

existence of the Gulf Stream. The stream has, however, a very different and more adequate origin, but one which the depression of the North American continent would equally affect. It is a reaction on the great Drift Current. If the reader take a cup or basin filled with water, and blow strongly across the surface of the fluid, two distinct currents will be generated,—a *drift* current, which, flowing in the direction of his breath, will impinge against the opposite side of the vessel,—and a reactionary current, which, passing along its sides, will return towards himself. And nothing can be more obvious than the principle on which this occurs. The *drift* current, more immediately generated by his breath, heaps up the water against the side of the vessel on which it impinges; and this heaped-up water must of course inevitably seek to return to the other side, in order to restore the deranged equilibrium of level. Now, the Northern Atlantic,—the Atlantic to the north of the equator,—displays on an immense scale exactly the phenomena exhibited by this simple experiment of the cup or basin. The breath of the trade-winds, ever blowing upon it from the east and north-east, in that broad belt which lies between the tenth and the twenty-sixth degrees of north latitude, forms a great drift current, which, impinging on and heaping up the waters against the South American coast,—the opposite side of the cup or basin,—flows northwards into the Carribbean Sea and Mexican Gulf, and, issuing from the Straits of Florida in the character of the reactionary Gulf Stream, strikes diagonally across the Atlantic full on Northern Europe. But the existence of this reactionary stream is not merely and exclusively a consequence of the existence of the Drift Current: it is also equally a consequence of the existence of an American continent. Save for the side of the basin or cup opposite to that whence the breath comes, the water, instead of returning in a reactionary current, would flow over. Such a wide breach