It will be therefore one object of the present work to collect all the phœnomena of this nature which have been observed in this country, under a general point of view; they are partly treated of under the heads 'inclination' and 'stratification,' in the account of each formation; the combined results will be presented in a distinct chapter in the last book.

§ 8. Another class of facts, implicated with the questions arising from the convulsions to which the great change of the ocean's level has been ascribed, are those which relate to the rocks known by the generic designation of the Trap formation; for these rocks, being in the opinion of a large class of geologists decidedly of volcanic origin, the partisans of these views will undoubtedly attribute to the explosions which produced them, the principal agency in forcing up the strata, and heaving from the depths of the waves the ponderous masses of the continents. It is not however the object of this work to dwell upon theoretical views, further than to point out the manner in which the facts collected from observation may be brought to bear upon them. The phœnomena of the English trap rocks will be fully discussed in treating of those associated with the coal-formation; they will not be found perhaps very decisive, nor so illustrative of the great points at issue, as the appearances presented by similar rocks in many other countries. Without pronouncing any judgment on the controversy, we may observe that the weight of geological authorities decidedly preponderates, at present, in favour of the igneous origin of these rocks. In the subjoined note we have shortly stated the general question, as to the extent and manner in which volcanic agency may possibly be supposed to have operated in the convulsions which appear to have affected the Earth's surface, but we wish to keep these conjectural speculations entirely distinct from that positive knowledge acquired from observation, which is as yet the only certain portion of geological science.*

* In support of the hypothesis which ascribes an important part to volcanic agency in modifying the surface of our planet, the following at least plausible arguments might be adduced; we submit them, however, without venturing to determine what real weight they possess.

1. It must first be kept in view that the question is, to assign an adequate cause for the undoubted fact of the emergence of the loftiest mountains of the present continents; and that when so mighty an effect is to be accounted for, the mind must be prepared to admit, without being startled, causes of a force and energy greatly exceeding those with which we are acquainted from actual observation.

2. The broken and disturbed state and inclined position of the strata composing those continents, many of which must have been at the time of their original formation horizontal, indicate (as we have seen) that one, at least, of the causes operating to effect this great change of relative level