Islands, but his example was not much followed. In 1868 Professor Perceval Wright[1] proceeded to Setubal in Portugal, in order to investigate the occurrence of *Hyalonema*, which was reported to be frequently taken on the lines of the shark-fishers who had long pursued their calling, at the great depth of 500 fathoms. He succeeded in getting abundance of specimens of *Hyalonema*, although six men were required to work the dredge, and the depth of the water was 480 fathoms. "This dredging," says Professor Wyville Thomson, "is of special interest, for it shows that although difficult and laborious, and attended with a certain amount of risk, it is not impossible in an open boat, and with a crew of alien fishermen, to test the nature of the bottom, and the character of the fauna, even to the great depth of 500 fathoms."[2] But although possible, such dredging is too laborious and dangerous to be frequently resorted to, and for any systematic study of the depths of the sea more elaborate arrangements must be made.

The subject of deep-sea dredging was not being neglected in Great Britain. In the spring of 1868 Professor Wyville Thomson, in a letter to Dr. W. B. Carpenter, urged the employment of a Government vessel in a dredging expedition off the coast of Scotland, and in consequence of this the Royal Society laid before the Admiralty a statement of the advantages to science likely to result from a short dredging cruise in the North Atlantic. The Admiralty responded by placing the surveying ship "Lightning," Captain May, at the disposal of Drs. Thomson and Carpenter in the autumn of the same year. The conditions of work in the "Lightning" were very unfortunate both as regards the vessel and the weather which prevailed during the six weeks that the cruise lasted. In spite of all the difficulties in the way, dredging was carried on to a depth of 650 fathoms, and temperature observations of the greatest interest were obtained, which ultimately led to the discovery of the Wyville Thomson Ridge in the Færöe Channel in 1880.[3] Professor Wyville Thomson thus sums up the results of the "Lightning" expedition :—

"It had been shown beyond question that animal life is varied and abundant, represented by all the invertebrate groups, at depths in the ocean down to 650 fathoms at least, notwithstanding the extraordinary conditions to which animals are there exposed.

"It had been determined that, instead of the water in the sea beyond a certain depth varying according to latitude having a uniform temperature of 4° C., an indraught of Arctic water may have at any depth beyond the influence of the direct rays of the sun a temperature so low as −2° C.; or on the other hand, a warm current may have at any moderate depth a temperature of 6°·5 C., and it had been shown that great masses of

[1] See Notes on Deep-Sea Dredging, *Ann. and Mag. Nat. Hist.*, ser. 4, vol. ii, pp. 423–427, 1868.
[2] Depths of the Sea, p. 277, 1874.
[3] Exploration of the Færöe Channel, *Proc. Roy. Soc. Edin.*, vol. xi. pp. 638–717, 1882.