

position relatively to the sea. There are several distinct grounds for preferring this conclusion. First, it will account equally for the position of those elevated masses of marine origin in which the stratification remains horizontal, and for those in which the strata are disturbed, broken, inclined, or vertical. Secondly, it is consistent with human experience that land should rise gradually in some places and be depressed in others. Such changes have actually occurred in our own days, and are now in progress, having been accompanied in some cases by violent convulsions, while in others they have proceeded so insensibly, as to have been ascertainable only by the most careful scientific observations, made at considerable intervals of time. On the other hand, there is no evidence from human experience of a lowering of the sea's level in any region, and the ocean cannot sink in one place without its level being depressed all over the globe.

These preliminary remarks will prepare the reader to understand the great theoretical interest attached to all facts connected with the position of strata, whether horizontal or inclined, curved or vertical.

Now the first and most simple appearance is where strata of marine origin occur above the level of the sea in horizontal position. Such are the strata which we meet with in the south of Sicily, filled with shells for the most part of the same species as those now living in the Mediterranean. Some of these rocks rise to the height of more than 2000 feet above the sea. Other mountain masses might be mentioned, composed of horizontal strata of high antiquity, which contain fossil remains of animals wholly dissimilar from any now known to exist. In the south of Sweden, for example, near Lake Wener, the beds of one of the oldest of the fossiliferous deposits, namely, that formerly called Transition, and now Silurian, by geologists, occur in as level a position as if they had recently formed part of the delta of a great river, and been left dry on the retiring of the annual floods. Aqueous rocks of about the same age extend for hundreds of miles over the lake-district of North America, and exhibit in like manner a stratification nearly undisturbed. The Table Mountain at the Cape of Good Hope is another example of highly elevated yet perfectly horizontal strata, no less than 3500 feet in thickness, and consisting of sandstone of very ancient date.

Instead of imagining that such fossiliferous rocks were always at their present level, and that the sea was once high enough to cover them, we suppose them to have constituted the ancient bed of the ocean, and that they were gradually uplifted to their present height. This idea, however startling it may at first appear, is quite in accordance, as before stated, with the analogy of changes now going on in certain regions of the globe. Thus, in parts of Sweden, and the shores and islands of the Gulf of Bothnia, proofs have been obtained that the land is experiencing, and has experienced for centuries, a slow upheaving movement. Playfair argued in favor of this opinion in 1802; and in 1807, Von Buch, after his travels in Scandinavia, announced his conviction that a rising of the land was in progress. Celsius and other Swedish writers had,