on every side. It is true that to most of us these are unknown phenomena. Milk is merely regarded by many persons as a useful article in domestic economy: it improves our tea and coffee, it yields us butter and cheese; and that is the ordinary extent of our knowledge. Very few of us have leisure to reflect upon its uses to the young of animals. We often do not consider how that milk supplies the entire wants of the young— he growing calf; how the flesh and bones of the young bovine are all built up as it were by the materials found in its mother's milk, the carbon of the air it respires being also supplied from the same source.

Then again, the *composition* of that milk varies in a marvellous way with the wants of the calf It is needful, for instance, that the dark-looking matters found in the intestines of the newly-born animal should be removed: to this end, *the first milk* of the cow is found to possess aperient properties. The young calf needs at its birth milk of a better quality than when it has acquired a certain degree of strength. Now let the reader compare in the following table the different degrees of richness of (I.) 100 parts of the milk of a cow in a pasture, examined by Dr. Playfair, with (II.) that of a cow, analyzed by Boussingault, before the calf had been allowed to suck, and mark the far greater richness of the *first* milk of the cow.

	I. Ordinary milk.	II. First milk.
Casein or cheese	4·0	15 0
Butter	4·6	2·6
Sugar of milk	3 8	3·6
Ashes	0·6	0 3
Water	87 0	78·3
	100	100

It was Mr. Lyon Playfair, who some time since drew our attention to the composition of milk, its adaptation to the wants of the young animal, and the materials which it contains to supply every demand of the calf. As he told his hearers, in one of his eloquent lectures on the rearing and feeding of cattle, the casein of milk is precisely the same in composition as animal flesh, and hence supplies the matter adapted for the growth of the body. Its butter and sugar are destined for the support of respiration and the consequent maintenance of animal heat. Butter is indeed a substance admirably suited for the purpose, for it yields much heat by its union with oxygen. Sugar, also, is well adapted for the support of respiration. The ashes or mineral portion of milk consists chiefly of common salt, and the phosphate of lime, or earth of bones. In milk therefore, added Playfair, we find united all the conditions for the life of a young animal. Its rapid respiration, and the high temperature of its body, are supported by the butter and sugar of the milk. The casein furnishes matter for its growth, and the salts the materials for the formation of the bones, and the necessary constituents of the blood.

All such facts—and there are many other marvels to be met with, in our researches in the vegetable and animal worlds—cannot fail to stimulate our thirst for knowledge, and excite our gratitude to, and our reverence for the Divine Architect.

It is to only one of the chief constituents of milk—butter—that I propose to direct the reader's attention on this occasion. It is a branch of the economy of the farm, to which more and more attention is now paid. This is a natural result of the increasing demand for dairy produce. After a considerable interval the attention of the chemist has been again directed to this important subject. Two short lectures upon milk, and on the production of butter, have been delivered within a very recent period—the first, by Professor Voelcker, before the members of the Royal Agricultural Society; the second by Mr. James Dumbrell, of Ditchling in Sussex, at the April meeting of the Central Farmers' Club. It is some time since any practical discussion of importance has occurred on dairy management; and it is a little curious that two lectures should at last have been delivered within a few days, on so increasingly important theme. The operations of the dairy have hitherto had the same justice done to them as other branches of Agriculture. The incessant attention necessary in feeding the cows, in milking them, in the management of that milk and cream when it reaches the dairy, the ill effects upon the butter of only occasional neglect, all sources of loss, that too often discourage the farmer from keeping a dairy. In fact, like other pursuits, with care and persevering attention, dairying is a very profitable branch of Agriculture; but, it must be made a part and a never-neglected business of the farm, to ensure success. It was formerly essential that the location of an extensive butter dairy should be near to populous places; now, however, the increased rapidity and cheapness of railway transit has brought almost all places into sufficiently ready communication.

One of the chief points in dairy management advocated by Mr. Dumbrell, is the tethering of the cows, and the frequent movement of the tethering stake, so as to allow the cow to consume the fresh grass without even trampling on her food; for this purpose the stake is moved in his pastures only a few inches at a time, and thus the cow always feeds upon turf from which she has already eaten the herbage.

It must be remembered that the Jersey cattle, of which Mr. Dumbrell's fine herd is composed, are a singularly docile race, and when better breeds, in their case the tethering system, may be followed a custom universally practised in the Channel Islands.