

ately after the upheaval of the chain, there is evidence on every side of gigantic denudation. The subaerial forces that have been at work upon the Alpine surface ever since it first appeared have dug out the valleys, sometimes acting in original depressions, sometimes eroding hollows down the slopes. Moreover they have planed down the flexures, excavated lake-basins, scarped the mountain sides into cliff and *cirque*, notched and furrowed the ridges, splintered the crests into chasm and *aiguille*, until no part of the original surface now remains in sight. And thus the Alps remain a marvellous monument of stupendous earth-throes, followed by prolonged and gigantic denudation.

In massive rocks, the structure-lines are those of joints alone, and according to the direction of the intersecting joints the trend and shape of the ridges are determined. The importance of rock-joints, not only in details of scenery, but even in some of the main features of the mountain outlines of massive rocks, is hardly at first credible. It is along these divisional lines that the rain has filtered, and the springs have risen, and the frost wedges have been driven. On the bare scarps of a high mountain, where the inner structure of the mass is laid open, the system of joints is seen to have determined the lines of crest, the vertical walls of cliff and precipice, the forms of buttress and recess, the position of cleft and chasm, the outline of spire and pinnacle. On the lower slopes, even under the tapestry of verdure which nature delights to hang where she can over her naked rocks, we may detect the same pervading influence of the joints upon the forms assumed by ravines and crags. Each kind of eruptive rock has its own system of joints, and these in large measure determine its characteristic type of scenery.