

sphere is at present emphatically the ocean hemisphere ; the northern, the land hemisphere. Perhaps these conditions may be capable of being reversed, in which case the periods of depression in the south may have corresponded with those of elevation in the north. One thing which we know is, that there is a polar ice ring, not an ice cap, for we do not know what is within its edges at the South Pole, about 2,000 miles in diameter, and this in the only circumstances in which it can exist, namely, surrounded by a vast ocean furnishing it with abundant aqueous vapour. We also know that from this ice ring radiate glaciers, carrying *débris*, with which the sea bottom is strown half way to the equator. If continents were elevated out of the Southern Ocean, we should probably have on their surfaces glacial deposits more widespread and continuous than any remaining on the continents of the northern hemisphere, and like some of them thinning out to a terminal edge or border, instead of a terminal moraine like that of a glacier.<sup>1</sup> Thus we may say with some truth that the southern hemisphere is now passing through one phase of the Glacial period.

I have often thought that in the southern hemisphere the condition of Kerguelen Island and Heard Island, as described in the reports of the *Challenger*,<sup>2</sup> must very nearly represent the state of some mountain ranges and peaks in North America in the Glacial age. Heard Island, in S. latitude  $53^{\circ} 2'$ , is a mountain peak 6,000 feet high, and 25 miles in length. It sends down large glaciers to the sea. In its larger neighbour, Kerguelen, the glaciers do not reach the sea ; but there is evidence that at one time they did. It is still more curious that, in Kerguelen the modern ice overlies late tertiary deposits, holding remains of large trees, indicating a more continental condition and mild climate at no very remote period.

<sup>1</sup> This is now admitted by Chamberlain and others to be the case with the oldest boulder clay on the American continent.

<sup>2</sup> Vol. i. p. 370, etc.