Both in *Bathycrinus* and in *Rhizocrinus* the organic and calcareous networks, which interpenetrate one another, are not always perfectly continuous throughout the substance of the stem-joints. For both in optical and in transverse sections of decalcified stems empty spaces are often visible, especially in the immediate neighbourhood of the central axis. Five of these spaces appear in some of my transverse sections of the lower stem-joints of *Bathycrinus* (Pl. VIIa. fig. 2, *rs*). They are radially disposed, being situated immediately outside the five peripheral vessels of the central axis (*ch'*), which they may not greatly exceed in size. Both spaces and vessels may contain larger or smaller masses of pigment granules (*p*). The walls of the former are less well-defined than those of the latter, but are distinctly sharper than the outlines of the spaces in the organic plexus forming the remainder of the stem-joint.

It sometimes happens in the lower part of the stem that one of these spaces may increase very greatly in size, and so displace the central axis from its median position; or the space may approach quite near to the surface of the joint. They are much more irregular in the lower part of the stem than in the uppermost elongated joints, where they are also of larger relative size (Pl. VIIa. fig. 1, *rs*); and they appear to communicate with one another from joint to joint, through the elongated oval opening of the central canal (Pl. VIIa. fig. 7). But there is nothing to be seen of them in the discoidal joints at the upper part of the stem, which are continuously traversed by closely set ligamentous fibres (Pl. VIIb. fig. 1). The best preparations that I have been able to obtain illustrative of this point have been from the stem of *Bathycrinus*; but I have also seen these spaces, though not so well, in *Rhizocrinus*. The former genus (or at any rate *Bathycrinus aldrichianus*) is remarkable for the abundance of delicate fibrils which may be seen proceeding outwards from the central fibrillar axis of the stem, the nervous nature of which is gradually coming to be recognised. Some of the larger of these fibrils are shown in optical section in Pl. VIIa. fig. 1, *ca'*. But a much larger number of smaller ones may be seen with a high power. They leave the central axis in a more or less transverse direction, and form an open plexus, immediately beneath the external surface of the stem. This is most distinctly seen over the radial spaces, where the decalcified stem is, of course, more transparent than elsewhere. It is noteworthy that the arms of *Bathycrinus aldrichianus*, like the stem, are also remarkable for the large number of branches which proceed outwards from their axial cords (Pl. VIIb. figs. 6, 7; Pl. VIIIa. figs. 4, 5—*a'*). The corresponding branches in the stem of *Pentacrinus* have been already noticed (*ante*, p. 23).

C. Hyocrinidæ.

The stem of *Hyocrinus* is one of considerable interest, because it is the only recent Crinoid in which the terminal faces of the stem-joints are of the same nature as those of