

The fats are commercially the most important of the constituents of milk. The color and opaqueness of milk are due mainly to globules of fat, which are very minute and almost numberless. These are held in the liquid in the form of an emulsion, which possibly helps to explain why the fat of milk is so easily absorbed when used as a food.

The sugar of milk is similar in composition to cane sugar, but it is not nearly so sweet. This sugar readily undergoes fermentation with the formation of lactic acid. This change always takes place when milk sours, and it is this acid which thickens the milk, due to the coagulating of the casein.

The ash material is made up of a great variety of compounds, but it is particularly rich in those required for building bone and to supply the mineral constituents of the blood.

NUTRITIVE VALUE.

Milk is thus particularly adapted for use as a food by man for several reasons. It contains all of the four classes of nutrients—proteins, fats, carbohydrates, and mineral matter—in more nearly the proper proportions to serve as a complete food than any other food material. For the adult it is too bulky, and can well be used with a food rich in carbohydrates to supply the greater amount of energy exacted by the grown person. It is in a form well adapted for various uses in combination with other food substances, and in the preparation of various dishes for the table. Furthermore, at the prevailing prices it is an economical food.

DIGESTIBILITY OF MILK.

By digestibility of food several things are, or may be, meant. One is the proportion of a given food material or of each of its several constituents which an ordinary person may digest; another is the ease with which it is digested or the time required by the process. It may also mean whether the food material does or does not agree with the user.

Some people are differently constituted with respect to the chemical character of the food undergoes in the process of digestion and in the effects produced. This is true in the digestion of milk as it is with other foods. With most people milk is a wholesome, digestible and nutritious food, there are others who are made ill by it, just as there are people who cannot eat eggs, fruits, or other materials without feeling ill effects. But this does not detract from the value of these foods for those with whom they do agree.

Taking up more particularly the question of the completeness of digestion, experiments show that different people vary in the amounts which they can digest from the same food. The differences, however, are not as great as might be supposed. The results, in so far as they apply to milk alone, and in comparison with other food materials, is summarized by Dr. Langworthy* as follows:—

"The protein of milk, especially when it is used with other food materials, is quite readily and completely digested. In this respect it is like the protein of ordinary meats and fish. The protein of vegetable foods is much less easily digested. Thus, in potatoes and whole wheat and rye flour it may sometimes happen that as much

*Farmers' Bull. No. 74, U.S.A. Dept. of Agriculture.