

To explain how the bodies and skeletons of these inhabitants of the deep, whether found entombed or not in ice, were carried up to considerable heights above the level of the sea, appeared to me at first more difficult than to account for their having been included in solid ice. A few months after my visit to Portsmouth I saw Captain Wilkes, of the United States Exploring Expedition, and called his attention to the problem. He remarked, that the open sea sometimes freezes round the Sandwich Islands, so that ships can not approach within 100 miles of the shore. In like manner, in Antarctic regions, the ocean often freezes over the base of a cliff formed of barrier ice. In all these cases, the sheet of ice, however continuous, does not adhere to the land or the barrier, because the rise and fall of the tide, however slight, causes a rent, permitting the whole mass to move up and down. The snow, drifting off the land in vast quantities during winter, falls over the cliffs upon the frozen surface of the sea, until its weight is such that it causes the whole mass to sink; and unless the winds and currents happen to float it off, it may go on subsiding till it acquires a great thickness, and may at last touch the bottom. Before this happens, however, it usually gets adrift, and, before it has done melting, tumbles over or capsizes more than once.

On my return to England, in 1846, I described the same phenomena to my friend Dr. Joseph Hooker, and subsequently to Sir James Ross, and they both of them, without hearing Captain Wilkes's theory, suggested the same explanation, having observed that a great sheet of ice had formed in the sea by the freezing of melted snow on the southern or polar side of every Antarctic island. If the carcass of a dead whale be thrown up on this ice, it must soon be buried under other snow drifted from the land, and will at length be inclosed in the lower part of an iceberg, formed in the manner before described. The frequent overturning or reversal of position of these great masses, arises from the temperature of the water at the depth of 1000 or 1500 feet, to which they frequently descend, being much warmer than the incumbent air or more superficial water. When the inferior or submerged portions melt, the center of gravity is soon changed.