

they were raised. As the ocean from which these beds were raised, must have been agitated with inconceivable violence, the retiring waters would scoop out deep excavations in the softer beds of schist, and also tear off many of the vertical plates of the hardest rocks, and form the rudiments of those pyramidal peaks and aiguilles, which rise like the spires of a Gothic cathedral. Mountain torrents, caused by thunder storms or the sudden melting of alpine snow, may have subsequently torn away large portions both of the harder and softer beds: the disintegration of the granitic aiguilles, which are exposed to the influence of atmospheric agency, is daily taking place, and their ruins are, every day, falling on the surface of the glaciers, and are carried down into the valleys: their peculiar forms are derived from their laminated structure, which disposes them to split in a vertical direction.*

It is important to observe, that different groups and ranges of mountains have been elevated, at different and remote epochs, and the birth of different parts of the same continent was not coeval: the more lofty parts constituted separate islands, before the whole surface emerged from the ocean. Satisfactory evidence of this will be adduced in a subsequent part of this work: it is sufficient to the present purpose to state, that the ocean has covered all that is now dry land, but not at the same epoch.

* Plate II. Fig. 2. represents the general position of the beds near the Col de Balme and Mont Blanc; *aaa*, alternating beds of sandstone and limestone; *bb*, elevated beds of puddingstone, containing rounded stones and fragments of the lower rocks; *cc*, soft slate, in which a passage or col is formed; *ddd*, vertical granitic beds rising in pyramidal forms, called Aiguilles or Needles.