

several points about it which seemed to indicate it as a suitable object for such a purpose. In the first place the unusual size of the body is favourable to dissection by means of knives and scissors, and in the second place, it was represented in the Challenger material by a large number of tolerably well preserved specimens. Two of the individuals were in a state of intense contraction, whilst in the other three the tentacles still projected through the opening formed by the upper margin of the half-contracted wall.

The pedal disk is moderately thick, irregularly warted on the surface, otherwise flat. It passes at right angles into the wall, of which the surface is perfectly smooth, except in the upper part, which is folded longitudinally in consequence of the contraction of the circular muscle. Most of the animals are distended like a drum, as sometimes happens in the Actiniæ, so that the wall has become a thin membrane with the origins of the septa shining through it. At its upper margin only, where it is connected with the oral disk, the wall becomes thickened to from four to five times its usual strength (fig. 12), and shows in transverse section a yellowish tract, lying in whitish fundamental tissue close under the endoderm, which is caused by the circular muscle running in this part.

The bundles of fibrillæ appear in transverse section (Pl. VII. fig. 7) as roundish or repeatedly indented figures, whose periphery consists of a corona of fine fibres, but whose centre appears in the spirit material almost empty, whilst in the living animal it is filled with protoplasm and the nuclei of the muscular corpuscles. The bundles of fibrillæ lie so closely together in the fibrous fundamental tissue of the mesoderm that it is hardly possible to determine distinctly whether or not they are united into smaller and larger groups. As the section shows, they become divided and united by anastomoses into an annular plexus, lying parallel to the course of the fibrillæ, *i.e.*, parallel to the pedal disk (fig. 9).

Different points in the distribution of the bundles of fibrillæ favour the view that the mesodermal bundles originate in the endoderm, and only become deposited secondarily by detachment in the mesoderm, where they increase still more by division and separation. The bundles of fibrillæ lie usually in layers parallel to the endodermal surface, as a few more compact layers of supporting substance extend through the mass of the bundles parallel to the endoderm. The largest bundles are placed nearer the ectoderm, where they are separated from one another by broader layers of connective substance, whilst the smallest bundles (fig. 8) lie close under the endoderm, and—what is the most important point—are connected here and there with the circular layer of fibres which run on the endodermal surface of the mesoderm.

The oral disk is covered with numerous shallow furrows, running from the oral margin towards the tentacles. Their radial muscles form a tolerably broad stratum in the mesoderm, and this is separated from the ectoderm by a thin, and from the endoderm by a thick, layer of connective substance (Pl. VII. figs. 10 and 11). This stratum is again com-