

simple longitudinal expansions of the basement-tissue, which stain more deeply than the basement-tissue itself. They appear at first like a series of V-shaped processes along its inner border. The limbs of the V gradually separate and enclose a canal which traverses the whole region of the basement-tissue (that is, extends from its outer to its inner border). Proceeding distally (anteriorly), the chitinous skeleton becomes much more complex, from the fact that it develops tubes for the transmission of the circulatory fluid, extends round the whole circumference of the body, except a limited region at the neural hiatus, and, moreover, splits into two or more rows. In the formation of the circulatory channels, the chitinous longitudinal processes would first seem to form a thin arch with two dilated pillars, and then a complete ring with much thinner walls. Before complete separation of the basal folds of the web occurs, the sections show a double row of these channels, one being on the outer edge of the volution and the other on the inner—a basement-layer separating the former row and its spongy vascular tissue from the latter. A line intersecting the coils would thus (before separation occurs) pass through four complete series of these channels, and in certain positions (involving the central volution) through six. At the base the inner row at the margin of the central coil is incomplete, but by and by the vessels form a continuous series round the edge. The structure of one of these double basal rows is as follows:—Externally is the cuticular layer (Pl. III. fig. 3), which, however, in the preparations does not seem to be well differentiated, since it forms only a definite boundary to the hypoderm. This feature is probably related to the branchial functions of the region. Within is a layer of hypoderm, which varies in thickness and colour according to the level of the section. Its structure agrees with that of the body-wall, and accords with the same tissue in the Annelids and Nemertean. Directly under it are the elastic arches of the outer row of channels, which are incomplete internally,—each debouching into a large vascular space, which with connective tissue fills up the area between the outer row and the line of basement-tissue separating the two series. In transverse section the basement-tissue shows the thickened sides formerly alluded to, and is often finely streaked, but the latter is probably only an optical peculiarity. Within the line of basement-tissue are the inner series of channels, which have complete walls (and the outer row would thus seem to be less developed at a given level than the inner); and in transverse section present a noteworthy uniformity in appearance, viz. with a dumb-bell shaped outline of the inner wall, from the thickening of the median region on each side, while the lines of the outer wall laterally are nearly parallel. The outer and inner arches of the vessel are thinner. Only a slight quantity of connective-tissue separates each chitinous channel from the septum or line of basement-tissue, while the other arch has a thick coat of hypoderm, which soon (as we proceed distally) becomes grouped in a series of fan-shaped masses. The inner surface of the channels (of basement-tissue) is furnished with an epithelial lining; and since in section the arch next the septum