

take place on *some general principle*. We indeed already know, that the waters of the Pacific Ocean, and of the Atlantic, between the tropics, where least obstructed by land, move at and near the surface, in a similar direction, nearly and generally, to that of the wind.—When obstructed by lands, they take the various turnings and windings, which the forms and windings of those lands, and other local causes, impose on them.

"If it be allowed, 'that the influence of the sun, in rarefying the atmosphere to the greatest degree, between the tropics, together with the earth's rotation on its axis from west to east, would produce (if no land intervened) a constant wind from east to west,' may we not suppose, if the same causes operate similarly, but proportionally, on the *waters* of the ocean, that *they* must produce a similar effect, and oblige them to take a like direction—that is, from east to west, at and near the surface all round the globe, within the limits of the sun's declination?—If this general effect, then, be admitted, on the ground it rests, we may presume, that if there were a passage through the Isthmus of Darien for the immense body of water, which continually flows from east to west into the Caribbean Sea and Gulf of Mexico, what is called the gulf-stream would no longer exist. And as it seems probable, that the surface of the water must be somewhat higher on the eastern side of America *thereabouts*, than on the other, owing to the land's obstruction to the natural course of the great equinoctial current, and the necessity imposed

! From the observations made by Humboldt at the mouth of the Rio Seca in the Atlantic, and on the coast of the South Sea, it appears "there is a difference of level between the two seas, not exceeding 6 or 7 metres, or about 19 or 22 feet."

on it, to fill the Atlantic; accumulation of the Contin surface of be lower under water would, however, West India passage must current, to be a lee coast of F bly be felt current of than it no warmer g which this constant its propell that it may land, before fluid beneath ern region est rarefac supply the evaporatin upper str The gulf- wards the affect a sh is possible northward perature,