Corallines, and a quantity of sand, mud, and small stones."[1] 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, but 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 shell-fish have been brought up with the mud."[2]

Migration of Marine Animals from one Polar Region to the other suggested.

From the fact that the same species were to be found towards 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 this, generally speaking, to be correct.

Sir James Ross was an indefatigable zoological collector, but it is to be regretted that the large collections of deep-sea animals, which he retained in his own possession after the return of the expedition, were found to be totally destroyed at the time of his death. Had they been carefully described during the cruise or on the return of the expedition to England, the gain to science would have been immense, for not only would many new species and genera have been discovered, but the facts would have been recorded in journals usually consulted by zoologists, instead of being lost sight of as was the case. A large number of zoological drawings made by Hooker during the Antarctic cruise were recently handed to the various naturalists engaged in working up the Challenger collections, and show that some of the Challenger discoveries had been anticipated by Ross.

Humboldt addressed a letter to Lord Minto, First Lord of the Admiralty, with

[1] Antarctic Voyage, p. 207.

[2] *Ibid.*, vol. i. pp. 202, 203. The organisms dredged from 2400 feet by J. C. Ross were examined by Stokes and Forbes, who found small corals, fragments of shells, two articulations of a small fossil (?) *Pentacrinites*, a spine of *Cidaris*, fragments of *Echinus*, a small broken *Cerithium*, a fragment of *Cleodora*, and a few rock fragments. Besides these organic remains Foraminifera were very plentiful belonging to the genera *Textularia*, *Nodosaria*, &c. (see Wallich *op. cit.*, pp. 80, 81).