type but the slender *Pentacrinus decorus*. But as in so many other species it was liable to fracture just below a node, so that the individual led a semi-independent existence; for I have one stem-fragment in which the lowest joint is decidedly worn and its central canal closed up by a small round boss which projects above the remaining surface of the joint.

The length of the internodes in *Pentacrinus asterius* distinguishes it at once from *Pentacrinus mülleri*, its nearest ally, which has similar long and stout cirri; while the infra-nodal joint is usually somewhat grooved to receive the cirrus-bases. This is but rarely the case in *Pentacrinus asterius*, and then only to the slightest possible extent, so that the cirrus-socket is practically limited to the articular facet, without any extension either upwards or downwards. The stem of *Pentacrinus asterius* is thus very readily identified, and the same may be said of the arms, which is rarely the case with the other species of the genus, unless the ventral groove be examined. For the peculiar features of the pinnules are very characteristic. They are well shown in Miller's figure[1] and likewise in those given by Müller,[2] who specially referred to the projections from the ends of the pinnule-joints. The great thickness of the basal joints in the distichal and palmar pinnules, especially the former, is a somewhat unusual character in a *Pentacrinus*. A trace of it may be seen in some forms of *Pentacrinus mülleri;* but in most species of the genus the lower joints of the first pinnules are laterally compressed, and lie close against the arm. They thus present a great contrast to the almost cubical or prismatic basal joints of the first pinnules in *Metacrinus* (Pl. XLIII. figs. 2, 4). The preceding description differs in one important respect from those given by Müller and Lütken. The former author spoke of the union between the second and third radials as an articulation, but was somewhat obscure about its nature. He was not able to separate the two joints, but seems to have inferred that they were united by a bifascial articulation such as he found in *Antedon rosacea*.[3] While, however, he stated expressly that the latter type has no muscles between the second and axillary radials, he described and figured muscles as existing in this position in *Pentacrinus caput-Medusæ*.[4] This led Lütken to state[5] that the existence of an articulation between the two outer radials of *Pentacrinus asterius* was an important character separating it from *Pentacrinus mülleri*, which has these joints united by syzygy. Neither he nor Müller, however, had ever actually separated the joints, specimens being then too valuable, or the real state of the case would have become evident at once. This was first discovered by Sir Wyville Thomson,[6] who pointed out that there is really a syzygy between the two outer radials of *Pentacrinus asterius*. In this respect, therefore, this species resembles *Pentacrinus mülleri*, instead of differing from it as was supposed by Lütken. But unfortunately Sir Wyville totally misconceived the real character of Oersted's species, and confounded it with the one previously described by

[1] *Op. cit.*, p. 51, pl. ii. fig. 5.
[2] Bau des Pentacrinus, p. 43, Taf. ii., iii.
[3] *Ibid.*, p. 26, Taf. ii. fig. 12.
[4] *Ibid.*, p. 30, Taf. ii. fig. 8.
[5] Om Vestindiens Pentacriner, *loc. cit*, p. 202.
[6] *Proc. Roy. Soc. Edin.*, vol. vii., 1872, p. 766.