

they have been successively produced by the sediments of the water, and by matters transported by the tides or other motions ; for we do not consider the motion of the tides as the sole cause of those inequalities, but only as the principal and first, because it is the most constant and acts without interruption ; the action of the winds is another cause ; the action of which beginning at the surface, extends to considerable depths, as is plain from the matters that are loosened and thrown up by a storm from the bottom of the sea, and which never happens but in tempestuous weather.

We have already mentioned that between the tropics, and even some degrees beyond them, an east wind continually blows ; this wind, which contributes to the general motion of the sea from east to west, is as ancient as the flux and reflux, since it depends on the rarefaction of the air, produced by the heat of the sun. Here then are two united causes of motion, the greatest of which is near the equator. The first, the tides which are more sensibly felt in southern latitudes : and the second, the east wind which blows continually in the same climates. These two causes have concurred, ever since the formation of the globe, to produce a motion in the
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