

statement concerning *Pentacrinus asterius* and *Pentacrinus mülleri*.¹ He likewise repeated most of his original description of *Pentacrinus decorus* as a diagnosis of *Pentacrinus mülleri*, with a reference under the latter name to the specimen which he had before him when describing *Pentacrinus decorus*. He stated that the two outer radials of *Pentacrinus asterius* were united by syzygy, and further added that "the arrangement of the joints and the syzygies in the cup is the same in *Pentacrinus mülleri* as in *Pentacrinus asteria*, only the syzygy between the second radial and the radial axillary is not so complete." This passage obviously refers to a ligamentous articulation as distinguished from a true syzygy on the one hand, and from a muscular joint on the other; and it is by no means in accordance with Lütken's very positive statements as to the presence of a true syzygy between the two outer radials of *Pentacrinus mülleri*. Neither does Sir Wyville's description of the nodes as occurring about every twelfth joint agree with Lütken's diagnosis, which records only four to ten internodal joints in *Pentacrinus mülleri*. As a matter of fact there are eleven or twelve internodal joints in *Pentacrinus decorus*, and there is no syzygy at all between the two outer radials, but only a bifascial articulation such as occurs in the majority of the Neocrinoidea, and has often been wrongly spoken of as a syzygy, though clearly distinguished from it by Müller. This is shown in figs. 3 and 6 on Pl. XXXIV., a copy of which was lettered "*Pentacrinus mülleri*, Oersted," by Sir Wyville Thomson. I cannot but think, however, that if he had lived to work out the "Blake" collection more fully than he was able to do before his health gave way, he would have retained his original views as to the distinctness of his *Pentacrinus decorus* from *Pentacrinus mülleri*, Oersted. The result of this confusion was that the numerous specimens of *Pentacrinus decorus* which were dredged by the "Bibb" and the "Blake" in the Gulf Stream and in the Caribbean Sea were referred to *Pentacrinus mülleri* by Pourtalès and Agassiz.² The two species have really no sort of resemblance to one another, differing in all the characters of the stem, the cirri, the calyx, and the arms.

The foregoing description is based upon an examination of four specimens from the "Blake" collection, two purchased by Sir Wyville Thomson from Mr. Damon, one in the collection of Sir Rawson Rawson, and lastly that in the Museum of the Geological Society of London, which is mentioned by both Miller and Müller as *Pentacrinus caput-Medusæ*.

Pentacrinus mülleri is readily distinguished from *Pentacrinus asterius*, which is its nearest ally, by the shortness of the internodes and the modification of the hypozygal joints, which, however, is far less marked than in *Pentacrinus decorus*. The basals generally form a complete ring; while the branching of the arms is much more regular

¹ *Proc. Roy. Soc. Edin.*, vol. vii. p. 766; and *The Depths of the Sea*, pp. 434, 435; see also *The Atlantic*, vol. ii. p. 126.

² *Bull. Mus. Comp. Zoöl.*, vol. i. p. 367; *Ibid.*, vol. v. pp. 56 and 214; *Ibid.*, vol. vi. p. 296.