

the Apiocrinidæ and of so many of the Palæocrinoids. The applied surfaces of the cylindrical joints, forming the lowest portion of the stem with which we are acquainted, were described by Sir Wyville Thomson¹ as "being marked with a pattern of radiating grooves and ridges." There appears, however, to be a good deal of variation in this respect; for, while some of the joint-faces have the radiating pattern very well developed, others are perfectly plain (Pl. Vc. fig. 4), and others have only slight indications of the striation. But the radiating striæ never "resemble minute pores penetrating the walls," as stated by Wachsmuth and Springer,² of the similarly marked joint-faces in the Palæocrinoids.

The stem of *Hyocrinus* is much more rigid than that of the Bourgueticrinidæ. The short cylindrical joints are united by uniformly disposed ligaments (Pl. Vc. fig. 5, *ls*), the fibres of which are all of equal length and not longest in the centre as in the oldest parts of the stem of *Bathycrinus* and *Rhizocrinus*. The ligamentous fibres at each end of the joint extend into its substance for about one-fifth of its length, so that the calcareous tissue is closer towards the ends than in the median parts of the joints. These contain radial spaces (Pl. Vc. fig. 5, *rs*) of the same nature as those just described in the Bourgueticrinidæ (Pl. VIIa. figs. 1, 2, *rs*).

So far as I can make out from the only two fragments of stem which have reached me, measuring 70 and 85 mm. respectively, there are a large number of discoidal joints at the top of the stem (Pl. VI. figs. 1-3). Their thickness gradually increases from above downwards, until they are about half as long again as wide. The length then diminishes again and the width increases, rising in one example from 1 mm. to nearly 1.5 mm. within twelve joints. The lower joints thus become more discoidal again, like those some little way below the calyx. What they were in the stem-fragment, 170 mm. long, which is mentioned by Sir Wyville Thomson, I have no means of knowing. Neither are we acquainted with the nature of the actual base of attachment.

¹ *Journ. Linn. Soc. Lond. (Zool.)*, vol. xiii. p. 52, 1878.

² *Revision*, part i. p. 14.