

(*Nymphon gracile*) was found attached to the lead, after a sounding in 230 fathoms. Next day, when the depth was 270 fathoms, a dredge was put over, and when hauled up was found to be nearly full; it contained a block of granite, a number of small stones, some beautiful specimens of living corals, and, to quote Captain Ross's own words:—

“Corallines,<sup>1</sup> Flustræ, and a variety of marine invertebrate animals, also came up in the net, showing an abundance and great variety of animal life. Amongst them I detected two species of *Pycnogonum*, *Idotea baffini*, hitherto considered peculiar to the Arctic Seas, a Chiton, seven or eight bivalves and univalves, an unknown species of *Gammarus*, and two kinds of *Serpula* adhering to the pebbles and shells.”<sup>2</sup>

On January 20th, 1841, the deep-sea clamm brought up stiff green mud containing corals and fragments of Starfish from a depth of 320 fathoms. Two days later the dredge was put over and allowed to trail along the bottom for two or three hours in 300 fathoms, and its contents included “many animals, some Corallines, and a quantity of sand, mud, and small stones.”<sup>3</sup>

Ross's deepest dredging was made at 10 A.M. on the 11th August 1841, in lat. 33° 32' S., long. 167° 40' E., when the dredge was let go in 400 fathoms; after being dragged along the ground for half an hour, it was hauled on deck, and found to contain “some beautiful specimens of Coral, Corallines, Flustræ, and a few Crustaceous animals.” The reflections of the accomplished leader of the expedition are extremely significant. So completely had Ross's researches faded from memory, that twenty years after they were made, the fact of living creatures being found under 400 fathoms of water was hailed as a great discovery. Yet Ross, referring to his dredgings in 1841, says:—

“It was interesting amongst these creatures to recognise several that I had been in the habit of taking in equally high northern latitudes; and although contrary to the general belief of naturalists, I have no doubt that from however great a depth we may be able to bring up the mud and stones of the bed of the ocean, we shall find them teeming with animal life; the extreme pressure at the greatest depth does not appear to affect these creatures; hitherto we have not been able to determine this point beyond a thousand fathoms, but from that depth several shellfish have been brought up with the mud.”<sup>4</sup>

From the fact that the same species were to be found at both poles, and that these animals are very sensitive to a change of temperature, he suggested that it would be possible for them to pass from one frigid zone to another, provided the temperature of the intervening sea bottom had a range not exceeding 5° F. Ross's observations confirmed his idea that the temperature at the bottom of the open sea was uniform in all latitudes, and subsequent investigations prove it, generally speaking, to be correct.

Sir James Ross was an indefatigable zoological collector, but it is to be regretted that his large collections of deep-sea animals, which he retained in his own possession

<sup>1</sup> Most probably Polyzoa are here referred to.—J.M.

<sup>3</sup> *Ibid.*, p. 207.

<sup>2</sup> Antarctic Voyage, vol. i. p. 202.

<sup>4</sup> *Ibid.*, pp. 202, 203.