

8 or 10 weeks if occasional drinks be taken. It would have been very interesting if some facts had been brought forward to support this statement—we are not in possession of any which would verify it, although we have endeavoured to collect all the cases of fasting on record, many of which are undoubtedly apocryphal, as of Democritus, who subsisted for 40 days on smelling honey and hot bread of persons existing for 2, 3, 4, and 5 years without taking either food or drink. The longest genuine case is that of a religious fanatic who determined to starve himself for 40 days, but died exhausted on the 16th day. In determining this question several circumstances other than the ingestion of liquids should be considered, such as the state of the person previous to beginning the experiment, since life will be longest protracted in some comatose diseases, and in persons reduced by illness: so also the condition in which they are placed for the want of food, will be best borne by those who are in a humid atmosphere, or immersed in water, or accidentally immured.

We are glad to find that an extended account is given of the metamorphosis which the various kinds of food undergo by contact with the different secretions of the alimentary mucous membrane, and its glandular tributaries, from the practical application which can be made of such information. Our space forbids as copious an excerpt of this portion as we would wish, but we shall briefly allude to the more important points as they are stated. The chief object of the chemical phenomena of digestion consists in the solution, as far as possible, of those solid compounds which we receive in the food. Gaseous fluids or liquids enter the lymph and blood by diffusion. Most drinks require no special digestion, while some, as beer or coffee, are mixtures of solids and fluids, and then demand for the solid part solution prior to its absorption. The water of the secretions serves for the solution of soluble substances, as sugar, salt, &c., the salts or alkaline phosphates which occur in most animal juices, partly aid in the solution of the earthy phosphates; the acid gastric juice can drive off the carbonic acid of alkaline and earthy salts. The saliva is incapable of dissolving fats or coagulated albumen, at a temperature over 98, it converts paste into dextrin and grape sugar, and so makes it soluble; the presence of the gastric juice does not arrest this action, hence it proceeds in the stomach; raw starch is also acted upon, but with much greater difficulty. The fluids of the mouth, of its mucous membrane and glands, with saliva, induce a most energetic saccharine fermentation in boiled starch. The short time during which the alimentary bolus remains in the œsophagus allows of no very important chemical changes. The chief object of gastric digestion is the solution of coagulated albumen (the fats are attacked by the admixed saliva) though much depends on the state of its aggregation and other qualities; the fibrin of blood offers less resistance than albumen of hard boiled eggs; the muscular fibres are more easily