they are bell-shaped, the walls of the bell or *umbrella* being mainly composed of a transparent substance of gelatinous consistence. From the summit of the bell-cavity hangs a tubular body of variable length,—the *manubrium*—whose distal or free extremity carries the mouth, and on whose cavity devolves the function of digestion. From the basis of the manubrium four (sometimes more) canals pass off and run in equally distant meridian lines in the walls of the umbrella towards its margin, where they open into a circular canal which runs quite round the margin of the umbrella. The opening (*codonostome*) of the bell-cavity is partially closed by a membranous diaphragm, the *velum*, which stretches across it from the margin, and is perforated in the centre by an aperture which allows the surrounding water to enter the bell, and through which it may be again expelled from within, while hollow contractile filaments or *tentacles*, which vary much in number in the different species, hang from the umbrella margin.

The umbrella is eminently contractile, and acts by alternate rhythmical dilatations and contractions (diastole and systole) of its cavity as a powerful organ of locomotion by which the planoblast is propelled through the surrounding water.

The external or convex, and the internal or concave, surfaces of the umbrella are clothed with a cellular epithelium—the representative of the ectoderm. Between these lies the thick elastic gelatinous substance traversed in meridional lines by the radiating canals, and in a circular direction by the marginal or circular canal. Both sets of canals have their walls lined with endoderm.

The researches of the Hertwigs[1] have shown that a thin lamina of endoderm exists in the intervals of the radiating canals, and connects these canals laterally with one another. This "endoderm lamella" represents the obliterated portion of the lumen which existed between the two layers of the double walls of an endodermal cup which was present in the early stages of the developing bud, while the radiating canals represent those portions of the lumen which have continued pervious (see below, p. xxxi).

The great contractility of the umbrella is due to a continuous muscular sheet which lies just under its concave or "subumbrellar" surface. The fibres of this muscular layer are transversely striated and seem to be derived from the epithelial cells. They take a circular course parallel to the umbrella margin. In some cases fascicles of meridionally disposed fibres are also present. A strong muscular layer also exists in the velum, where

the internal surface of the stomach-walls. 3. The absence in the Craspedotæ of true marginal lobes, into which the margin of the umbrella is divided in the Acraspedæ. 4. The fact of the sexual receptacles (genitalia) of the Craspedotæ discharging their contents externally into the surrounding water instead of internally into the cavity of the gastro-vascular system as in the Acraspedæ. 5. The possession by the Craspedotæ of a double marginal nerve-ring representing a centralised nervous system, while in the Acraspedæ where a nerve-ring has been demonstrated this is never double. 6. The fact of the polyp-form which shows itself in the course of the development of a Craspedote Medusa being a Hydropolyp destitute of gastral longitudinal ridges ("tæniola" in the strict sense of the word), while in the Acraspedæ it is a Scyphopolyp or polyp-form with gastral tæniola. 7. The fact of the Craspedote Medusa being formed by lateral budding from its Hydroid trophosome, while the Acraspedote Medusa is formed by terminal budding from its Scyphopolyp.

[1] O. und R. Hertwig, Das Nervensystem und die Sinnesorgane der Medusen, Leipzig, 1878.