

warm, much of the internal heat; but dry food is free from this not unimportant objection, also.

When the mean temperature has become gradually colder, more heat is, with equal exposure—whatever may be true in exceptional instances—necessarily abstracted through the animal's hide; hence, if more nutritious food, or food with less heat-neutralizing properties, be not given, the animal must lose flesh. More nutriment is therefore necessary to keep up a given degree of animal heat, as cold increases or winter approaches. It is true more nutrition can be obtained by the consumption of more food; but it should be remembered, first—that the digestive organs have but limited power; and, second—that as the whole muscular system—muscles being the agents of digestion—has contracted—abdomen and stomach of course included—in proportion as the food of summer has gradually diminished succulency and consequently in bulk, till it has become substantially dry fall feed. Therefore more nutrition could be obtained only by increasing the number of meals, thus breaking upon the well established requisites of rest and regularity of feeding; time for the work and recuperation of the digestive organs.

Insensible perspiration, as the escape of watery parts of the food—after digestion—through the skin is called, is also much reduced by increased cold; the pores or vents shutting up, as it were, to prevent heat being abstracted or the equalization even going on, when bodies of different degrees of warmth come in contact with one another; this rule holding as well with warm hides and the cold air, as with your warm feet and a cold stove. Hence, when food containing too large a proportion of moisture is given, the excess of moisture is carried from the system through the bowels and kidneys;

because the skin refuses their egress in the form of vapor, and relaxation and greater liability to take cold surely follow such excess of water in the evacuations.

A given amount of nutriment can also be served out to animals in much less time, and consequently at less cost in dry than an equal amount in succulent food. Though this objection is of less importance than the unfitness of roots to the general concomitants of the season, still it is of weight enough to turn the scale in favor of dry, nutritious food in the fall, supposing the balance of advantages, as between such and succulent roots, was in other particulars generally equal; the more especially is this true, when the relative value of labor here is compared with its cost in the more equable climate of the British Islands.

Accordingly turnips, bagas, wurzel, &c., whatever may be their aggregate yield per acre—which is frequently very great—contain, notwithstanding, too much water, even if they were much more nutritious than they are, to be suitable as food for store stock when subject to ordinary exposure in this climate late in the fall.

For, instead of having a reduced amount of water in proportion to the nutriment, they contain in fact more water, and are more succulent and relieving than grass at midsummer—being therefore inconsistent with the general condition of food, of the state of the animal's system, temperature of the atmosphere, &c., which usually prevail in later autumn. Containing far too little nutriment, substantial food, in proportion to bulk—aside from their watery and heat neutralizing character—roots do not supply nourishment and heat enough to support the animal's strength and comfort, without unreasonable and hurtful engorgement of stomach and bowels; for the animal may be filled without