of the gullies and caverns, and up against the cliffs. Washing in and out of the caves, it makes a resounding roar, which, when many bergs surround the ship, is very loud. So heavy is the surf on the bergs, and so steep are they as a rule, that none was seen on which landing could have been effected from a boat. As the waves wash up into the wash-lines of the bergs they form icicles, which are to be seen hanging in rows from the upper border of these grooves. A line of fragments is always to be seen drifting away from a large berg; these are termed wash-pieces. They are very instructive as showing the vast relative extent of submerged ice required to float a small portion above water, the parts of the fragments below water being visible from a ship's deck.

The scenic effects produced by large numbers of icebergs, some in the foreground, others scattered at all distances to the horizon and beyond it, are very varied and remarkable, depending on the varying effects of light and atmosphere. On one occasion, as the pack ice was being approached, some distant bergs were seen to assume a most intense black colour. This was due to their being thrown in shade by clouds passing between them and the sun, and the heightening of this effect by the contrast with brilliantly lighted up bergs around them. They looked like rocks of basalt.

Deposits.—In the cruise between Heard Island and Australia four kinds of deposits were met with, viz., blue mud, Diatom ooze, Globigerina ooze, and red clay.

The first of these was found in depths of 1675, 1800, and 1300 fathoms at the most southern latitude reached by the Challenger, between lat. 64° and 66° S. (see Sheet 23). These blue muds contained less than 11 per cent. of carbonate of lime, which consisted chiefly of the dead shells of *Globigerina dutertrei*, and about 20 per cent. of the remains of siliceous organisms, chiefly Diatoms. The mineral particles consisted of quartz, felspars, hornblende, garnets, glauconite, mica, tourmaline, and fragments of granitic, amphibolic, and other rocks. From the depth of 1675 fathoms the dredge brought up many kinds of rocks and pebbles, some of them showing distinct marks of glaciation, and many of them having a coating of peroxide of manganese on that part which had projected above the mud when lying at the bottom. The rocks belonged to the following lithological types:—granitites, quartziferous diorites, schistoid diorites, amphibolites, mica schists, grained quartzites, and partially decomposed earthy shales.

To the northward of the Stations at which blue mud was found between lat. 64° and 53° S., in depths of 1260, 1975, and 1950 fathoms, the deposit was a Diatom ooze, usually of a yellowish-straw colour, which when dried had the aspect of flour, the particles being extremely fine, and the whole taking the impress of the fingers when pressed, gritty particles being now and then recognisable. One of the samples contained as much as 22 per cent. of carbonate of lime, consisting chiefly of the dead shells of *Globigerina bulloides*, *Globigerina inflata*, and *Globigerina dutertrei*. The mineral particles were similar to those in the blue muds just mentioned, and appeared to make up from 15