Pentacrinoid; while the apical dome plates in the Cyathocrinidæ, to which reference has been made already, as covering the central opening of the summit, do not reach anything like either the size or the regularity of arrangement that is to be found in the plates which have been described by Wachsmuth under the same name in other Palæocrinoids. In the Blastoids, with the exception of *Eleacrinus*, they are generally small and irregular as in *Cyathocrinus*; but in the Platycrinidæ, Actinocrinidæ, and Rhodocrinidæ they form a group of seven plates in the centre of the vault. The central plate is surrounded by six others, four of which are of equal size, while the remaining two are smaller. They are separated by the anal tube, and correspond to a single plate, just as *Eleacrinus* has the deltoid piece on the anal side divided into two parts, which are separated by the anal opening and its supporting plate.

Professor Allman[1] pointed out long ago that many Palæocrinoids have a group of plates in the centre of the vault, which is nothing but a more or less extensive development of the simple oral system of the young *Comatula*. This pregnant suggestion refers to the seven apical dome plates of *Platycrinus* and *Actinocrinus* which correspond as I believe to the orocentral and five orals of *Haplocrinus* and *Symbathocrinus*, having been developed like them on the left larval antimer; while the rest of the vault in *Actinocrinus* is a further extension of this oral system, which is unrepresented in the Neocrinoids. Thus then, though *Platycrinus* and *Actinocrinus* are in the condition of having the tentacular vestibule and peristome permanently closed, just as in *Haplocrinus*, yet they have undergone an immense development upon this condition as a basis. The tentacular vestibule in the Pentacrinoid larva is merely the peristome concealed beneath the oral pyramid; but in *Actinocrinus* it is greatly enlarged so as to take in the whole surface of the disk; and the ambulacra passed over this surface towards the central mouth from the periphery of the disk, where they entered the dome from the arms through the well known arm-openings or ambulacral openings. These gave passage not only to the ambulacra proper or food-grooves, but also to extensions of the body-cavity, and to the radiating trunks of the nervous, blood-vascular, and water-vascular systems. All these last lay between the body-cavity and the food-grooves, and converged towards their respective circum-oral centres. The upper surface of internal casts of the vault of *Actinocrinus* is marked by bifurcating ridges which indicate the position of the food-grooves radiating from a central peristome, just as in the disk of a recent *Antedon*, as has been pointed out by Wachsmuth.[2] Traces of these ambulacra are often found in the interior of the vault. In many cases they were covered in by a double row of alternating plates just like those of the arms, with which they were continuous at the arm-openings. They were floored by a double row of plates, and so formed tunnels beneath the vault, but closed independently of it by the covering plates on their upper surface.

[1] On a Prebrachial stage in the development of Comatula, *Trans. Roy. Soc. Edin.*, 1863, vol. xxiii. pp. 245–251.
[2] *Amer. Journ. Sci. and Arts*, vol. xiv. p. 119.