

3. As has been already stated, however, it is not strictly correct that this or that kind of vegetable is more fitted to sustain animal life, simply because of the large proportion of nitrogen or gluten it contains; but it is wisely provided that, along with this nitrogen, all plants contain a certain proportion of starch or sugar, and of saline or earthy matter—all of which, as we have seen, are required in a mixture which will most easily sustain an animal in a healthy condition—so that the proportion of nitrogen in a substance may be considered as a rough *practical* index of the proportion of the more important saline and earthy ingredients also.

4. It is very doubtful, however, how far this proportion of nitrogen can be regarded as any index of the *fattening* property of vegetable substances. If the fat in the body be produced from the oil in the food, it is certain that the proportion of this oil in vegetable substances is regulated by that of the gluten or other analogous substances containing nitrogen. The stock farmer who wishes to lay on fat only upon his animals, must therefore be regulated by another principle. He must select those kinds of food, such as linseed and oil-cake, in which fatty matters appear to abound, or mix, as I have already said, a due proportion of fat or oil with the other kind of food he employs.

But large quantities of fat accumulate in the bodies of most animals, only when they are in an unnatural, and in some measure, an unhealthy condition. In the state of nature there are comparatively few animals upon which large accumulations of fat take place. A certain portion, as we have seen, is necessary to the healthy animal; but it is an interesting fact, that as much as is necessary to supply this is present in most kinds of vegetable food. In wheaten flour it is associated with the gluten, and may be extracted from it after the starch of the flour has been separated from the gluten by which the starch of the flour has been separated from the gluten by washing with water. In so far, therefore, as this comparatively small necessary quantity of fatty matter is concerned, the proportion of nitrogen may also be taken without risk of any serious error, as a practical indication of the ability of the food to supply the natural waste of fat in an animal which is either growing in general size only, or is only to be maintained in its existing condition.

While, therefore, it appears from the study of the principles upon which the feeding of animals depends, that a mixture of various principles is necessary in a nutritive food, it is interesting to find that all the kinds of vegetable food which are raised either by art or natural growth, are in reality such mixtures of the several substances—more or less adapted to fulfil all the conditions required from the nutritious diet, according to the state of health and growth in which the animal to be fed may happen to be.

An important practical lesson on this subject, therefore, is taught us by the study of the wise provisions of nature. Not only does the milk of the mother contain all the elements of a nutritive food mixed up together—as the egg does also for the unhatched bird—but in rich natural pastures, the same mixture uniformly occurs. Hence, in cropping the mixed herbage, the animal introduces into its stomach portions of various plants—some abounding more in starch or sugar, some more in gluten or albumen—some more in fatty matter—while some are naturally richer in saline, others in earthy constituents; and out of these varied materials the digestive organs select a due proportion of each and reject the rest. Wherever pasture becomes usurped by one or two grasses—either animals cease to thrive upon it, or they must crop a much larger quantity of food to supply from this one grass the natural waste of *all* the parts of their bodies.

It may indeed be assumed as almost a general principle, that whenever animals are fed on one kind of vegetable only, there is a waste of one or other of the necessary elements of animal food, and that the great lesson on this subject taught us by nature is, that by a *judicious admixture, not only is food economised, but the labour imposed upon the digestive organs is also materially diminished.*

SOOT AS A MANURE FOR POTATOES.—We saw a few days ago, a few miles from this city, one of the *finest fields of potatoes* that we have met with since the rot appeared some years since, and we are told by the intelligent occupier of the farm that the manure used was soot, and that he had tried it both with early and late potatoes with great success, the crop being large and very healthy. From another field, which had been manured with soot, one root alone produced eighty-seven potatoes, and the most of them good sized and perfectly sound, as all the rest of the crop were, some being forty, others fifty to each root.—*Gloucester Chronicle.*

CLOUTED DEVONSHIRE CREAM.—The milk being put into tin or earthen pans, of ten or twelve quarts, the evening's milk is placed next morning, the morning next evening, on iron plates, heated by a small stove, until the whole body of cream is formed on the surface, which being gently examined with the edge of a spoon or ladle, till small air bubbles, denoting the approach of a boiling heat, begin to rise; the pans are then removed, and the cream remaining on the milk till quite cold, is transferred into a churn or open vessel, and moved by hand with a stick about a foot long, and a peel of six inches diameter at the end. The cream before churning is the celebrated Devonshire cream; but the butter from it is found to separate more freely and sooner coagulate into a mass.