

cause of change must have a place in geological dynamics. But it has been urged that besides this effect, the removal of rock by denudation from one area and its accumulation upon another affects the equilibrium of the crust; that the portions where denudation is active, being relieved of weight, rise, while those where deposition is prolonged, being on the contrary loaded, sink.²³⁵ This hypothesis has recently been strongly advocated by some of the geologists who have been exploring the Western Territories of America, and who point in proof of its truth to evidence of continuous subsidence in tracts where there was prolonged deposition, and of the uprise and curvature of originally horizontal strata over mountain ranges like the Uinta Mountains in Wyoming and Utah, which have been for a long time out of water. To suppose, however, that the removal and deposit of a few thousand feet of rock should so seriously affect the equilibrium of the crust as to cause it to sink and rise in proportion, would evince such a mobility in the earth as could not fail to manifest itself in a far more powerful way under the influence of lunar and solar attraction. That there has always been the closest relation between upheaval and denudation on the one hand, and subsidence and deposition on the other, is undoubtedly true. But denudation has been one of the consequences of upheaval, and deposition has been kept up only by continual subsidence.

We are concerned in the present part of this work only with the surface features of the land in so far as they

²³⁵ Similarly it has been contended that the accumulation of a massive ice-sheet on the land would cause a depression of the terrestrial surface. N. S. Shaler, *Proc. Boston Nat. Hist. Soc.* xvii. p. 288. T. F. Jamieson, *Quart. Journ. Geol. Soc.* 1882, and *Geol. Mag.* 1882, pp. 400, 526. Fisher, "*Physics of Earth's Crust*," p. 223.