

## VII.—ON THE HABITS OF RECENT CRINOIDS, AND THEIR PARASITES.

The Crinoids, like the other Echinoderms, are very gregarious in their habits. This is especially the case with those living near the shore and in depths down to 150 fathoms. In Torbay, at Roscoff, in the Bay of Naples, and in many other places large quantities of *Antedon rosacea* may be readily obtained. Ten thousand individuals of *Antedon dentata* are estimated by the officials of the U. S. Fish Commission to have come up at one haul of the dredge off the coast of New England.<sup>1</sup> The "Porcupine" dredged *Antedon phalangium* in abundance in 50 to 100 fathoms off the Tunis coast; while the Challenger found *Antedon carinata* to be very plentiful off the coast of Bahia. Numerous examples of *Actinometra jukesi* and *Actinometra strota* were dredged at Cape York, and large quantities of both genera have been obtained in the shallow water round the Philippines by Semper, Meyer, and the Challenger. Station 192, near the Ki Islands (140 fathoms), and Station 214, off the Meangis Islands (500 fathoms), proved to be very prolific, both in Comatulæ (12 and 7 species), and in Pentacrinidæ (4 and 6 species); and the dredgings of the "Blake" in the Caribbean Sea have yielded similar results. A few stations where Comatulæ were especially abundant (off St. Vincent, Grenada, and Montserrat, all 120 fathoms or less) also yielded several examples of *Pentacrinus*. Prof. Agassiz records that on one occasion no less than one hundred and twenty-four individuals were obtained at a single haul of the bar and tangles.<sup>2</sup>

On the other hand, the score of individuals of *Pentacrinus wyville-thomsoni* dredged by the "Porcupine" in 1870 in 1095 fathoms off the coast of Portugal were unaccompanied by Comatulæ. This is perhaps due to the depth being one at which these Crinoids are comparatively rare; as two species were obtained, together with fragments of *Pentacrinus*, within a few miles of this Station, where the depth was 350 fathoms less. Some thirty individuals were taken by the "Talisman" in 1883 at a depth of 1480 metres (800 fathoms); but no information respecting the presence or absence of Comatulæ at the same Station has yet been published.

The Bourgueticrinidæ, like the Pentacrinidæ, are generally found living in large numbers together. Both Sars and Verrill have obtained numbers of specimens of *Rhizocrinus* at a single haul of the dredge, and Agassiz records that "on one occasion off Sand Key the dredge must have passed through a forest of them, judging at least from the number of stems and heads of all sizes which it contained."<sup>3</sup> *Bathycrinus aldrichianus* was found by the Challenger to be equally plentiful in the Southern Ocean (Stations 146, 147); and it is evident that in certain localities Crinoids of the more common genera may be obtained in almost any quantity.

<sup>1</sup> *Amer. Journ. Sci. and Arts*, vol. xxiii. p. 136.

<sup>2</sup> *Bull. Mus. Comp. Zool.*, 1879, vol. v. p. 296.

<sup>3</sup> *Bull. Mus. Comp. Zool.*, 1879, No. 1, vol. v. p. 5.