

seems scarcely possible, though the development of a new visceral mass inside the calyx is not uncommon.

As in *Pentacrinus asterius*, there is a considerable variation in the development of the basals. In the Copenhagen specimens described by Lütken, and in some of those which I have examined, they are pentagonal in outline and form a closed ring separating the radials from the top stem-joint. In other forms they are more prominent and rhomboidal or triangular in shape, but only just meeting one another in the re-entering angles of the calyx (Pl. XIV.; Pl. XV. fig. 2); while in Sir Rawson Rawson's specimen they are small and inconspicuous (Pl. XV. fig. 1), as in some varieties of *Pentacrinus decorus* (Pl. XXXVI.).

The number of arms may vary from thirty-five to forty-five, some individuals occasionally having ten arms to the ray. Generally, though not invariably, the axillaries are limited to the outer arm of each pair in the manner already described; but I have not seen any individual in which the six- or eight-armed arrangement is constant on every ray.

As there are very few joints separating the axillaries, there is comparatively little room for the arms, the bases of which are therefore more or less flattened laterally, both in the outer and in the inner parts of the rays. In fact, wherever an axillary occurs the two arms which it bears have their inner faces flattened, while the outer sides of the rays are flattened continuously from the second radials to as far as some six or eight joints beyond the fifth axillary.

This feature is especially marked in two fine specimens from the "Blake" collection, which are also distinguished by the shape of their lower pinnule-joints. One is from Martinique and the other from Barbados. The calyx and arm of the former are represented on Pl. XV. figs. 2, 3. The outer edges of the joints from the second radial onward are produced somewhat sharply upwards, and fit closely against those of adjacent joints. This is less prominent in the Barbados specimen, which shows an occasional tendency towards carination of the arm-bases. The other form is remarkable for the abnormal condition of one of its rays, as shown in Pl. XV. fig. 2. The third radial is articulated to the second instead of being united to it by syzygy. But it is itself a syzygial joint; so that there are primitively four radials, a character which indicates a tendency to variation in the direction of *Metacrinus* with its five or eight primitive radials (Pl. XXXIX. fig. 1; Pl. XLVI.). The pinnules of these two individuals are also different from those of other examples of the type. They are generally composed of moderately broad, flattened joints, the lowest of which are somewhat stouter than their successors. But in the two "Blake" specimens the pinnules are less flattened than usual, and the lower joints markedly trihedral in form, recalling, though in a less degree, the prismatic shape of the pinnules, which is characteristic of *Metacrinus* (Pl. XXXIX. fig. 1; Pl. XLIII. fig. 4).

The plating of the disk of *Pentacrinus mülleri* (Pl. XVII. fig. 10), like that of