

many masters of vessels have met them, some six or seven hundred miles from the barrier, from sixty to eighty days after this period, which will give a near approximation to our results heretofore stated.

The season of 1839 and '40 was considered as an open one, from the large masses of ice that were met with in a low latitude, by vessels that arrived from Europe at Sydney: many of them were seen as far north as latitude 42° S.

The causes that prevail to detach and carry them north, are difficult to assign. I have referred to the most probable ones that would detach them from the parent mass in their formation. Our frequent trials of currents, as has been stated, did not give us the assurance that any existed; but there is little doubt in my mind that they do prevail. I should not, however, look to a surface current as being the motive power that carries these immense masses at the rate they move; comparatively speaking, their great bulk is below the influence of any surface current, and the rapid drift of these masses by winds is still more improbable; therefore I conceive we must look to an under current as their great propeller. In one trial of the deep-sea thermometer, we found the temperature beneath, four degrees warmer than the surface. Off Cape Horn, the under temperature was found as cold as among the ice itself; repeated experiments have shown the same to occur in the Arctic regions. From this I would draw the conclusion that changes are going on, and it appears to me to be very reasonable to suppose, that at periods, currents to and from the poles should at times exist; it is true, we most generally find the latter to prevail, as far as our knowledge of facts extends, but we have not sufficient information yet to decide that there is not a reflow towards the pole; the very circumstance of the current setting from the higher latitudes, would seem a good argument that there must be some counter-current to maintain the level of the waters. These masses, then, are most probably carried away in the seasons when the polar streams are the strongest, and are borne along by them at the velocity with which they move: that these do not occur annually may be inferred from the absence of ice-islands in the lower latitudes; and that it is not from the scarcity of them, those who shared the dangers of the Antarctic cruise, will, I have little doubt, be ready to testify; for, although great numbers of them studded the ocean that year, yet the narrative shows that vast numbers of them were left.

The specific gravity of the ice varies very much, as might naturally be expected; for while some of it is porous and of a snowy texture,