Actinometra, both ten-armed and multibrachiate, *e.g.*, *Actinometra pectinata*, *Actinometra paucicirra* and *Actinometra typica* (Pl. LIII. fig. 15; Pl. LIV. figs. 1, 2; Pl. LVII. fig. 1).

I do not know, however, of any ten-armed *Antedon* belonging to this group, and the three species immediately to be described, in which the rays divide three or four times, present one very exceptional feature in their organisation. It is a very general rule among Neocrinoids that the mode of union of the first and second joints beyond the radial and all subsequent axillaries is the same as that between the two outer radials.[1] But this rule does not always hold good in the case of syzygial unions, though it is true amongst other species, of *Pentacrinus wyville-thomsoni* and *Pentacrinus alternicirrus*, of *Actinometra difficilis* and *Actinometra paucicirra* (Pl. LII. fig. 2; Pl. LIV. figs. 1, 2), in all of which the two outer radials, the two distichals and the first two brachials are respectively united by syzygy.

In *Actinometra multibrachiata* and in *Actinometra typica* there are three joints in the distichal series, the first two articulated and the third a syzygy. But in the numerous remaining arm-divisions there are only two joints which are united by syzygy like the two outer radials (Pl. LVI. fig. 2; Pl. LVII. fig. 1).

The three species of *Antedon* now to be described are, however, still more irregular; for in neither distichal, palmar, nor brachial series are the first two joints united by syzygy, as is the case with the two outer radials. This latter character seems to have presented itself in three Jurassic species of *Antedon*. Quenstedt[2] has described the two outer radials of *Solanocrinus* (*Antedon*) *costatus* as united by syzygy, and his description is borne out by his figures, one of which shows a first brachial of such a size that I feel tolerably certain of its being really a syzygial joint as in *Actinometra strata* and *Actinometra pectinata* (Pl. LIII. figs. 2, 15). Walther's recent description of *Solanocrinus costatus*[3] contains the passage "Radiale II. mit Radiale III. verschmolzen, doch durch eine Nahtlinie getrennt;" and it is odd that he did not follow Quenstedt in describing the union as a syzygial one. The large size and the pentagonal shape of the radial axillaries in his *Solanocrinus imperialis* seem to me to indicate clearly that these are syzygial joints; and I am very strongly inclined to believe that the large joints which he describes as "Axillaria" are really compound joints, consisting of the first and second distichals united by syzygy, as in *Actinometra paucicirra* (Pl. LIV. figs. 1, 2). These pieces are more distinctly separate in the five remaining distichal series of his specimen, while in some cases at any rate, the large first brachials would appear to be syzygial joints. The same may be said of Walther's single specimen of *Solanocrinus gracilis*,[4] of which he remarks as a possibility that the apparently simple second or axillary radial "als verschmolzenes Radiale II. + Radiale III. aufgefasst werden könnte."

[1] See Part I. p. 49.
[2] Encriniden, p. 172, Tab. 96, figs. 26, 28.
[3] *Op. cit.*, p. 172.
[4] *Ibid.*, p. 174.