

ends at the sixth node. This is due to the great length of the internodes in this species (Pl. XVIII, fig. 3; Pl. XIX, fig. 1).

Pentacrinus maclearanus presents exactly the opposite type of structure. There are only twelve nodes in the stem of the solitary individual obtained (Pl. XVI.). But these all occur in a stem barely 40 mm. long, as there are never more than two, and generally only one internodal joint; while the cirri cluster thickly round the stem, so that it has an appearance more like that of *Extracrinus briareus* than is commonly met with in the Pentacrinidæ. It is noteworthy that in the last-named species the stem does not seem to have reached any great length, and that it sometimes tapered downwards.¹

This peculiarity was also noticed by MM. Eudes-Deslongchamps in some stems belonging to a large colony of Pentacrinites which they discovered in the Great Oolite of Soliers, near Caen;² while it is very characteristic of *Millericrinus pratti* from the same horizon in Gloucestershire;³ and also of the Carboniferous *Woodocrinus*, certain Blastoids, and of the Silurian *Glyptocystites*, *Pleurocystites*, and other forms. The most remarkable instance of this in a fossil Crinoid, however, is that of the Lower Silurian *Glyptocrinus schafferi* of S. A. Miller,⁴ for which he has recently established the new genus *Pycnocrinus*. In one specimen found by Miller the lower part of the stem was "wound around a Crinoid column of a distinct species, almost as neat as a thread can be wound upon a spool. The column gradually tapers as it coils, until it becomes so small as to be scarcely visible to the naked eye, the larger plates of the column which give it that banded appearance, or make it resemble a string of small spools, gradually diminish, and before the column terminates it becomes as smooth as a silken thread."

Two other species from the same locality at Cincinnati, *Lichenocrinus dubius* and *Dendrocrinus navigiolum*, were also found by Miller to have tapering stems. In the case of the former he infers that "the column was free and used to direct and guide the course of the animal through the water, and perform such other functions as were performed by the columns of other floating Crinoids, except that it was never used for purposes of attachment." One must not, however, conclude at once, from the tapering condition of the stem in a fossil Crinoid, that the animal was free in its habits. In a young *Eucalyptocrinus crassus*, for example, which is figured by Hall,⁵ the stem tapers downwards very considerably, but is attached below by a spreading root.

I have found a tapering stem in certain individuals belonging to six species of recent Pentacrinidæ, but it appears to be the exception rather than the rule, and is therefore entirely devoid of any systematic value.

¹ Eocriniden, p. 271.

² Études sur les étages Jurassiques inférieurs de la Normandie, Paris, 1864, p. 232.

³ On some new or little known Jurassic Crinoids, *Quart. Journ. Geol. Soc.*, vol. xxxviii. pp. 31-33, pl. i. figs. 6-8, 10-14.

⁴ Description of four new Species and a new variety of Silurian Fossils, and remarks upon others, *Journ. Cincinnati Soc. Nat. Hist.*, vol. iii., 1880, pl. vii. fig. 3, p. 2 (of separate copy).

⁵ Twenty-eighth Annual Report of the New York State Museum of Natural History, Albany, 1879, pl. xvii. fig. 5.