general account of the digestive processes, but only to pick out certain points in regard to which I may have something to say, which is either novel or has a practical bearing on the treatment of our patients. Of the bile and succus entericus I do not propose to say anything. I shall divide my remarks under the three headings of saliva, gastric juice, and pancreatic juice; and shall conclude with some observations on the preparation of peptones, and the feeding of patients on peptonised food.

1. SALIVA.—Saliva has but one ferment—namely, diastase, or, as it is sometimes called, ptyalin—and its sole action is to convert starch into sugar. Saliva acts with energy on gelatinized or cooked starch, but with extreme slowness on the native and unbroken starch-granules. This is the reason, or necessity, for the practice which has arisen and become universal among mankind, of cooking farinaceous articles of food before they are eaten.

The action of saliva on starch goes on in the mouth and gullet, and for a while after the morsel has reached the stomach: but the action is arrested as soon as the meal is thoroughly permeated by the gastric juice. In the case of a meal of farinaceous food, this arrest occurs long before all the starch is digested: and the work is taken up and finished, after the food has passed the pylorus, by the pancreatic juice. When the digestion of starchy food is at fault—or supposed to be at fault, for we really possess little exact knowledge of the indications of such a condition—we resort to one or other of the preparations of malt which contain diastase. At the present moment, the most popular of these preparations are the malt-extracts; and, to judge by the scale on which these extracts are advertised in the medical journals, they are very popular indeed. Several of these preparations are on the table before you; and I think they are likely to prove a valuable addition to our stock of remedies. They resemble a thick brown treacle in appearance, and their taste and smell are not unlike treacle. The statements made in the advertisements as to the nutritive value of malt-extracts are preposterous exaggerations; they are little better, merely as food, than so much syrup. Their real value lies partly in the diastase they contain, and partly in the pharmaceutical uses to which they may be put as vehicles for other drugs, especially cod-liver oil. If properly prepared, malt-extract is rich in diastase, and has a high power of digesting starchy matters. But you will be surprised to learn, as I was, that a large proportion of the malt-extracts of commerce have no action on starch. This is owing to a too high temperature having been used in their preparation. Any heat above 158° Fahr. is destructive to diastase in solution; so that if the extract be evaporated, as is directed by the German *Pharmacopœia* at a temperature of 212° Fahr., it is necessarily inert on starch. Out of fourteen trade samples of malt-extract examined by Messrs. Dunstan and Dimmock, only three possessed the power of acting on starch; and all the rest were inert. I myself examined three brands of malt-extract in regard to this point, and found all three very active. But even the most active of the three was feeble when compared with an extract of pancreas which I shall show you presently.

It is important to choose the right time for giving preparations of diastase, otherwise you may obtain little or no help from them in the digestion of the starchy constituents of the meal. The labels on all the malt-extract bottles I have examined direct a dose to be taken after meals. This is evidently a mistake. I told you a while ago that the action of diastase is arrested in the stomach; and I have reason to believe that this arrest is permanent, and that, under the ordinary conditions of digestion, not a particle of active diastase escapes through the pylorus. If, therefore, you wish to get a full amount of work from the dose of malt-extract, you should administer it, like the natural saliva, with the food; or, better still, mix it with the food beforehand. The malt-extracts lend themselves exceedingly well to this latter mode of administration. They have a sweet agreeable flavour, and a teaspoonful or two may be added as a sweetener, and mixed with tea, cocoa, coffee, arrowroot, sago, or any other farinaceous dish. The only precaution to be observed is that the food should be sufficiently cooled down to be endurable in the mouth before the malt-extract is added. I