

Wyville in 1864,<sup>1</sup> the type being a new West Indian species which he designated as *Pentacrinus* (*Neocrinus*) *decorus*. The differences between this type and *Pentacrinus asterius* (*caput-Medusæ*) are undoubtedly considerable, as I have expressed by separating the two as far as possible in my arrangement of the species (see p. 299). But they are rather physiological than morphological in character, and one or two errors of observation have caused them to appear greater than they really are. There are syzygies below the nodal joints of *Pentacrinus asterius* (Pl. XIII. figs. 3, 5, 8), just as in *Pentacrinus decorus* (Pl. XXXVI.; Pl. XXXVII. figs. 5-8, 12, 19, 21); so that although the stem of the former species is very strong and rigid, it can hardly be said to be distinguished by the "absence of all provision for its rupture," such as Sir Wyville<sup>2</sup> described in the more slender stem of *Pentacrinus decorus*.

The supposed difference between the disks of *Pentacrinus asterius* and *Pentacrinus decorus*, which was founded on a belief in the presence of tooth-like oral plates in the former genus, is also due to error, owing to the unsatisfactory condition of Michelin's specimen, which was said to possess these embryonic structures. Sir Wyville recognised this subsequently when he obtained a spirit specimen of *Pentacrinus asterius*, the disk of which he described as follows:<sup>3</sup>—"The perisome of the disk is covered with irregular calcareous plates, and at the free inner angles of the interradial spaces these plates become closer, and form a solid kind of boss; but there are no distinct oral plates." On the other hand, the disk of *Pentacrinus decorus*<sup>4</sup> (Pl. XXXIV. fig. 2) could hardly be called "comparatively unprotected" as distinguished from that of *Pentacrinus asterius*, which Sir Wyville described on the previous page as "uniformly defended and plated with calcareous pavement."

In the nature of the arms, however, there is a considerable difference between the two types, as was well described by Sir Wyville. Those of *Pentacrinus asterius* are "greatly multiplied, large and strong. No syzygies, save those at the base, which can be used on an emergency, tend to diminish their strength, an arrangement essential to the full supply of food in their fixed condition." On the other hand, in *Pentacrinus decorus* the number of arms is "greatly less, and the arms are provided throughout with syzygies, an arrangement apparently suitable to its greater liability to trivial accidents in its free condition." He went on to say, "At first I had some doubt as to the propriety of making this species the type of a new subgenus, and any one of the above characters would certainly not have afforded sufficient grounds; but all these characters taken together form a remarkably compact assemblage, which places *Neocrinus* in a directly intermediate position between *Cenocrinus* and *Comatula*." Two of the principal points of difference between *Cenocrinus* and *Neocrinus* have, however, no foundation in fact, while a third is, at most, one of specific value; and the fourth, the supposed difference in the mode of

<sup>1</sup> Sea Lilies, *The Intellectual Observer*, August 1864, p. 7.    <sup>2</sup> *Ibid.*, p. 10.

<sup>3</sup> *Proc. Roy. Soc. Edin.*, vol. vii., 1872, p. 766.

<sup>4</sup> Sea Lilies, *The Intellectual Observer*, August 1864, p. 11.