

bringing it up safely.¹ He attached this to the line on a number of occasions, and succeeded in bringing up as much as 6 lbs. of mud from the great depth of 1050 fathoms in Baffin Bay; and on September 1st, 1819, in Possession Bay, "soundings were obtained correctly in 1000 fathoms, consisting of soft mud, in which there were worms, and entangled on the sounding-line, at the depth of 800 fathoms, a beautiful *Caput-Meduse*,"² thus proving that there was animal life on the bed of the ocean notwithstanding the darkness, stillness, silence, and enormous pressure produced by more than a mile of superincumbent water. Starfishes were frequently found attached to the line at depths of over 800 fathoms from the surface, but these discoveries were strangely lost sight of for many years. The zoological collections made on this voyage must have been of great scientific value, and it is much to be regretted that, on their arrival in this country, a large number of the specimens were in a state unfit for identification. The scientific work of the cruise had been entrusted to Sir Edward Sabine, who, while anxious to do justice to the whole circle of the sciences, naturally devoted himself most to his own department of physical and magnetic observations. Sir John Ross keenly felt the want of a naturalist. He writes:—

"An endless variety of the class *Acalephæ* were brought home, and sent to the Museum, but in a state so much contracted by the spirit as to render it impossible for Dr. Leach to make out their genera. Observations on these animals whilst living accompanied by accurate drawings, are quite necessary to render the preserved specimens of any degree of use; and it is to be regretted that no Naturalist capable of performing these indispensable parts of his duties accompanied the Expedition."³

Considerable attention was also paid to meteorology and ocean physics, and the record of the voyage includes a number of tables of continuous meteorological observations. the density of the surface water was observed daily, and occasionally that at a depth of 80 fathoms.⁴ Deep-sea temperatures were taken at short intervals of time and of depth by means of a self-registering thermometer with a protected bulb, resembling that devised by Sir William Thomson⁵ and Professor W. A. Miller half a century later.⁶

In his second Arctic voyage, from 1829 to 1833, Sir John Ross continued his scientific observations, and frequently dredged in shallow water, his limit of depth being 70 fathoms.⁷ The large zoological collections were unfortunately lost to science, as they had to be abandoned with the "Victory," and since there was no naturalist on the expedition the loss was complete.

The researches of Mr. Darwin during the voyage of H.M.S. "Beagle" (1831–36), remarkable in so many respects, are to be noted in this connection chiefly for his obser-

¹ Voyage of Discovery in His Majesty's Ships "Isabella" and "Alexander," Appendix, p. cxxxv, London, 1819.

² *Ibid.*, p. 178.

³ *Ibid.*, Appendix, pp. lxiii, lxiv.

⁴ *Ibid.*, Appendix, three large plates.

⁵ Depths of the Sea, p. 293, 1874; *Proc. Roy. Soc. Edin.*, vol. ii. pp. 267–271, 1851.

⁶ Depths of the Sea, p. 290.

⁷ Narrative of a Second Voyage in Search of a Northwest Passage, Appendix, p. lxxxii, London, 1835.