By what agents were these beds raised to their present elevation? Satisfactory solutions to all these enquiries will probably long remain desiderata in geology, though, in some instances, we can now arrive at a high degree of probability, by referring to causes in present ope-These scattered fragments or masses of rock, with beds of ration. loose stones and gravel, or of superficial sand or clay, are comprised by French geologists under the appropriate name of terrains de transport; a name, however, which cannot well be introduced into our language. We shall, therefore, divide them into three groups, adopting the names generally received. Scattered blocks of rock; diluvial beds or diluvium; and alluvial beds or alluvium; using the two latter without any reference to theory. Alluvial beds, consist of the sand, soil, or stones, brought down by rivers, and deposited in their beds, or scattered upon their banks, or carried into the sea or into lakes, forming deltas at the mouths of rivers. Diluvium, or diluvial beds, comprise both the scattered blocks of rock, and the beds of stone or gravel, that are carried into distant districts. They are called diluvial, on the supposition that they were transported during some great convulsion, by deluges or inundations; or, in other words that they were removed by causes more powerful than any which are seen in constant operation.

In order to form a more distinct idea of the causes which have transported the beds and fragments of stone into their present situation, we shall first consider the causes that are daily wearing down the loftiest mountains and cliffs, or undermining the solid ground on the sea shore. The disintegration of rocks and mountains is constantly taking place, by the incessant operation of atmospheric causes. The infiltration of water into the fissures of rocks, and its expansion by frost, often produces sudden falls of immense masses of rock. The slow operation of descending currents, excavates the soft beds in the lower parts of mountains; and the upper rocks, being undermined, fall, with a tremendous crash, into the vales below. Instances of this kind have occurred in our own times. By both these causes, the process of disintegration is rapidly going on in the Alps; but such is the immensity of these enormous mountain ranges, that ages pass away, before any diminution of their bulk is perceived.

In Alpine districts of great elevation, there is also another cause, more exposed to observation, which is ever in action during the summer months. The snow upon the mountains below the line of eternal congelation, when it begins to dissolve, forms numerous rivulets, that unite into large streams, and descend in cataracts with impetuous force, excavating deep ravines in the lower rocks. To use the words of Professor Playfair, they are "Nature's saws, incessantly at work, cutting down the mountains."

The vignette in the titlepage of this volume represents the upper part of the valley of Sext, in Savoy, in which the water, descending from the Alpine snow on the Buet and other mountains, is seen rush-