

fig. 7a), a character which presents itself in *Antedon carinata* (Pl. III. fig. 1a) and in *Antedon macronema* (Pl. IV. fig. 3a), and is more especially distinctive of the genus *Actinometra*, in which the muscle-plates, well marked in *Eudiocrinus*, are very much reduced in size (Pl. V. figs. 1-5, b).

The special peculiarity of the calyx in *Eudiocrinus semperi*, however, is the way in which the muscle-plates stand up above the sides of the radials, owing to their edges being strongly folded in towards the central articular ridge which separates them (Pl. III. figs. 7a, 7c). In many species of *Antedon* the articular facets of adjacent radials are in close contact along the whole length of their sides, as for example in *Antedon eschrichti* (Pl. I. fig. 8a), *Antedon basicurva* (Pl. II. fig. 2a), and *Antedon breviradia* (Pl. III. fig. 4b). But in other cases the ventral edges of the muscle-plates are more or less folded outwards from the centre of the calyx, so that its interradial angles are marked by five notches, which lie at the upper ends of the sutures between the radials as in *Antedon antarctica* (Pl. I. figs. 6a, 6b), *Antedon incisa* and *Antedon angusticalyx* (Pl. II. figs. 1a, 1d, 4a, 4d), the young *Antedon breviradia* and *Antedon quinquecostata* (Pl. III. figs. 5a, 5c, 6c, 6d). But in *Eudiocrinus semperi* this notch is continued down to the dorsal surface of the radials as a wide groove between the everted muscle-plates of every two adjacent radials (Pl. III. figs. 7a, 7c); so that in a dorsal view of the calyx (Pl. III. fig. 7b) its interradial angles are not sharp but deeply incised. An indication of the same character appears in *Antedon quinquecostata* (Pl. III. fig. 6b); but on the other hand the young calyx of *Antedon breviradia*, which has the ventral edges of its muscle-plates strongly folded outwards (Pl. III. figs. 5a, 5c), presents a very sharply pentagonal outline in dorsal view (Pl. III. fig. 5b). The same is the case in *Antedon carinata*, which has rather markedly everted muscle-plates (Pl. III. figs. 1a, 1c, 1d); while on the other hand *Antedon incisa*, in which this latter character is less evident, has slight notches at the interradial angles of the dorsal surface of the radials (Pl. II. figs. 1a, 1c, 1d). The *Eudiocrinus*-calyx, therefore, presents no characters which do not occur in some one or other of the many species of *Antedon*; but they are all considerably exaggerated, and are combined together in a somewhat unusual manner.

The interradial sutures on the dorsal surface of the radials are marked by slight grooves, and there are corresponding grooves on the upper face of the centro-dorsal. But they do not appear to have been occupied by any tertiary basals in the form of a star (Pl. III. fig. 7b). The rosette is tolerably distinct, with a large central opening and well marked radial spouts. But the interradial processes are scarcely visible, so that there appear to be only five openings, one at the inner end of each interradial suture (Pl. III. fig. 7b).

The calyx of the fossil species of *Eudiocrinus* (*Eudiocrinus hyselyi*) like that of nearly all the secondary species of *Antedon* and *Actinometra*, is of a very generalised type; and, but for the discovery of specimens with the arms attached, it would have