

666 and 1312 feet below the level of the Mediterranean. If we could suddenly remove the alluvial soil which covers the rocky strata in many parts of the earth's surface, we should discover how great a portion of the rocky crust of the earth was then below the present level of the sea. The periodic, although irregularly alternating rise and fall of the water of the Caspian Sea, of which I have myself observed evident traces in the northern portions of its basin, appears to prove,\* as do also the observations of Darwin on the coral seas,† that without earthquakes, properly so called, the surface of the earth is capable of the same gentle and progressive oscillations as those which must have prevailed so generally in the earliest ages, when the surface of the hardening crust of the earth was less compact than at present.

The phenomena to which we would here direct attention remind us of the instability of the present order of things, and of the changes to which the outlines and configuration of continents are probably still subject at long intervals of time. That which may scarcely be perceptible in one generation, accumulates during periods of time, whose duration is revealed to us by the movement of remote heavenly bodies. The eastern coast of the Scandinavian peninsula has probably risen

tween the surface of the Dead Sea and the highest houses of Jaffa is about 1605 feet. Mr. Alderson, who communicated this result to the Geographical Society of London in a letter, of the contents of which I was informed by my friend, Captain Washington, was of opinion (Nov. 28, 1841) that the Dead Sea lay about 1400 feet under the level of the Mediterranean. A more recent communication of Lieutenant Symond (Jameson's *Edinburgh New Philosophical Journal*, vol. xxxiv., 1843, p. 178) gives 1312 feet as the final result of two very accordant trigonometrical operations.

\* *Sur la Mobilité du fond de la Mer Caspienne*, in my *Asie Centr.*, t. ii., p. 283-294. The Imperial Academy of Sciences of St. Petersburg, in 1830, at my request, charged the learned physicist Lenz to place marks indicating the mean level of the sea, for definite epochs, in different places near Baku, in the peninsula of Abscheron. In the same manner, in an appendix to the instructions given to Captain (now Sir James C.) Ross for his Antarctic expedition, I urged the necessity of causing marks to be cut in the rocks of the southern hemisphere, as had already been done in Sweden and on the shores of the Caspian Sea. Had this measure been adopted in the early voyages of Bougainville and Cook, we should now know whether the secular relative changes in the level of the seas and land are to be considered as a general, or merely a local natural phenomenon, and whether a law of direction can be recognized in the points which have simultaneous elevation or depression.

† On the elevation and depression of the bottom of the South Sea, and the different areas of alternate movements, see Darwin's *Journal*, p. 557, 561-566.