

surface. It appeared as if the denser mass were here all below water, and not large enough to float more than the lighter, more friable and recent top deposit above the water.*

Antarctic icebergs have been met with by merchant vessels in higher latitudes, varying in length from one to seven, or even ten miles in length. In 1854, a vast body of ice was passed and reported by twenty-one merchant ships in lat. 44° to 40° S., long. 28° to 20° W., a latitude corresponding to that of the northern coast of Portugal. The ice mass, which was probably a group of icebergs locked together, was in the form of a hook, 60 miles long by 40 broad, enclosing a bay 40 miles in breadth; none of the ice masses composing it exceeded 300 feet in height.†

During the short time that we were amongst the icebergs we met with none that bore upon them any moraines or rocks which could with certainty be determined as such. The scarcity of such appearances has been remarked by former voyagers. Nevertheless, there are numerous instances of rocks having been seen on southern bergs.

Several observers have met with rocks on bergs. Wilkes saw many such; Ross also, and the latter, on one occasion, landed a party on a berg on which there was a volcanic rock weighing many tons, and which was covered with mud and stones.‡ Mr. Darwin has published a note on a rock seen on an Antarctic iceberg in lat. 61° S.§

Dr. Wallich|| remarks on the similar scarcity of the appearance of stones or gravel on northern bergs. Not one in a thousand shows dirt, etc. He attributes this to the very small disturbance of their centres of gravity which icebergs undergo when floating freely. Stones and gravel may be present in most cases, but remain most frequently invisible under water in the lower parts of the bergs. We dredged up in deep water on two occasions, near the pack-ice, fragments of gneiss and slate which were certainly transported thither by ice.

* For a magnificent series of large photographic views of Arctic icebergs and ice scenery, see "The Arctic Regions," by William Bradford, London, Sampson Low & Marston, 1873.

† "South Atlantic Directory," p. 94. W. H. Rosser, and J. F. Imray. London, 1870. Here will be found a general account of icebergs in the South Atlantic. On same subject see J. T. Towson, "On Icebergs in the Southern Ocean." Liverpool, 1859.

‡ Ross, "Antarctic Voyage," Vol. I., p. 173. London, J. Murray, 1847.

§ C. Darwin, "Notes on a Rock seen on an Iceberg in lat. 61° S." Geog. Soc. Journ. IX., 1839, pp. 528, 529. "The Voyage of the 'Eliza Scott,' Commander John Balleny." Journal of Researches, p. 251.

|| G. C. Wallich, M.D., F.L.S., etc., "The North Atlantic Sea Bed," Pt. 1, p. 56. London, Van Voorst, 1826.