Zoology Part XIII: Report on the HOLOTHURIOIDEA. First Part.-The Elasipoda. By Hjalmar Théel. Bound in Volume 4,1882.

of canals. Besides these transverse appendages, one or several pairs of more or less rudimentary processes seem to be present as a rule.

The Body-wall.

The structure of the solid sac termed the body-wall or the perisoma, which encloses the spacious peritoneal cavity and gives to the animals their form, has been already very satisfactorily described by Baur,[1] Semper,[2] Teuscher,[3] &c., and, the material being so softened and macerated by a long immersion in spirit as to make a closer histological examination impossible, I have nothing of importance to add to their investigations, and refer to the splendid memoirs of these authors. Notwithstanding the previously-known facts, I think it may be well to state some points which I have observed when examining the deep-water forms, and which may possibly aid to throw light upon the whole class.

The body-wall consists, as already known, of an outer cellular ectoderm, covered externally with a very thin, transparent cuticule; beneath the ectoderm is a layer of connective tissue, the corium, within which are to be seen circular and longitudinal muscular fibres lined internally with a delicate peritoneum. Corium is of the greatest importance not only in being the secreting layer of the calcareous deposits peculiar to the Echinoderms, but also by reason of its more or less considerable thickness, which occasions striking changes in the shape of the body. The thickness of this layer of connective tissue varies much in different species, and even in the same individual is not always uniform throughout the whole body. According to Selenka,[4] the body-wall in the genus *Stichopus*, Brandt, is always thicker along the interval between the ventral and dorsal surfaces; the same applies to the Elasipoda, in which *Deima* and *Oneirophanta* form good examples, having the large, branched, ambulacral cavities of their lateral pedicels and processes lying inside the thick layer of connective tissue. This peculiarity distinguishes to a very great extent the whole of the Psychropotidæ, the representatives of which have the perisoma increased in thickness all around the body, so as to form a more or less considerable brim (Pl. XL. fig. 6). The singular large appendage which is present on the back in a great number of Elasipoda is likewise for the most part made up of connective tissue.

The tentacles, the pedicels, and the processes are composed of the same layer of tissues as the body-wall proper, excepting that no circular muscular fibres are to be found. In various forms, as, for instance, in *Deima validum*, &c., the layer of connective tissue,

[1] Beiträge zur Naturgeschichte der *Synapta digitata*, 3 Abhandlungen, mit 8 Tafeln (Nov. Act. Acad. Cæs. Leop.—Carol., tom. xxxi., Dresden, 1864).

[2] Reisen im Archipel der Philippinen, ii., 1, Holothurien, Leipzig, 1868.

[3] Beiträge zur Anatomie der Echinodermen (Jenaische Zeitschr. f. Naturwiss. Bd. x., Jena, 1876).

[4] Beiträge zur Anatomie und Systematik der Holothurien (Zeitschr. für wissensch. Zoologie, xvii., 1867, p. 315).

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