

It is pleasing to know that there exists a large class of Canadians of sufficient means to choose their food without regard to its market cost. Their selections are guided solely by considerations of palatability, nutritiveness and fashion, which generally means strawberries in winter, and unseasonableness throughout the year. It is not for people of this class that I am writing.

A very much larger class of our people is compelled, in these days of high prices, to consider somewhat closely the cost of food; and perhaps the largest class of all finds it necessary to reduce expenditure in matters of education, clothing and amusements in order to pay the grocer's and butcher's bills.

It may seem audacious in me to say that I am convinced that a very little elementary knowledge of well ascertained facts concerning the meaning of nutrition, and the actual utilization of food in the maintenance of life, might reduce the cost of our food fully fifty per cent, without any sacrifice of physical well-being. I have, however, given this matter very careful study, and I do not hesitate to make the above statement, quite deliberately.

Where then lies the difficulty in effecting this economy? Just here, that in order to practical results, the modicum of knowledge above referred to must be possessed not by the university professor, or even by the student, but by the average housewife, to whom is entrusted the marketing and the cooking of our food.

This brief essay is therefore addressed to the housewife, and is intended to be perfectly comprehensible by those who have had no formal or academic training in chemistry or biology, or any other of the sciences with whose results it deals. As far as possible, I shall avoid the use of unfamiliar terms; and if exactness of statement must thereby suffer, I shall nevertheless assure the reader of a sufficient degree of accuracy to justify her confidence, and to ensure useful results.

SOME PRELIMINARY CONSIDERATIONS.

One man lives essentially on bread and milk, another on meat, potatoes and water. Both are healthy and apparently well nourished. We look at these men, examine them carefully, and find that, so far as we can judge, they are made of the same stuff. Had we no other source of information than our own observation we should find it impossible to say which man was made of bread and milk, and which of meat and potatoes. Even when subjected to the most thorough medical inspection, it is found that flesh, bone, blood, skin, cartilage, secretion and all other detail, are essentially alike in each.

Here surely is food for thought; and it ought to be perfectly evident that the food eaten by each, however different in name and in appearance, must have some common character; it is in each case, capable of transmutation into body material. And the special foods named are only particular cases of scores of purchasable foods which could have effectively replaced them.

It must be sufficiently evident that, leaving out of account those foods which we eat, not because we need them, but simply for the pleasure of eating, food is needed for two main purposes — first, to build up the material of the body and to replace tissue which is wasted in life processes; second, to furnish energy, or the power to do work. For the human body is a machine in action; and like any other machine, must undergo constant repair, and be furnished with some motive power, in amount proportioned to the work it is required to perform. This power to do work, we call *energy*; and in order that we may speak definitely about energy we must have some unit of measurement of energy. When we want to speak of distance, we say so many miles; or of weight, so many pounds. In the case of energy, we use the *calorie* as our unit. It is not at all necessary to know that a calorie is the equivalent of an amount of energy, in the form of heat, that is required to raise the temperature of 1 litre of water through 1 degree Centigrade. It makes our thinking all the more definite to know this, as it does