

### VIII.—THE GEOGRAPHICAL AND BATHYMETRICAL DISTRIBUTION OF THE CRINOIDS.

#### A. GEOGRAPHICAL RANGE.

The geographical distribution of the Crinoids is fully as extensive as that of the other Echinoderms. Comatulæ range between the two parallels of 81° N. and 52° S., while the corresponding limits for the stalked Crinoids are 68° N. and 46° S. Some genera, such as *Actinometra* and *Pentacrinus*, occur in shallow water everywhere, or almost everywhere, within the tropics; though *Pentacrinus* has not yet been obtained in the Pacific east of long. 170° W., nor between the meridians of 5° W. and 120° E., its nearest approach to the Indian Ocean being the Moluccas. *Metacrinus*, on the other hand, has been found in the neighbourhood of Singapore; but is otherwise almost entirely limited to the tropical regions of the West Pacific, ranging, however, as far north as Japan; while *Pentacrinus wyville-thomsoni* occurs in the Atlantic as far north as lat. 45°. *Holopus*, however, has never been obtained out of the Caribbean Sea.

Of the stalked Crinoids *Rhizocrinus* has the farthest northern range (68° N.), but it has not been met with more than once (Station 122), or possibly twice (Station 323), south of the equator, and is limited to the Atlantic and the Caribbean Ocean. *Bathycrinus*, while ranging through 110° of latitude in the Atlantic and Southern Oceans, does not occur in the Pacific at all. *Antedon*, on the other hand, is cosmopolitan, five species inhabiting the Arctic Ocean, while the genus is also well represented in the Southern Ocean. It is curious, however, that so far as I am aware, there are no museum specimens, nor any records of Comatulæ from New Zealand.

As a general rule, the individual species of Crinoids are much limited in their range, though there are a few well marked exceptional cases. Both species of *Rhizocrinus* occur in the east as well as in the west Atlantic, *Rhizocrinus lofotensis* ranging from the Lofoten Islands to 9° S. or perhaps to 35° S.; while three species of Pentacrinidæ occur in the South Pacific near the Kermadecs, and also among the Philippines, as the following list shows:—

SPECIES.	Near the Kermadec Islands.		Near the Fiji Islands.	Panglao.	Meangis Islands.
	170	171			
<i>Pentacrinus naresianus</i> , . . .	170	171	175	210?	214
<i>Pentacrinus alternicirrus</i> , . . .	...	171	...	210?	214
<i>Metacrinus wyvillii</i> , . . .	170	...	...	...	214