

can judge, possesses no aperture. I have not the least idea of the functions of this cavity, but aggregations of corpuscles resembling blood having often been found within it, it may possibly communicate with the pseudhæmal vessels.

The digestive tract in *Benthodytes sanguinolenta* as well as in *Benthodytes sanguinolenta*, var. *marginata*, is especially characterised by its second descending portion carrying a large, wide cæcal appendage or "diverticulum" about 15 mm. long (Pl. XL. fig. 4), which is situated far from the anus, in the largest individuals at a distance of about 170 mm., and which opens within the digestive tract by a very wide aperture; its structure does not differ greatly from that of the digestive tract.

Having nothing of importance to add to that which already is known, I think it unnecessary to give an account of the histological structure of the walls of the alimentary canal. I only refer to the Plate XXXVI., figs. 1 and 2, which represent some sections showing the different layers which compose the walls. The digestive tract is often strengthened by calcareous spicula of varying shape and size.

The cavity or sinus, which is enclosed between the most anterior portion of the digestive tract and the surrounding water-vascular ring with its five main branches, and which is termed the "œsophageal sinus," is either almost entirely closed by a thin membrane, as in *Lætmogone* (Pl. XLIII. fig. 4), *Elpidia glacialis*, *Benthodytes sanguinolenta* (Pl. XL. fig. 5), *Ilyodæmon maculatus*, &c., or this membrane is absent (Pl. XLIII. fig. 6), the sinus thereby communicating directly with the peritoneal cavity, as in *Oneirophanta*, *Orphnurgus*, &c.

Throughout the whole of its course, the alimentary tube is connected with the wall of the body by a dorsal mesentery, which either, as in *Oneirophanta*, *Lætmogone*, &c., consists of a continuous more or less fenestrated membrane, or, as in *Scotoplanes globosa*, &c., is reduced to bands and threads. The mesentery is usually strengthened by calcareous spicula of varying shape and size.

#### THE PSEUDHÆMAL SYSTEM.

The pseudhæmal system in the Elaspoda closely resembles that in the rest of the Holothurioidea; and this having been already most carefully described by Tiedemann, Semper, &c., does not require any further explanation. I only intend to point out some peculiarities, especially with regard to the arrangement of the vessels, which in a more or less important degree distinguish the order in question. However, it ought to be remembered that any closer examination of the hæmal system has not been possible because of the materials having been highly macerated and softened by long immersion in spirit.

The ventral and dorsal stems seem usually to consist of but a single vessel. None of the Elaspoda possessing any respiratory trees, no traces are discernible of the large *rete*