

possibility of their becoming attached to floating timber does not seem so very distant after all. They may have been attached above by a slightly spreading base as on the modern telegraph cables; or, on the other hand, they may have been drifted in large numbers by the currents after detaching themselves from their original base of attachment.

Occupying the innermost part of the stem of a Pentacrinite, and lodged within its central canal, is its internal vascular axis (Pl. XXIV. figs. 1-5; Pl. LXII.). This consists of five peripheral vessels arranged around a central one. The former (Pl. XXIV. figs. 2-5; Pl. LVIII. fig. 3—*ch'*) are downward extensions from the chambers of the quinquelocular organ within the calyx (Pl. XXIV. figs. 6-8; Pl. LVIII. figs. 1-3—*ch*; Pl. LXII.); while the latter (Pl. XXIV. figs. 2-5, *v.*) is similarly connected with the axial vessel or vessels of the chambered organ (Pl. XXIV. fig. 6; Pl. LVIII. figs. 1-3—*v.*; Pl. LXII.). This central vessel does not increase in size at the nodes, where the peripheral vessels expand considerably, so as to form a miniature chambered organ (Pl. XXIV. figs. 3, 4, *ch.n.*); and each chamber gives off one cirrus-vessel (fig. 4, *cv.*). The fibrillar sheath around the chambered organ in the calyx (Pl. XXIV. figs. 6, 7; Pl. LVIII. fig. 1—*ca*; Pl. LXII.) is continued down the stem, around its vascular axis (Pl. XXIV. figs. 1-5, *ca*; Pl. LVIII. fig. 3; Pl. LXII.). It is sometimes closely surrounded by a more or less complete ring of pigment masses, similar to those which occur in the surrounding tissue (Pl. XXIV. figs. 2, 5, *p.*); but in other parts of the same stem these are absent in the immediate neighbourhood of the central axis (figs. 3, 4). Radiating extensions of the latter are frequently to be seen (fig. 1. fig. 2, *ca'*). They proceed outwards into the organic basis of the skeleton, and then become lost, though they probably reach the epidermis, like the similar branches from the axial cords of the arms and pinnules, to which a nervous nature has long been attributed.

B. BOURGUETICRINIDÆ.

The type of stem which occurs in this family differs in many respects from that characteristic of the Pentacrinidæ. The joints are very variable in their relative proportions, instead of being uniformly discoidal; they never form syzygial unions, but are freely movable upon one another, and are connected by successive pairs of ligamentous bundles instead of being strung, as it were, upon five tendons of variable length.

In the only two recent genera which belong to this family, *Bathycrinus* and *Rhizocrinus*, one or more of the young upper stem-joints are simple circular disks, with little or no markings of any kind upon their terminal faces (Pl. VII. figs. 1-3, 11; Pl. VIIa. fig. 3-6; Pl. VIIIa. fig. 1; Pl. IX. figs. 1-3; Pl. X. figs. 2, 9, 10; Pl. LIII. figs. 7, 8). But lower down the stem the joints become first cuboidal and then elongated, so that their length may be two or three times their diameter (Pl. VII. figs. 1, 10; Pl. VIIIa. figs. 2, 3; Pl. IX. figs. 1, 3; Pl. LIII. figs. 7, 8). The younger of these elongated joints are simply cylindrical; but the older ones are more dice-box shaped with