

L. Fig. 335 gives a side view of the anterior extremity of the same vessel, showing the curve (Λ) which it describes as it bends downwards in its course towards the head.

The function performed by the dorsal vessel, which, judging from the universal presence of this organ in insects, must be one of great importance in their economy, was long a profound mystery. Its analogy in structure and position to the dorsal vessels of the Arachnida and the Annelida, where it evidently communicates with channels of circulation, and exhibits movements of pulsation resembling those of insects, was a strong argument in favour of the opinion that it is the prime mover of a similar kind of circulation; but then, again, this hypothesis appeared to be overturned by the fact that no vessels of any kind could be seen extending from it in any direction; nor could any channels for the transmission of a circulating fluid be detected in any part of the body. Those organs, which, in animals apparently of an inferior rank, are most vascular, such as the stomach, the intestinal tube, the eye, and other apparatus of the senses, seemed to be constructed, and to be nourished, by means totally different from those adopted in the former animals. Although extremely minute ramifications of air tubes are every where visible in the interior of insects, yet, neither Cuvier, nor any other anatomist, could succeed, by the closest scrutiny, in detecting the least trace of blood vessels; and the presumption, therefore, was, that none existed.

But it still remained a question, if the dorsal vessel be not subservient to circulation, what is its real function? Marcel de Serres, who bestowed great pains in investigating this subject, came to the conclusion that its use is to secrete the fatty matter, which is generally found in great abundance in the abdominal cavity, and which is accumulated particularly around the dorsal vessel.* A more attentive examination of the structure of the vessel itself brought to light a valvular apparatus, of which the only con-

* See his various papers in the *Mémoires du Muséum d'Hist. Nat.*; tom. iv. and v.