

is continuous with that of the stomodæum. In most cases the "secondary" mesenteries never reach the lateral body-wall; the "primary" mesenteries always do so. It will be seen, however, that the relation of the mesenteries in such cases is precisely the reverse of that found in Actiniaria. In Actiniaria a mesentery is said to be "complete" when it extends from the body-wall to the stomodæum, and "incomplete" when it does not reach the stomodæum. In many Actiniaria new mesenteries are first recognisable in the angle between the pedal disc and the body-wall. They are usually regarded as involutions of the pedal disc and body-wall. In the genus *Halcampella*, for example, there are six well-developed pairs of mesenteries, and in addition a variable number of rudimentary "accessory" ones. "The accessory septa are small projections, which in the upper part of the body alone emerge from the angle between the body-wall and oral disc."¹ Thus the terms "complete" and "incomplete," as applied to the mesenteries of Zoantharia generally, are not applicable in the case of Antipathidæ. The behaviour of the "secondary" mesenteries in that family appears to indicate that they arise as outgrowths of the peristome and stomodæum, and not as involutions of the body-wall. All are complete in the sense that they are united with the mesogloea of the stomodæum. Those which are incomplete become so from the fact that they lose their connection with the outer wall, not with the stomodæum.

DIMORPHISM.

The dimorphism of the Schizopathinæ is probably the most interesting point brought out by a study of the Challenger Antipatharia. In its result it is comparable to the nutritive and sexual zooids of certain Hydroids, but its mode of production is quite different. There appears no parallel case in the Cœlenterata so far as I am aware. The gastrozooids and dactylozooids of Hydracorallinæ have no resemblance, the latter type being modified solely for defensive and offensive purposes. Amongst the Alcyonaria dimorphism obtains in Pennatulidæ, certain Alcyonidæ, Pseudaxonia, &c. The autozooids are of normal structure. The siphonozooids are usually without tentacles, and have a well-developed siphonoglyphe; they are usually sexless, but in certain Pseudaxonia, *Corallium*, &c., bear ova, and apparently sometimes develop into autozooids. In the Zoantharia the only case of dimorphism known to me is that described by Fowler in *Madrepora durvillei*. In this species the dimorphism chiefly affects the structure of the mesenteries. In type A the abaxial directives and the mesenteries numbered 3, 5, 8, and 10 (fig. 15) have a median thickening which contains a narrow canal, lined by ectoderm, opening at both ends into the stomodæum. From the upper aperture the canal passes somewhat horizontally into the mesenterial thickening, becomes bent vertically downwards, and then turns round and takes an upward course, finally opening

¹ R. Hertwig, Challenger Actiniaria (Suppl.), Zool. Chall. Exp., pt. lxxiii. (vol. xxvi.) p. 32.