

preliminary diagnosis of it, together with a similar notice of *Pentacrinus caput-Medusæ* (*asterius*), was published in the report of the meeting. Such was the rarity of these Crinoids that Oersted's discovery of a new species attracted but little attention, although an example of it from Guadeloupe had long been contained in the collection of the Geological Society of London, and had been referred by Müller to *Pentacrinus caput-Medusæ*. These facts seem to have escaped the notice of Sir Wyville Thomson, who himself described a new species (*Pentacrinus decorus*) in 1864, and spoke of it and *Pentacrinus caput-Medusæ* as the only two known living species of the Stalked Crinoids.<sup>1</sup>

Early in the next year, however, an elaborate memoir on the West Indian Pentacrinidæ was published by Dr. Lütken, which has served as the basis of most of the subsequent work on the genus. Not only did he make a careful examination of Oersted's original specimen of *Pentacrinus mülleri*, but he found that two other individuals in the Copenhagen Museum were identical with it; he was thus able both to discover some more important points of difference between *Pentacrinus mülleri* and the Linnean type, and also to work out some of the individual variations in the characters of *Pentacrinus mülleri* as defined by Oersted.

In his preliminary diagnoses of *Pentacrinus asterius* and *Pentacrinus mülleri*, Oersted had already indicated the differences in the numbers of joints composing the arm-divisions of the two species. This character was still further investigated by Lütken,<sup>2</sup> who pointed out its influence upon the external appearance of the animal. Relying chiefly upon the figures of *Pentacrinus asterius* which were given by Miller and Müller, he showed that the numbers of joints in the successive arm-divisions were respectively 5 or 6, 9 or 10, and 12. In *Pentacrinus mülleri*, on the other hand, these numbers are 2; 2-4; 3; and 3-5; and it is almost always only the two outer arms on the ray which divide at all, so that the arms of any ray with secondary axillaries would be represented by the expression 2,1; 1,2; and by 2,1,1; 1,1,2, if tertiary axillaries be present. This is a sort of indication of the inequality of the arm-divisions of *Extracrinus*, and is tolerably constant in *Pentacrinus mülleri*, though not limited to that species, for it is visible in *Pentacrinus asterius*, as detected by Quenstedt<sup>3</sup> in Miller's figure.

After the publication of Lütken's Memoir, *Pentacrinus mülleri*, Oersted, came to be recognised as a type distinct from the old *Pentacrinus asterius*. It was referred to by Sir Wyville Thomson,<sup>4</sup> together with *Pentacrinus asterius* and *Pentacrinus decorus*, so that he evidently regarded it as distinct from both of them. Later on, however, he seems to have come to the conclusion that his *Pentacrinus decorus* was identical with Oersted's species. For having previously said that *Pentacrinus asterius* and *Pentacrinus decorus* were the only two known living species of the genus, he made nearly the same

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

<sup>2</sup> Encriniden, p. 190, Tab. 97, fig. 3.

<sup>3</sup> Om Vestindiens Pentacriner, *loc. cit.*, p. 203.

<sup>4</sup> *Phil. Trans.*, vol. clv., 1865, p. 542.