in its progress through the intestines, *chyle* is absorbed by the lacteals; and this, poured into the blood by the thoracic duct, repairs the waste and nourishes the growth of the animal. But by what powers is the food made to undergo these transformations? Can we explain them on mechanical or on chemical principles? Here we come to a part of physiology less certain than the discovery of vessels, or of the motion of fluids. We have a number of opinions on this subject, but no universally acknowledged truth. We have a collection of *Hypotheses of Digestion* and *Nutrition*.

I shall confine myself to the former class; and without dwelling long upon these, I shall mention some of them. The philosophers of the Academy *del Cimento*, and several others, having experimented on the stomach of gallinaceous birds, and observed the astonishing force with which it breaks and grinds substances, were led to consider the digestion which takes place in the stomach as a kind of *trituration*.[5] Other writers thought it was more properly described as *fermentation*; others again spoke of it as a *putrefaction*. Varignon gave a merely physical account of the first part of the process, maintaining that the division of the aliments was the effect of the disengagement of the *air* introduced into the stomach, and dilated by the heat of the body. The opinion that digestion is a *solution* of the food by the gastric juice has been more extensively entertained.

Spallanzani and others made many experiments on this subject. Yet it is denied by the best physiologists, that the changes of digestion can be adequately represented as chemical changes only. The nerves of the stomach (the *pneumo-gastric*) are said to be essential to digestion. Dr. Wilson Philip has asserted that the influence of these nerves, when they are destroyed, may be replaced by a galvanic current.[6] This might give rise to a supposition that digestion depends on galvanism. Yet we cannot doubt that all these hypotheses,—mechanical, physical, chemical, galvanic—are altogether insufficient. "The stomach must have," as Dr. Prout says,[7] "the power of organiz-

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[5] Bourdon, *Physiol. Comp.* p. 514.

[6] Müller (*Manual of Physiology*, B. iii. Sect. 1, Chap. iii.) speaks of Dr. Wilson Philip's assertion that the nerves of the stomach being cut, and a galvanic current kept up in them, digestion is still accomplished. He states that he and other physiologists have repeated such experiments on an extensive scale, and have found no effect of this kind.

[7] *Bridgewater Tr.* p. 493