

the cells which border the narrow channel. (Probably we have here the explanation of what Darwin means, when he says that the outer integument is inflected inwards, and ends in an open tube.)

I propose to call the duct which opens at the extremity of the tubes the "segmental duct," and the bell-shaped cell-mass with its very narrow channel the "segmental funnel." I think we can hardly hesitate to consider these organs as true segmental organs, but before entering into a discussion of the arguments in favour of this suggestion, I will finish the description. To the apparatus belongs also a well-developed set of muscles attached round about to the external surface of the bell-shaped cell-mass, of which especially those directed to the external side of the body, are very strongly developed; they form towards the interior of each organ a nearly triangular mass, the apex of which is directed towards the interior of the body, the broad basis being placed against the outer surface of the bell-shaped cell-mass (Pl. V. fig. 2). The muscle-fibres of the external side of the cell-mass are distinctly divergent, and a part of them continues in a rather strong bundle of muscle-fibres running towards the border of the body-cavity. In my most successful, thinnest, and best stained preparations the muscle-fibres did not show transverse striation; those especially of the external side were remarkable for their clearness and smoothness, resembling thin elastic fibres of the connective tissue. Between these fibres interspaces may be seen everywhere, and in these numerous pale small round cells were visible, which I think were blood-corpuscles. Probably the function of the muscle-fibres is not in the first place to move, but to form a labyrinth of small cavities in which the blood accumulates.

What may be the morphological significance of this organ? Considering that it constitutes an open communication of the body-cavity with the exterior, there can be no doubt that it must be compared with the segmental organs of the Annelida. The high development in the genus *Scalpellum* of the flattened tube at the end of which the orifice is found, shows, I think, that we have not before us a rudimentary organ, but an apparatus of an important functional significance. From a phylogenetic point of view its importance increases with our knowledge of the great age of Cirripedia, of which, *e.g.*, the present genus is already represented in the Lower Greensand. Where the shell has remained exactly the same, we can safely admit that the structure of the animals is sure to have changed very little or not at all since that remote geological period.

A rather curious circumstance is found in the fact that in Cirripedia only one pair of segmental organs has remained. In the oldest Tracheate Arthropoda we know of (*Peripatus*), according to Balfour,¹ there are found nephridia or segmental organs in all the legs; in Crustaceans these same organs have not been observed with certainty; the only instance mentioned in literature is that of terrestrial Isopods, where M. Huet²

¹ F. M. Balfour, The anatomy and development of *Peripatus capensis*, *Quart. Journ. Micr. Sci.*, vol. xxiii. pp. 213-259, 1883.

² Huet, Sur l'existence d'organes segmentaires chez certains Crustacés isopodes, *Comptes Rendus*, 1882, No. 12, p. 810.