more or less obliterated. But there can, I think, be no question that in *Antedon perforata*, *Antedon rugosa*, *Antedon striata*, and other species from the English Chalk, together with some foreign species like *Antedon tourtiæ*, *Antedon semiglobosa*, and *Antedon retzii*, the inferior surface of the centro-dorsal was marked during life by a large stellate opening which was considerably more than would be necessary for the simple downward passage of the neuro-vascular axis of the stem. It seems to me very probable, as I have explained elsewhere,[1] that the peripheral parts of this opening, which are radially situated, may have given passage to tubular extensions of the body-cavity into the stem, such as existed in *Barycrinus*, *Cupressocrinus*, and in other Palæocrinoids. An indirect confirmation of this view is afforded by the characters of the stem in the Bourgueticrinidæ, which resembles that of the young *Comatula* in all essential points. The stem-joints of this family contain a set of five radial spaces which communicate with one another from joint to joint, and probably also through the top of the stem with the body-cavity within the calyx. The presence of these same radial spaces in the stems of fossil Comatulæ would account for the perforation of the lower surface of the centro-dorsal, which would have effected the communication between the portions of the body-cavity derived from the right peritoneal sac, that lie in the stem and in the calyx respectively. In the ordinary species of *Antedon* the calycular portion of the cœlom is much broken up by the rosette, and by the calcareous network which rests above it and occupies the central funnel of the radial pentagon (Pl. IV. fig. 3*b*); but, as I have shown elsewhere,[2] there are five median grooves on the ventral surface of the radials which extend outwards in a similar position over the skeleton of the rays and arms, and lodge the lowest portions of their cœliac canals. They are more distinct in some species than in others, but are well shown in *Antedon carinata* (Pl. III. figs. 1*d*, 3*a*), *Antedon disciformis* (Pl. IV. fig. 2*b*), and in *Actinometra lineata* (Pl. V. figs. 2*a*, 2*c*). When these grooves pass from the ventral to the inner faces of the radials and descend into the central funnel, they become closed into canals by the union of their edges with those of the spout-like radial processes of the rosette. These canals, which I have called the axial radial canals, are therefore the proximal ends of the five cœliac canals of the arms and their extensions into the pinnules. As a general rule they become closed up by calcareous tissue, and so do not reach the dorsal surface of the radial pentagon, which presents no real openings except the central one occupied by the rosette (Pl. I. fig. 8*c*). The five radial and five interradial processes of this structure are separated by passages which lodge the paired branches of the five primary cords proceeding from the nervous envelope of the chambered organ. These ten openings are well seen in Pl. I. figs. 6*c*, 8*c*; Pl. III. figs. 4*c*, 5*b*; and also in Pl. V. figs. 1*c*, 2*c*, 2*e*, 5*d*, 5*e*, but in *Antedon quinquecostata* and *Antedon disciformis* there are five additional openings on the lower surface of the

[1] On some New Cretaceous Comatulæ, *Quart. Journ. Geol. Soc.*, 1880, vol. xxxvi. pp. 556, 557.
[2] *Trans. Linn. Soc. Lond.* (Zool.), 1879, ser. 2, vol. ii. pp. 77, 78.