

sess the uniformity formerly attributed to it; that on the contrary it must be liable to local distortion from the attractive influence of the land. Not only so, but the level of the surface of large inland sheets of water must be affected by the surrounding high lands.

Mr. R. S. Woodward, whose recent memoir on this subject has been cited (p. 68), has calculated that in a lake 140 miles broad and 1000 feet deep in the middle, the difference of level of the water-surface at the centre and at the margin may amount to between three and four feet.¹⁹⁵ As already stated he has further computed that the effect of the continents of Europe and Asia at the centre in disturbing the sea-level must amount to about 2900 feet, if we suppose that there is no deficiency of density underneath the continent, and to only about 10 feet if we suppose that the very existence of the continent implies such a deficiency.¹⁹⁶

Various suggestions have been made regarding possible causes of alteration of the sea-level. (1) A shifting of the present distribution of density within the nucleus of the planet would affect the position and level of the oceans (*ante*, p. 89). (2) As permanent snow and ice represent so much removed from the general body of water on the globe, any large increase or diminution in the extent and thickness of the polar ice-caps must cause a corresponding variation in the sea-level (*ante*, p. 44). (3) A change in the earth's centre of gravity, such as might result from the accumulation of large masses of snow and ice as an ice-cap at one of the poles, has been already referred to (p. 43) as tending to raise the level of the ocean in the hemisphere so affected, and to

¹⁹⁵ Bull. U. S. Geol. Surv. No. 48 (1888), p. 59.

¹⁹⁶ *Op. cit.* p. 85. See Stokes, *Trans. Camb. Phil. Soc.* viii. (1849), p. 672; *Sci. Proc. Roy. Dublin Soc.* v. (1887), p. 652.