

but experiments and practice have proved that it cannot live on Carbohydrates and Fats alone, because these contain no nitrogen—a fact which proves the fallacy of a so-called “vegetarian diet.” Persons who desire to restrict their diet solely to Carbohydrates are attempting the impossible, and the strictest of the sect of vegetarians are compelled to take animal substances like milk, cheese and eggs, in order to gain the necessary nourishment for their tissues.

In order to keep the body in health, the amount of material which it absorbs must be at least equivalent to the amount which it loses every day. In other words, the digestion, and, as it is termed, assimilation, of food must produce sufficient carbon and nitrogen to make up for the loss of those substances from the body, caused by respiration and muscular movement. The amount necessary in the case of a healthy man, taking only slight exercise, has been accurately calculated, and it has been found that the loss each day amounts to about 4,000 grains of carbon—most of which is lost as carbonic acid from the lungs—while of nitrogen, the loss amounts to about 300 grains a day. The question then is, how to replace the 4,000 grains of carbon and the 300 grains of nitrogen in the most economical manner, so that, for example, too much carbon and too little nitrogen, or the reverse, shall not be taken. For example, if a man were to live upon ordinary bread alone, he would have to eat more than four pounds every day in order to get from it the necessary 300 grains of nitrogen: but he would, at the same time, be eating nearly 9,000 grains of carbon, so that he would be taking more than twice as much of the latter material as he needed. On the other hand, if he were to live on meat alone, he would have to eat nearly six pounds of this each day, in order to obtain 4,000 grains of carbon, but, at the same time, he would be eating 1,000 grains of nitrogen; and so would be wasting from 600 to 700 grains of the latter. This proves, therefore, in the simplest manner, the necessity and the advantages of a “mixed diet”—combining some food stuffs which are rich in carbon, with others which are rich in nitrogen, so that the necessary amount of both materials may be taken without undue waste of either.

There are a few articles of food which contain, in themselves, the various constituents of a perfect diet, mixed in a suitable proportion for the bodily wants. And of these Milk stands pre-eminent—a fact which explains not only its extreme suitability for the diet of children and invalids, but also its wonderfully nourishing qualities.

The object of DIGESTION, then, is to alter the various constituents of food into such a form

that they can be assimilated, or absorbed into the system, and so be conveyed to the various tissues of the body, giving each the precise form of nourishment which it requires. Digestion is carried on in what is termed “the alimentary canal”—the continuous tube which stretches from the mouth and stomach throughout the length of the intestines. The walls of this canal throughout are largely composed of muscular fibres, which cause the canal to contract and thus enable the food which it contains to be pressed onwards; and the tube is lined inside with a coating of fine “mucous membrane.” Between the muscles and the mucous membrane there are large numbers of blood vessels, and of minute tubes which are called “lymphatic canals,” and into these the portion of the food which is absorbed passes; that part of the food which is of no value to any of the tissues of the body being excreted, or thrown off, in the shape of fæces. The blood vessels in the intestines, absorbing the dissolved materials which are ready for distribution, carry these to the tissues of the body. In general terms, it may be said that the fatty materials in the food pass into the lymphatic canals, and, after undergoing other changes, eventually reach the blood in an indirect manner, as we shall hereafter see.

(To be continued.)

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### Appointments.

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MISS ALICE MARGARET RACKHAM has been appointed Sister in the Indian Army Service. She was trained at the Norfolk and Norwich Hospital and at Guy's Hospital from 1884 to 1890, and has gained valuable experience in Nursing at the Sassoon Hospital, Poonah, and at the Tottenham Fever Hospital, and has held the position of Staff Nurse at the County Hospital, Lincoln. Miss Rackham is a Registered Nurse and a member of the Royal British Nurses' Association.

Miss Annie F. J. Smedley has been appointed Night Sister at the Western Fever Hospital at Fulham. Miss Smedley was trained and certificated at the Norfolk and Norwich Hospital, where she was promoted to be Sister, from 1886 to 1894. She has, for the last twelve months, been on the staff of the Registered Nurses' Society, where she has won for herself the confidence of the medical men and patients for whom she has worked. Miss Annie Smedley is a Registered Nurse and a Member of the Royal British Nurses' Association.

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