If his first admission be correct, as I believe it to be, one would not of course expect to find a subtegminal ambulacral skeleton in *Platycrinus*.[1]

There is some point on the actinal side of every Crinoid where the food-grooves leave the oral system covering up the peristome in which they originate, and are only closed by the covering plates at their sides.

In the recent *Hyocrinus* this closure takes place on the disk, where the food-grooves come out from under the oral pyramid (Pl. VI. figs. 1–4). In *Symbathocrinus* the oral pyramid was closed by the orocentral plate, and not open as in *Hyocrinus;* while the disk must have been even smaller than in that type, as the orals rest directly on the radials, so that the ambulacra of the arms which were protected by covering plates, commence directly from the sides of the oral pyramid almost as in *Thaumatocrinus* (Pl. LVI. fig. 5). The Bolland *Platycrinus* which was figured by Müller is essentially in the same condition as *Symbathocrinus*, the orals (apical dome plates) resting directly against the plates of the abactinal side, in this case the calyx-interradials; while the oral or actinal system is increased by the development of the radial dome plates corresponding to those in the calyx, which rest directly over the arm-openings and are followed by the ambulacral plates of the free rays.

If the orals of *Thaumatocrinus* formed a closed pyramid resting directly on the interradials, as it must in earlier stages of growth; and if this pyramid were further extended at its base by the development of radial plates in the actinal system, then the ambulacra would start from the periphery of these plates just as the alternating plates of the free rays do in *Platycrinus*.

In other Platycrinidæ the oral system seems to have been still larger, having secondary and tertiary dome-radials; but sooner or later it came into contact with the alternating series of plates which I take to be the skeleton of closed ambulacra, that perhaps only opened to the exterior at the origins of the arms from the free rays. There was a membranous disk, the radial regions of which were traversed by the ciliated food-grooves beneath the ambulacral skeleton above; while the interpalmar regions supported the interradial plates of the vault. Both the ambulacral skeleton and the interradial

[1] By this I mean distinct covering plates such as are found beneath the radial dome plates of the Actinocrinidæ. There must, of course, have been a "tubular passage beneath the vault," the presence of which is indicated on the natural casts from a cherty bed in the Upper Burlington limestone, which have been recently examined by Mr. Wachsmuth. From what he has told me about these internal casts of *Platycrinus* I imagine that they show very much what he has already described in similar siliceous casts of *Actinocrinus*, viz., "elevated rounded ridges, almost like strings overlying the surface"; and his remarks upon these last (*Amer. Journ. Sci. and Arts*, vol. xiv. p. 120) seems to me to be equally applicable to the *Platycrinus*-casts. He says: "The position of the string-like ridges (in case they represent passages as I can hardly doubt) is analogous with that of the *open food-grooves* of recent Crinoids." In *Actinocrinus*, however, he not only found this evidence of passages beneath the vault which lodged the food-grooves; but he also discovered in some specimens preserved in a different way, that these passages were protected by a distinct ambulacral skeleton, itself below the radial dome-plates. I imagine that this subtegminal skeleton, which corresponds to the ambulacral skeleton on the disk of *Pentacrinus* (Pl. XVII. fig. 6) does not exist in *Platycrinus*. For the ambulacral skeleton of this type was largely developed and external, forming the "alternate plates of the dome" (August 1884).