

difference of position occurs in the short cirri of *Antedon carinata*, numbers of which were found by the Challenger at Bahia; while many instances of the same kind occur among the Comatulæ dredged by the Challenger in the Eastern Archipelago and by the "Blake" in the Caribbean Sea. (See also Pl. XXXIII. fig. 6, and Pl. LXX.)

I do not think therefore that Perrier is entitled to consider *Eudiocrinus atlanticus* as a specially interesting modification of the *Comatula*-type with regard to its locomotive powers, for it presents no peculiarities which do not occur in several species of *Antedon*. It is true that like other species of the genus (Pl. VI. fig. 1; Pl. VII.) it has large and powerful muscular bundles between the successive arm-joints; and from this perhaps we may draw the conclusion that it was "un habile nageur." But the last sentence of the passage quoted above, wherein *Eudiocrinus atlanticus* is contrasted with *Antedon* and *Actinometra* as regards its swimming powers and mode of life, entirely ignores all that has been written upon the subject of late years.

It is true that the muscular bundles of *Eudiocrinus*, as also those of *Atelecrinus* (Pl. VI. figs. 4, 7) and of many deep-sea Comatulæ, appear large by contrast with those of other types in which they do not appear prominently on the ventral surface of the arms, owing to their being covered by a thick and more or less opaque perisome. But when this is removed the large muscular bundles become visible, as seen in Dr. Carpenter's figure of *Antedon rosacea*.¹ The same is the case in *Antedon eschrichti*, the muscular bundles of which, when properly exposed, have at least as great a relative size as those of any *Eudiocrinus*; and if the size of the muscle-plates on the arm-joints be any criterion of the strength of the muscular bundles attached to them, there is little to choose in this respect between *Antedon eschrichti*, *Actinometra paucicirra*, and *Actinometra nobilis*.

The position assumed by the cirri, and the appearance of the muscular bundles on the ventral surface of the arms of *Eudiocrinus atlanticus*, are not therefore characters of such importance as Perrier seems to think, when he contrasts this type with "la plupart des *Antedon*." I do not see that this species, with its cirri between 15 and 20 mm. in length, is any less well adapted for fixing itself to submarine bodies, than *Antedon phalangium* and many other species of the same genus which have cirri like those of *Eudiocrinus atlanticus* (Pl. XXVIII.; Pl. XXX. figs. 4, 8; Pl. XXXIII. fig. 6). Neither do I know what authority Perrier has for his statement that most species of this genus swim but little, while implying that *Eudiocrinus atlanticus* swims a good deal. It certainly cannot be anything more than a somewhat hasty generalisation, which he could not possibly have made had he stopped to consider why the muscular bundles of *Eudiocrinus* appear so large in contrast to those of "la plupart des *Antedon*." But when he goes on to speak of the species of *Actinometra* as being those which are specially adapted to fix themselves and to swim but little, he falls into very considerable error. For, as will be shown immediately in reference to another part of his description of *Eudiocrinus*, he has not

¹ *Phil. Trans.*, 1866, pl. xxxiv. fig. 2.