

until flotation comes into play, when large masses break off from the ice-cliff, and rising up and floating, sail away seaward as icebergs. These ice-islands carry with them any soil or rock-rubbish which may have fallen upon them from inland cliffs, while they formed part of the ice-sheet of the country. The debris so borne off is, of course, thrown down upon the sea-bottom, as each berg melts away after a voyage of perhaps hundreds of miles. Year by year, whole fleets of these bergs are sent southwards in the arctic regions, so that the bed of the northern seas must be strewn with earth and boulders. As only between an eighth and a ninth part of a mass of ice appears above the sea-water on which it floats, the bulk of many bergs must be enormous. One rising two hundred feet above the waves—not an uncommon height—must have its bottom more than seventeen hundred feet below them, and the thickness of the ice-cap at its outer edge must be there about two thousand feet. The antarctic ice-sheets and ice-bergs are of still more colossal dimensions.

Deeply seated in the water, bergs are acted on much more by marine currents than by winds. Hence, they are sometimes seen careering through a frozen sea in the teeth of a tempest, breaking up the thick-ribbed ice before them with a noise like the loudest thunder, yet with as much apparent ease as a ploughshare cuts the loam. Every winter, crowds of bergs are firmly fixed in the frozen sea of the arctic regions, and when summer comes, the united mass drifts southwards towards Newfoundland. Vast floes of ice, larger sometimes than the whole of Scotland, with embedded ice-hills rising two hundred feet or more above the sea-level and sinking seventeen hundred feet or more below it, are thus borne by the ocean-currents into warmer latitudes, where they break up and disappear. When such current-driven masses grate or strand on the