

that the genus *Phanogenia* was instituted by Lovén¹ for the reception of species presenting these characters.

It was pointed out in my preliminary report,² however, that the stellate appearance of the centro-dorsal in *Phanogenia* (Pl. LVII. fig. 1) "appears to be one of the concluding stages of a long series of changes in the shape and relations of the centro-dorsal, which do not commence until some time after the loss of the stem and the entry upon the free state of existence." The earlier stages of these modifications are well shown in a series of specimens of *Actinometra paucicirra*, which is very abundant at Cape York (Pl. LIV.). In the youngest individual of the series the centro-dorsal is a thin and slightly convex circular disc, about 2 mm. in diameter, which bears five pairs of cirri, one pair opposite each interradius. They reach 6 mm. in length and consist of about fifteen joints, which are tolerably mature in their general characters (Pl. LIV. fig. 10); the next stage is a slightly older individual in which all the cirri have fallen away from the centro-dorsal and the obliteration of their sockets has commenced (fig. 9). This process has been carried further in the larger and more distinctly pentagonal centro-dorsal shown in fig. 8, though it has gone on rather unequally, some of the sockets being much more obliterated than others.

Scarcely any trace of sockets can be made out in the original of fig. 5, but the centro-dorsal is a thin pentagonal disc with the appearance of processes at some of its angles, which are more probably, however, the ends of the basal rays. Its surface is much more nearly flush with that of the radials in the full-grown specimen shown in fig. 2, still, however, retaining its pentagonal shape. Fig. 1 shows another modification, each angle of the pentagon being marked by a more or less deeply impressed pit in which the basal ray is sometimes visible. The form represented in fig. 3 has a more rounded centro-dorsal, which is flush with the radials at its edges, and shows the basal rays at its angles; while there are indications of pits at the distal angles of the sutures between the first radials. The sides of the centro-dorsal in this specimen are slightly concave, and this character is much more distinct in figs. 6, 7, so that the shape becomes markedly stellate. In the former the centro-dorsal (as viewed from the dorsal side) is above the level of the radial pentagon; but in the latter it is relatively much lower, so that its surface is flush with that of the radials, the proximal edges of which are convex in correspondence with the stellate outline of the centro-dorsal. Fig. 4 shows a similar case in which the centro-dorsal is pentagonal. The effect of its complete withdrawal into the radial pentagon is to make it entirely invisible in a side view of the calyx, as seen in Pl. V. fig. 3*b*; while the dorsal surface of the united radials becomes very deeply hollowed for its reception (Pl. V. fig. 3*a*) instead of being slightly convex, as is more usually the case (Pl. V. figs. 1*a*, 5*d*).

¹ *Phanogenia*, ett hittills okändt släkte af fria Crinoideer, *Öfversigt k. Vetensk.-Akad. Förhandl.*, 1866, p. 231.

² *Proc. Roy. Soc.*, 1879, vol. xxviii, p. 390.