

by the mammary glands. We must clearly understand the difference in the constitution of albumen and caseine before we can venture to offer a conjecture regarding the conversion of one into the other. The occurrence of caseine in milk—the best of all kinds of food—leaves no doubt regarding the use of this substance. Caseine not only yields to the infant body the material by which soft parts are nourished and caused to grow, but likewise conveys into the system a sufficient quantity of bone, earth and lime to cause the skeleton of the infant body gradually to attain its necessary solidity.

CASEINE AND MILK-ASH.

In chemical text-books the caseine is generally said to be held in solution in milk by means of an alkali, with which it is supposed to form a kind of salt; and the precipitation of caseine by means of an acid is explained as a consequence of the decomposition of the compound formed by the caseine and alkali—milk-ash being described as containing abundance of alkaline carbonates.

In examining samples of milk-ash, obtained in the course of investigations instituted by the chemists employed in the interest of the London *Milk Journal*, on London milk, it was found that there was no effervescence when an acid was poured on a milk-ash. This led to careful experiments on the action of a very diluted standard acid on the ash, and it was found that there is no appreciable quantity of alkali or alkaline carbonates. According to observations made in a great variety of milks, the milk-ash does not contain so much alkaline carbonates as would amount to the one thousandth of its weight; therefore, the current theory that caseine is rendered soluble in milk by means of an alkali cannot be true.

I mention these facts to show that all the mysteries connected with milk have not yet been solved. and that it yet offers an abundant field for experiment and observation.

FORMATION OF FAT IN MILK AND CHEESE.

Commissioner Hirschberg, in a communication to the *Milch Zeitung*, makes the following interesting remarks concerning the formation of fat in milk and cheese. He says:—"Subsequently to Herr Voits' demon-