

by the obliteration of the parts which are in contact, into single tubes, throughout a considerable portion of their length.*

Nature, ever vigilant in her anticipations of the wants of the system, has accumulated round the embryo ample stores of nutritive matter, sufficient for maintaining the life of the chick, and for the building of its frame, while it continues in the egg, and is, consequently, unable to obtain supplies from without; yet, with the same foresight of future circumstances, she delays not, longer than is necessary for the complete establishment of the circulation, to construct the apparatus for digestion, on which the animal is to rely for the means of support in after life. The alimentary canal, of which no trace exists at an earlier period, is constructed by the formation of two laminæ, arising from folds of the innermost of the pellicles which invest the embryo; that is, on the surface opposite to the one which has produced the spinal marrow. These laminæ, which are originally separate, and apart from one another, are brought together, and by the junction or soldering of their opposite edges, formed into a tube,† which, from being, at first, uniform in diameter, afterwards expands into several dilated portions, corresponding with the cavities of the stomach, crop, gizzard, &c., into which they are to be converted, when the time shall come for their active employment. These new organs are, however, even in this, their rudimental state, trained to the performance of their proper offices, receiving into their cavities, through a tube temporarily provided for that purpose, the fluid of the yelk, and preparing nourishment from it.

In the mean time, early provision is made for the aeration of the fluids by an extensive but temporary system of

* These facts were first observed by Serres (*Annales des Sc. Nat.* xxi. 8,) and their accuracy has been confirmed by the observations of Dr. Allen Thomson. In Reptiles this union of the two constituent trunks of the aorta is effected only at the posterior part, while the anterior portion remains permanently double. (See Fig. 357, vol. ii. p. 197.)

† Wolff is the author of this discovery.