rays of the basal star, the relations of which are described at length in my memoir on *Actinometra*.[1] At the time this was written (1877) I had only been able to dissect the calyx in a comparatively small number of Comatulæ; but a detailed examination of the large amount of duplicate material obtained by the Challenger has shown that a basal star is nearly always present both in *Antedon* and in *Actinometra*, so that species like *Antedon tenella*, *Antedon hageni*, *Antedon phalangium*, and *Antedon rosacea*, in which it is not developed, are the exception rather than the rule; while there may be traces of it in some varieties of *Antedon eschrichti*, though not in others.

It occasionally happens that the rays of the basal star, or, more shortly, "the basal rays," appear on the exterior of the calyx between the centro-dorsal and the first radials. But there is no constancy about this character, even in individual species. Thus, for example, a basal ray is visible in the dissected calyx of *Antedon antarctica* shown on Pl. I. fig. 6*a*, but there is no trace of it in either of the three specimens figured on Pl. XXV. figs. 10–12. The basal rays sometimes appear externally beneath the alternate radials of the ten-rayed *Promachocrinus* (Pl. I. figs. 1*a*, 1*c*), but this is not always the case. I have also seen them in some individuals of *Antedon carinata*, though not in that shown on Pl. III. fig. 1*a*. They are generally to be seen in *Antedon macronema* (Pl. IV. fig. 3*a*; Pl. XXXVIII. fig. 5), in *Antedon longicirra* (Pl. XVII.), and also in *Actinometra pulchella* (Pl. IV. fig. 5*c*), and *Actinometra stelligera* (Pl. V. fig. 5*b*); while there are other species, such as *Actinometra maculata* and *Actinometra lineata*, in which they are only occasionally visible.

I have shown elsewhere that the basal rays have an entirely different origin from either the primary or the secondary portions of the rosette. They are tertiary structures formed by calcification in the synostosis between centro-dorsal and radials. Sometimes, however, they are very substantial structures, and each of them becomes so firmly united with an interradial portion of the rosette that it is often possible to get the entire complex structure thus formed to break up into five separate parts, each representing one basal plate. The results of this operation are seen in *Antedon antarctica* (Pl. I. fig. 7), *Antedon carinata* (Pl. III. figs. 1*c*, 2*a*, 2*b*, 3*a*, 3*b*), *Actinometra meridionalis*, *Actinometra pulchella*, and *Actinometra paucicirra* (Pl. IV. figs. 4*b*, 5*a*, 6*b*). Each of the compound basals so isolated is a somewhat elaborate structure. The basal ray may be long and narrow as in *Actinometra meridionalis* (Pl. IV. fig. 4*b*), or short and stout as in *Antedon antarctica* (Pl. I. fig. 7) and *Actinometra paucicirra* (Pl. IV. fig. 6*b*.)

At the proximal end of the basal ray are two openings, one on each side, which give passage to the secondary basal cords; and they are separated, when seen from the dorsal side, by the interradial process of the rosette with portions of the basal bridge (Pl. IV. figs. 4*b*, 6*b*, β). The lateral boundaries of these openings are formed by the halves of two of the radial spouts of the rosette which extend outwards from the base of the interradial

[1] *Trans. Linn. Soc. Lond.* (Zool.), 1879, ser. 2, vol. ii. pp. 95–100.