

this indicates the central nervous system. The hypoderm of the basal region contains numerous granular masses (gland-cells and pigment) which have a brownish hue by transmitted light. The plumes (Pl. II.) are nearly of uniform size, and consist of a thickish central stem, occasionally slightly crenate, and furnished with a series of longitudinal fibres; while distally each is terminated by a peculiar bulbous enlargement, which at first sight resembles the tip of certain hydroid tentacles (*e.g.*, *Coryne* or *Syncoryne*) bristling with dart-cells and pigment. The rugose appearance, however, is due to large gland-cells containing granules and globules (Pl. V. fig. 1), which are arranged in a somewhat regular manner round a central cavity, and which present a deep yellowish tint in the preparations. This structure may perhaps be a further and special development of the somewhat large hypodermic granules of the tips of the pinnæ. The appearance of these bulbous enlargements in section is shown in Pl. IV. fig. 3, part of the upper wall of the stem in this case being formed of the ordinary hypoderm below the tip. When the latter is cut longitudinally, the space in the centre of the bulbous extremity is found to be continuous with a similar space at the end of the arm. Very soon, however, transverse bridges and fibres occupy the central region of the latter, so that a kind of meshwork takes the place of a canal. In transverse section the terminal region of the stem is formed of a thick coating of hypoderm (probably in life covered by a ciliated cuticular layer) somewhat regularly marked (Pl. IV. fig. 4) by striæ so that the cell-like divisions are frequently wedge-shaped. The hypoderm abuts on a basement-tissue, apparently continuous with that which belongs to the basal apparatus next the disk, and which is in relation laterally with the axes of the pinnæ on each side. The wall of the canal of the arm, even in this region, presents a series of fibres which render it hirsute in section, but they do not in every case meet across the lumen. As we proceed downward, however, the sections of the arms are flattened and the margins prominent, so as to form ventral grooves, and the two sides are bound together by transverse fibres, a median junction especially being conspicuous. This meshwork of fibres is better seen in good horizontal and longitudinal sections of the plumes, in which the transverse fibres pass from side to side in almost parallel series, minute nuclei or corpuscles being everywhere abundant, apparently adhering to the fibres, or perhaps indicating their origin from cells of the connective tissue. As in the basal region, therefore, the centre of the arm is composed of a series of reticulations or meshes. The hypoderm also of the arm below the terminal region is considerably thinner, showing that this system of lacunæ reaches its culminating point in the terminal enlargement. The longitudinal fibres inside the basement-tissue are probably those observed in the external views of the arms.

The sides of the stem (Pl. IV. fig. 1) are rendered plumose by a large number of long slender filaments having rounded or slightly bulbous extremities, which show a linear streak from base to apex, from the presence of the axis or skeleton. The latter was first clearly discriminated as a "skeleton" in *Cephalodiscus* by Professor Ray Lankester, for