

which he provisionally named *Hyocrinus bethellianus*? with the following remarks:—“The last is a beautiful little thing which we dredged from a depth of 2325 fathoms at Station 223, in lat. 5° 31' N., long. 145° 13' E., in the east Pacific, with a bottom of Globigerina ooze, and a bottom-temperature of 1°·2 C. It certainly is in many respects very unlike the adult *Hyocrinus bethellianus*; but it may possibly turn out to be the young of that species. There was only one specimen.”<sup>1</sup> No reference whatever was made to this type in the description of *Hyocrinus* which was subsequently published in The Atlantic, and is substantially the same as that which appeared in the Journal of the Linnean Society. One would be inclined to conclude from this that the specimen in question was not a young *Hyocrinus* after all; for even though it was obtained in the Pacific, reference would probably have been made to it in Sir Wyville's later account of this very interesting genus. But as the specimen has totally disappeared, and has eluded all Mr. Murray's anxious search, I am naturally unable to say anything about it.

#### B. ON THE SYSTEMATIC POSITION OF HYOCRINUS.

*Hyocrinus* was established by Sir Wyville Thomson in the year 1876,<sup>2</sup> with the remark that “it presents certain general resemblances and even certain correspondences in structure which seem to associate it also with *Rhizocrinus*. There seems little doubt that *Rhizocrinus* finds its nearest known ally in the Chalk and Tertiary *Bourgueticrinus*, and that it must be referred to the neighbourhood of the Apiocrinidæ. Were it not that *Bathycrinus* and *Hyocrinus* are so evidently related to *Rhizocrinus*, the characters of the Apiocrinidæ are so obscure in the two first-named genera that one would certainly have scarcely been inclined to associate them with that group.” *Bathycrinus*, though an aberrant form, is far more closely related to *Rhizocrinus* than *Hyocrinus* is. It has the same form of stem-joint and the same absence of pinnules from the arm-bases; while the arm-joints themselves are united in pairs in a very nearly similar manner in both genera. But except in this last point, there is no resemblance between *Rhizocrinus* and *Hyocrinus*. The only known species of the latter genus was said by Sir Wyville Thomson to have “much the appearance, and in some prominent particulars it seems to have very much the structure, of the Palæozoic genus *Platycrinus*, or its subgenus *Dichocrinus*.”<sup>3</sup> In fact, Sir Wyville seems to have had considerable hesitation in referring *Hyocrinus* to the Apiocrinidæ; and it was eventually associated by Zittel along with *Plicatocrinus*, in a family Plicatocrinidæ. But the definition which he gave of the family was far from being a satisfactory one, as it stated that basals were absent, which is by no means the case in *Hyocrinus*, and also that there are long, forked arms. Since then, however, he has found that there is an axillary second radial (first brachial, Zittel) in *Plicatocrinus*, which thus

<sup>1</sup> *Journ. Linn. Soc. Lond. (Zool.)*, vol. xiii. p. 55.

<sup>2</sup> *Ibid.*, p. 48.

<sup>3</sup> *Ibid.*, p. 51.