

This is impossible as an ordinary occurrence. No ordinary combination of circumstances could much augment the fluctuations of the ocean beyond their present amount: if the equatorial course of the tide were free, and the impulses of the sun and moon could be supposed to conspire in augmenting the rise, successively, as isochronous applications of small forces will enlarge the vibrations of a suspended bar, this would not correspond either in magnitude or violence to the phenomena which require explanation. It is impossible, therefore, to assign a physical cause for such a mighty overflow of the ocean, except we suppose the earth's figure to be changed; its axis displaced, and thus the sea moved in mass, or its crust broken, and thus new basins opened to the waters. The displacement of the earth's axis cannot be assumed, on satisfactory grounds, as a thing within the range of probability; for the earth is a figure of equilibrium, and therefore its *axis is fixed*, as far as any ordinary tendencies in the mass itself are concerned; and neither comets nor planetary attractions are thought to be influential for such an object. We are, therefore, reduced to the supposition of violent disruption of the crust of the earth, if we wish to explain diluvial phenomena by one or many transient overflows of the sea.

Whether, therefore, we suppose the dry land to have been covered by boulders through an inroad of the elevated sea, or the unequal bed of the sea to have been raised, in either case it is necessary to admit violent fracture of the earth's crust, and on either view we may venture to generalise the phenomena connected with the dispersion of boulders from the Grampians, Scandinavian ranges, Cumbrian rocks, and primary strata of the north of Ireland, in one point of view. For the same speculation of a rise of land parallel to an eastward or north-eastward line, if it will account for the phenomena in the north of England, will also explain those of the other localities, if the axis be taken far enough south, and the area moved be supposed to ex-