

cilia and are to be regarded as organs of circulation. They are formed from the ectoderm by a downward growth of the stomodæum. They are the last to be developed in the oozoid, but the first in the blastozooid. The remaining six mesenterial filaments are all derived from the entoderm, and have a digestive function. With regard to the phylogeny of the mesenterial filaments, Wilson makes the following proposition:—"I would suggest that it is in a high degree probable that the lateral lobes or 'Flimmerstreifen' of Actiniaria, at least in the principal or complete septa, are the homologues of the ectodermic bands of Alcyonaria, and are likewise ectodermic downgrowths from the stomodæum, and that the central lobes or 'Nesseldrüsenstreifen' are homologous with the entodermic filaments. As the Hertwigs have described, if we follow the filament upwards towards the œsophagus, the central lobe disappears and only the lateral lobes remain. The filament is then closely similar to the dorsal filaments of Alcyonaria, which are also bilobed. If we follow the filament downwards, the lateral lobes disappear and the middle lobe remains. The filament is then essentially similar to the entodermic filaments of Alcyonaria" (Mitth. Zool. Stat. Neap., Bd. v. p. 21).¹

Wilson also states, on the authority of Andres, that there is a certain amount of embryological evidence in favour of the view that the upper part of the filaments of the six principal mesenteries is derived by a downgrowth from the ectoderm of the stomodæum.

Fowler, in a paper on the structure of *Madrepora*, &c., discusses Wilson's view as to the phylogeny of the Anthozoan mesenterial filaments as applied to the Madreporaria, and adds:—"I may here state that, so far as histological evidence from the adult is valuable, it points, in all the Madreporaria that I have yet examined, distinctly in the opposite direction. The central 'Nesseldrüsenstreifen' have precisely the same microscopic appearance as the stomodæal ectoderm; while the 'Flimmerstreifen,' in the unbroken gradation by which they pass into the entoderm and by their characteristic staining, seem to be much more nearly connected with that layer than with the ectoderm, and to exhibit an intermediate condition between the ordinary cubical or pavement cells of the endoderm and the enormously lengthened cells of *Madrepora durvillei*" (Quart. Jour. Micros. Sci., vol. xxvii. pp. 8, 9). This is practically a return to the views of von Heider, as Fowler himself points out.

In the Antipathinæ the structural evidence on this subject appears to me to be almost, if not quite, conclusive. There is no similarity whatever between the ectoderm and the

¹ In the final section of his paper, Wilson discusses the relation of the Anthozoa to the Enterocœla, and points out that morphologically each polyp consists of an anterior and a posterior chamber, together with a variable number of paired lateral chambers, and compares the adult condition in Anthozoa with developmental phases of *Peripatus*. His conclusions are so closely in harmony with those advocated on pp. 57-59 of this Report, that I feel it only just to state that my conclusions have been arrived at quite independently, and that I had not read Wilson's paper until the whole of my Report, with the exception of these last few pages, was in type.