

Although the principal diagnostic character on which Perrier established *Eudiocrinus atlanticus* thus turns out to be due to an erroneous method of nomenclature, he mentions a subsidiary one which merits more attention. For he finds that "L'*E. atlanticus* se distingue également de ces dernières espèces par le nombre et la grandeur des organes, si répandus chez les Crinoïdes, nommés *corps sphériques* ou *sacculés*. Les sacculés manquent aux *E. japonicus*, et *E. Semperi*; ils sont petits et rares chez l'*E. varians*."<sup>1</sup> In this respect, therefore, the Atlantic species is sharply distinguished from both *Eudiocrinus semperi* and *Eudiocrinus japonicus*, which resemble it most closely in the structure of the skeleton; while they have over twenty-five cirrus-joints, of which there are only fifteen in *Eudiocrinus atlanticus*.

The mutual relations of the five species of *Eudiocrinus* may, therefore, be expressed as follows:—

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| I. First two brachials united by syzygy. First pinnule on the second brachial, | . . . . . | 1. <i>indivisus</i> , Semper, sp. |
| II. First two brachials united by a bifascial articulation.                    |           |                                   |
| A. First pinnule on the second brachial,                                       | . . . . . | 2. <i>varians</i> , n. sp.        |
| B. First pinnule on the fourth brachial.                                       |           |                                   |
| 1. Sacculi absent. Twenty-five or more cirrus-joints.                          |           |                                   |
| a. Disk plated. First brachials nearly oblong,                                 | . . . . . | 3. <i>semperi</i> , n. sp.        |
| β. Disk naked. First brachials trapezoidal,                                    | . . . . . | 4. <i>japonicus</i> , n. sp.      |
| 2. Sacculi abundant. Fifteen cirrus-joints,                                    | . . . . . | 5. <i>atlanticus</i> , Perrier.   |

*Eudiocrinus varians*, n. sp. (Pl. VII. figs. 3-7).

1882. *Eudiocrinus varians*, P. H. Carpenter, Journ. Linn. Soc. Lond. (Zool.), 1882, vol. xvi. p. 496.

Centro-dorsal low, nearly hemispherical, bearing about twenty cirri in two rows which leave the dorsal pole free. Two forms of cirrus occur in the same individual.—(1) With two or three short basal joints, the last of which is nearly square, while the following joint is considerably longer, and the succeeding ones still more so, reaching 3 mm. in length. Terminal joints unknown. (2) Eight at least of the lower joints are quite short, few of them being longer than wide, and that but slightly so. Remainder unknown.

Radials partially visible. First brachials nearly oblong, inclined to be trapezoidal, with small lateral processes which are the edges of the muscle-plates for articulation with the radials. Second brachial also nearly oblong, with traces of a backward process into the preceding joint, a pinnule on the right and a small process on the left side. The following joints have somewhat unequal sides, with a pinnule on the shorter and a large wing-shaped process on the longer side, which ceases on the sixth, or may go on to the eighth joint. Succeeding brachials quadrate and unequal-sided, with the pinnule on the longer side. The twelfth and following joints are distinctly longer than wide. Syzygia in the fourth and eighth or ninth brachials; then an interval of two to five joints between successive syzygia.

<sup>1</sup> *Comptes rendus*, 1883, t. xcvi. No. 11, p. 726.