

Ross, D'Urville, and Wilkes saw both kinds of ice in the vicinity of the land, and both Ross and D'Urville agree in stating that the icy cliffs, which are now known as the "Ice Barrier," are not to be seen when the land is high and mountainous; for instance, Ross saw no barrier until he reached the extremity of the ridge of mountains running irregularly north and south through Victoria Land, and D'Urville saw no icy barrier opposite Adelie Land, but traced it for 60 miles on the coast of what he supposed to be Clarie Land, where Wilkes also saw it. Wilkes himself does not say where he saw the ice cliffs and where the land ice, but calls them both the icy barriers. That they both form a barrier to the land is undeniable, and so Wilkes was entitled to call both descriptions of ice the "Barrier"; still it would have been an advantage to succeeding investigators had Wilkes distinguished between the land ice which may by heavy gales or some cause be broken up occasionally, and the ice cliff which one might as well attempt to pass or to sail through as the Cliffs of Dover, and which is now the only description of ice called the "Barrier." It does not appear that any other explorer except Ross, D'Urville, and Wilkes has seen the icy barrier, although most southern explorers have seen the ice extending from the foot of the land.

From the fact that two explorers only have succeeded in effecting a landing on Antarctic shores proper, and that the land there is almost entirely covered with perpetual snow and ice, it is evident that our knowledge of the geography and geology of the Antarctic regions must necessarily be very limited. That a very considerable tract of land exists south of the 65th parallel and between the meridians of 100° E. and 180° E., and also between the meridians of 45° and 60° E., cannot be doubted, but whether this land is continuous or broken up into a series of islands with shallow water between cannot at present be stated with any great degree of certainty, for the ice in the vicinity of the land so blocks up all approach to the coast and hides the shore that it is next to impossible to say, with accuracy, where the land begins. It can, therefore, only be conjectured from the state of the ice and the observed temperatures what the condition of the land is.

Antarctic Temperatures.—The mean temperature of both the air and sea surface south of the parallel of 62½° S. is, even in summer, at or below the freezing point of fresh water.¹ Between 60° and 62½° S. a sensible rise takes place, and a reading as high as 38° has been recorded of both air and sea in March between these parallels. Temperatures below the surface south of the 60th parallel had been taken by Cook, Ross, and Wilkes before the Challenger Expedition, but as the thermometers used were not protected from pressure, the results obtained are not of much value, as they are combinations of temperature and pressure due to depth. There is, however, one marked peculiarity about the results obtained with these unprotected thermometers,

¹ Contributions to our knowledge of the Meteorology of the Antarctic Regions. Published by authority of the Meteorological Committee, 1873.