to find so great a variation. It is an important subject to ascertain what are the variations in the quality of the ewe at different times. But we have data for making that comparison; and already I have made a report to his Grace the Duke of Richmond, that the milk of the ewes was of good quality when compared with other samples of ewe's milk—analyses, however, which were not made in England, but on the Continent. It is very possible that a poorer milk is produced, and after all that this milk was of an inferior character and of poorer condition. At any rate, it is interesting to notice the high state of concentration of the milk that is yielded by the ewe the first week, or even three days after lambing. It is an extremely difficult thing to bring a lamb when its mother dies within the first four or five days. There is a peculiarity in the condition of ewe's milk which throws some light upon the subject, and it shows the reason why such difficulties are experienced. I propose to reserve a couple of ewes, and analyse their milk from time to time, in order to see if the milk gradually becomes poorer, or remains stationary, and also with a view of ascertaining what the average composition of ewe's milk

CIRCUMSTANCES AFFECTING THE QUALITY OF

Passing on, I would notice some of the circumstances by which the quality of milk is affected. The distance from the time of calving, have already referred to; I may, therefore, now refer to the age of the animal. It is well known that an old cow does not yield such good milk, nor so much milk. I have lately seen an analysis of milk which