


CHAPTER VII.

ALTERATION AND DESTRUCTION OF THE ROCKS COMPOSING MOUNTAINS—CAUSES OF THE EROSION AND FALL OF MOUNTAINS.

E cannot terminate our general study of the Mountains without speaking of the continual alterations undergone by the rocks composing them, and the avalanches, landslips, or partial falls, resulting from these alterations.

To the unreflecting observer it seems that rocks and mineral substances are absolutely indestructible; that they represent, so to speak, the very type of duration and stability.

But a very little attention will suffice to show that rocks are incessantly being destroyed, and that every mineral substance exposed to the air and the rain is, perforce, doomed to perish.

Air, by its humidity, by its carbonic acid and its oxygen, exercises upon the rocks exposed to its influence a truly extraordinary power of transformation. No rock can resist the atmospheric action: limestone and basalt, granite and porphyry, nothing is secure from the chemical operation of air and water. What poets and rhetoricians call "the hand of Time," is, in truth, this chemical agency exercised during a prolonged period. The alternations of heat and cold are powerful auxiliaries of the air in the work of destruction. Cold shatters into fragments, owing to the congelation of the water which has interpenetrated them, those stones which the atmospheric action will afterwards decompose; it is a mechanical division, preparatory to and facilitative of a chemical decomposition.*

We proceed to enumerate the most striking examples of these various transformations.

* When water has infiltrated itself into a rock, and afterwards begins to congeal, it expands—the inevitable result of its change of condition and expansion—and frequently breaks and splits up the rock.