

ferment in this case being diastase, which has been detected in barley, as also in the potato. But, for the fermentation or digestion of albuminoids and other nitrogenous substances, a different ferment is required, and this we have in pepsine, which has been detected by Riess and Will, and other observers, in the viscid secretion of *Nepenthes*, *Drosera*, and other insectivorous plants. A similar substance has been observed in the latex of *Carica Papaya*, and elsewhere in the vegetable kingdom. It seems probable, in fact, digestion is as widely diffused as phenomenon, and as various in its forms, among plants as among animals. It consists essentially in the transformation of the raw insoluble food-material (a colloid such as starch) into soluble crystalloids capable of assimilation. The process takes place chiefly in the reservoirs of reserve-material, such as seeds, bulbs, tubers, roots, the pith, and the bark. The nutrition of plants is, therefore, made up of three successive processes:—(1) elaboration, or the production out of its elements of carbohydrates, which can take place only under the influence of light; (2) digestion, consisting essentially in a hydration, such as the conversion of starch into glucose, associated commonly with evolution of carbonic acid, and accompanied by a molecular change which renders the product soluble and diffusible; and (3) assimilation, the absorption into the tissue of the substances thus prepared, accompanied usually by a loss of water, and the reversion of glucose to the condition of cellulose, a substance isomeric but not isomorphic with starch, and the consequent production of the cell-wall. Intussusception is, therefore, a process which can only succeed digestion. No essential difference can, in fact, be maintained, between the manner in which animals and plants digest their food.

ON THE PURITY OF CHLORAL HYDRATE.*

A few months ago some French and English journals contained complaints about certain impurities in commercial chloral hydrate. One of these complaints referred to the supposed presence of free hydrochloric acid, which was said to contaminate it, "because white fumes became visible on approaching to it a glass rod moistened with ammonia." Mr. C. Anneessens criticises this statement, and maintains, very correctly, that such a test is no proof of the presence of hydrochloric acid. Indeed, perfectly pure chloral hydrate, at any but very low temperatures, always fumes when brought near ammonia, and the presence of hydrochloric acid can only be demonstrated by means of silver nitrate. The white cloud which is formed from the fumes of ammonia and the volatilized vapor of chloral

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