

*Displacements of Stratified Rocks.*

The notices in a former chapter (Vol. I.) will probably suffice to satisfy the inquirer after geological truth, that the elevation of stratified rocks to their present height above the sea is not merely relative, not merely caused by great depressions of the earth's surface elsewhere, but, in part at least, dependent on a *real uplifting* of mountain chains and other groups of dislocated strata. The most obvious argument in support of this is the well-known fact, that, in approaching the mountains, three orders of phenomena rise together to importance; the *inclination* of the strata becomes more and more decided and violent, till they appear vertical or even reversed; the *marks* of *violent* displacement augment in a corresponding degree; and the exhibition of *igneous* rocks becomes continually more frequent among the fractured and contorted strata. Now, if the mountain lines and groups had been *points of rest*, while all the spaces round them sank, something like the present distribution of land and sea would have appeared, but these signs of violent displacement would not have predominated in the vicinity of the mountains. There is no doubt, therefore, that these have been local centres of violence and not of rest.

The elevation of mountains has been too much regarded in the light of an insulated phenomenon: Mr. Darwin has truly pointed out its relation to *continental elevation*, which may be regarded as the great effect of a general cause manifesting itself at particular points in greater intensity. Just as, in experimental pressures, on solids of every form, the weakest part alone yields to a force which, up to a certain point, was borne equally by all, we may easily conceive a *general continental elevation* to a certain point, but beyond this, a partial rupture and relief of the pressure along a particular fissure. This is Mr. Darwin's view of the phenomena of uplifted land in and on either side of the Andes.