

CHAPTER XI.

History of Southern Exploration—Antarctic Temperatures—Density of the Sea Water south of the 60th parallel—Icebergs—Deposits—Surface Organisms—The Hexactinellida—The Tetractinellida.

FIVE expeditions only have been despatched from this or other countries to explore the Antarctic regions, viz., those of Cook 1772–75, Bellingshausen 1819–21, D'Urville 1837–40, Wilkes 1838–42, and Ross 1839–43.

Our knowledge of the Antarctic Ocean does not, however, rest on the reports of the commanders of these expeditions, as other captains, though not despatched expressly for the purpose, have penetrated beyond the Antarctic Circle in search of Whales or Seals, or for some scientific purpose, and have published narratives or papers of their proceedings, accompanied in many instances by charts showing their tracks. The most notable of these voyages are those of Smith and Bransfield 1820, Powell 1821, Weddell 1822–24, Morrell 1823, Foster 1828–29, Biscoe 1830–32, and Balleny 1839.¹

Of these Antarctic voyagers three only have succeeded in crossing the parallel of 70° S. Cook, in January 1774, penetrated to 71° 10' S. on the meridian of 106° 54' W., but was then stopped by field ice, which, to use his own words, “extended east and west as far as the eyes could see, amongst which ninety-seven icebergs were counted in addition to those outside the field, many of them very large and looking like ridges of mountains rising one above the other until they were lost in the clouds.” From this description it appears probable that Cook really saw land, covered by an ice cap, although he does not expressly say so.

Weddell, in February 1823, penetrated to the parallel of 74° 14' S. on the meridian of 34½° W., and then had only four icebergs in sight, although he had passed numerous bergs previously farther north. Evidently, therefore, a much higher latitude might have been reached had it been Weddell's object to proceed as far south as possible, but being on a sealing and not on an exploring voyage, he turned back at the 74th parallel, and proceeded to South Georgia to complete his cargo.

Ross passed the 70th parallel on three occasions and in three different years. First, in January 1841 on the meridian of 174½° W., when he penetrated to the parallel of 78° S., where he was stopped by an icy barrier, consisting of cliffs of ice 150 to 200 feet in height, which he traced in an east and west direction for a distance of 300 miles. Second, on the meridian of 169° W., on the 7th February 1842, when he again reached the parallel of 78°, again to find himself arrested by the icy barrier 70 miles east of his easternmost position in 1841; and the third time on the meridian of 16½° W., when he

¹ See Cook's Voyage, Bellingshausen's Voyage, D'Urville's Voyage, United States Exploring Expedition, 1838–42; Ross's Antarctic Voyage, Weddell's Voyage, Morrell's Voyage, Voyage of the “Chanticleer”; *Nautical Magazine*, vols. iv., viii., and ix.; *Proceedings of the Royal Geographical Society*.