

much higher and more equable temperature to the bottom; and there is every reason to believe that such a land barrier did exist to the north of the great Atlantic basin, and continuous with the belt of northern land on which there is no deposition of cretaceous rocks. He says that "if such a land barrier existed at the period of the chalk, and that barrier was submerged during the earlier part of the tertiary period, it would, taken in conjunction with the very different conditions of depth under which the chalk and lower tertiaries were found, go far to account for the great break in the fauna of the two periods."

From the information we have as to the depths in the South Atlantic and the North Pacific, there seems to be no reason, however, to suppose that a barrier has recently existed shutting off the polar sea of the southern hemisphere; and I confess I cannot quite see how the result suggested by Mr. Prestwich could follow, without taking into account another condition of whose existence we seem to have evidence. A band of cretaceous rocks has been shown to extend round the world a little to the north of the equator wherever we have dry land; and it has likewise been shown, from considerations of depth, that this chalk band probably extended also across our great ocean basins. At that time, then, it seems that no continent ranging from north to south interrupted the drift of the equatorial current, deflecting the heated equatorial water to north and south and inducing a return indraught of polar water. This would undoubtedly remove one great cause, if not the sole cause, of the present low temperature of deep water between the tropics.