The trawl again worked admirably, and brought up many specimens of fish, Echinids, Asterids, Molluscs, Pennatulids, and other animals. The trawl after this was used throughout the voyage for deep-sea work almost to the exclusion of the dredge. It produces on the whole better results, and naturalists are much indebted to Captain Nares for having had the courage to attempt the use in deep water of an instrument which must fall on its proper side in order to work successfully.[1] On the other hand, it must be remembered that the results appear to show that the trawl is not so favourable as the dredge[2] for catching certain forms, such as Corals and Molluscs.

The Pennatulida.—On the 31st January, at a depth of 2125 fathoms, a fine representative specimen of the remarkable Alcyonarian genus *Umbellula* was taken. *Umbellula* belongs to the suborder of the Alcyonarians, called by Professor v. Kölliker the Pennatulida. It is a colonial organism, consisting of a bunch of polyps borne on the one extremity of a long stem, provided with a flexible horny axis, the opposite end being implanted firmly in the deep-sea mud. In the present specimen, which proved to be a new species, named by Professor v. Kölliker *Umbellula thomsoni*, the stem measured 36 inches in length. It is shown in fig. 10 (cut short). Many of the Pennatulida are known to be phosphorescent, and in this specimen of *Umbellula*, when taken from the trawl, the polyps and the membrane covering the axis of the stem exhibited a most brilliant phosphorescence. A like phenomenon was observed in the case of many other Alcyonarians obtained from the deep sea,—a matter of peculiar interest in connection with the presence of eyes in certain deep-sea animals, which inhabit a region totally devoid of any other source of light.

Umbellula was long one of the rarest of zoological curiosities. The first specimens ever described were obtained on the coast of Greenland, early in the last century, by Captain Adriaanz, commander of the "Britannia," while on a whale-fishing expedition; on this occasion two specimens were found adhering to the sounding line at a depth of 236 fathoms. These were described by M. Christlob Mylius, and one of them was again described in the Philosophical Transactions for 1754, in a letter from Mr. John Ellis to Mr. Peter Collinson, "Concerning a cluster-polyp found in the sea near the coast of Greenland." Mr. Ellis compared it to the "*Encrinos* or *Lilium lapideum* of the curious in fossils," and indeed the resemblance to a Crinoid is not a little striking. For more than a century the animal was not seen again, and it is only a few years since two specimens were dredged in deep water during the cruise of the Swedish ships "Ingegerd" and "Gladan," in the Arctic Ocean. These were described in 1874 by J. Lindahl as two new species,—*Umbellula miniacea* and *Umbellula pallida*.[3]

[1] Since this page was in type, Mr. Rathbun (*Science*, vol. iv. p. 56, 1884) states that the trawl was systematically used in scientific research by the U. S. Fish Commission in 1872, but he does not say whether they employed it for deep-sea work prior to Captain Nares' suggestion.

[2] A comparison of the results obtained by means of the trawl and dredge will be given in the concluding Report of the Challenger series.

[3] Lindahl, J., Om Pennatulid-slägtet Umbellula, *K. Svensk. Vetensk.-Akad. Handl.*, Bd. xiii., No. 3, 1874.