

## CHAPTER X.

From Kerguelen to McDonald Islands and Heard Island—Notes on the reproduction of certain Echinoderms from the Southern Ocean—Heard Island to the Antarctic Circle and Australia—Icebergs of Antarctic Regions.

## KERGUELEN TO McDONALD ISLANDS AND HEARD ISLAND.

On the 2nd February, the day after leaving Kerguelen Island, the weather in the forenoon being fine and clear, a successful sounding and dredging were obtained in 150 fathoms, on a hard bottom (Station 150). The bottom was covered with a coarse gravel; the dredge brought up a large number of stones, fragments of rocks of irregular form, varying in size from 1 to 7 centimetres in diameter, with the angles more or less rounded, but much less so than those of ordinary rolled pebbles. They were blue-black, and the majority had a compact structure and were fine grained, while others were porous with a rough surface. Macroscopically they appeared to be basalts or basaltic lavas, but examined with the microscope it was seen that they belonged to the felspathic basalts (dolerite); among these volcanic fragments were noticed two or three pieces of granite and one of sandstone. The majority of these stones were overgrown by Foraminifera, Sponges, Actiniaria, Brachiopods, Ascidiæ, *Serpulæ*, and Polyzoa.

The dredge procured representatives of nearly all the invertebrate types. In the zoological Reports already published there are described twenty-two new species and three new genera from this locality. Of these there are seven new species of Tunicata including a new genus; seven new species of Gasteropoda, including a new genus, four new species of Ophiuroidea, and a new genus of Actiniaria. At noon the ship again proceeded under sail towards Heard Island, but at 1 P.M. a dense fog came on, so that at 3 P.M. it became advisable to bring to on the port tack under double-reefed topsails, as it was deemed imprudent to proceed further, not only on account of the uncertain position of the islands, but also because it is no unusual thing for icebergs to be seen in this locality; in fact the captains of the whaling schooners met at Kerguelen said that they passed two on their passage from Heard Island in January. At 5 P.M. no bottom was obtained at 425 fathoms, but at midnight a sounding was obtained in 92 fathoms.

On the 3rd February, at 6 A.M., bottom was again obtained in 80 fathoms, but previously, at 1, 2, 3, and 4 A.M., ground was not struck with 130 fathoms of line. This indicates the rocky, uneven nature of the bottom between Kerguelen and Heard Islands. As the weather remained thick and foggy all day, it was impossible to prosecute the search for Heard Island. The wind was light and variable with a long westerly swell. The fog lifting for a few minutes at 9.30 A.M., an observation of the sun was obtained.

On the 4th, at 4.30 P.M., the ship wore and stood to the southward, with the intention