

That there is much new ground to be broken, in the line of observation, connected with the spinal vaso-motor centres, is conceded by leading physiologists. "It has been demonstrated that the body is constantly subjected to the risks of poisons produced within itself, many of the poisons produced, such as the ptomaines and leucomaines, are of the chemical nature of the previously known alkaloids, in toxic power, and reproduce their leading effects. The organism, even in a state of (supposed) health, is a veritable storehouse of these toxic substances. The respiratory passages, and intestinal canal, are crowded with micro-organisms. In these circumstances it is of interest to enquire, what defence, man can oppose to the disease and death producing poisons, by which he is so constantly endangered." (Address in Medicine by Thomas Richard Fraser, M.D., British Medical Association.) Long prior to disease, the result of toxic origin, we have the indications of toxic functional disturbance, and nowhere more so, than in the intestinal canal. According to Foster's (p. 285) Physiology, the chief and usual cause of the movements of the stomach and intestines, is the presence of food in the interior. "The afferent impulses from the stomach travel apparently by the vagus, *but we do not know the exact manner in which the food produces the movement*, and again (on page 384) the alimentary canal, like the heart, though to a less degree, possesses within itself such mechanisms, as are requisite for carrying out its own movements, and as in the case of the heart, *there is no adequate evidence that the ganglia scattered in its muscular walls, viz., those forming the plexus of Auerbach, play any part in developing these movements.*" Thus far it is quite evident, a considerable degree of doubt exists, as to the exact physiological ground work, on which rests the remarkable changes which take place in food transformation, prior to becoming incorporated with human tissue. The conversion of vegetable matter into muscle or blood, is unique in character, and entirely in advance of the finest external laboratory manipulation. The plexus of Meissner in the submucous coat of the bowels; the plexus of Auerbach, in the thin sheet of connective tissue of the muscular layers of the intestine; and lastly, the vaso-motor centres of the spinal cord, constitute a trio of nerve generating power alike interesting and attractive, and which doubtless are intimately associated, in the transforming process of food to tissue, and yet we must acknowledge, with Prof. Charcot, that there still exist numerous lacunæ in this study. The nervous system, reduced to very simplest form, is represented by two elements, a nerve cell, and a conducting tube, and the association of these two elements constitutes nerve centres, and nerves, which guide and direct capillary