

ing in numerous cascades to the lower valley. But the most powerful effects of these cataracts may be observed during thunder storms, or after an unusually rapid thaw, when the upper rivulets overflow their accustomed boundaries, and carry with them the loose stones or masses of rock they meet in their descent, and dash them with inconceivable violence into the lower waterfalls, breaking down the solid rocks on each side, and deepening and enlarging the ravines into which they fall. The operation of this cause will be again referred to in the following chapter.

We need not indeed travel to the Alps to prove, that the mountains have been, and are still wearing down. The rocky fragments in Borrowdale; the deep ravines made by torrents in the sides of Skiddaw; the immense blocks of granite torn from Wastdale Crag, in Westmoreland, and scattered, many miles, over the adjacent counties offer striking proofs of this. The central parts of England had once, a greater elevation than at present; pebbles, formed of the Charnwood Forest rocks, are spread all over the midland counties. Masses of the rocks of Cumberland and Wales, more or less water-worn, occur almost every where under the alluvial plains of Cheshire and Lancashire. Beds of flint gravel, formed by disintegration of chalk rocks in which flints were imbedded, occur in many parts of England at a considerable distance from the sea, or from the chalk districts.

The transportation of these masses of rock, or beds of stones and gravel, cannot have been effected by any thing like the present action of rivers in England, and is generally referred to the more extensive operation of deluges, during great convulsions of the globe; but if we return to the Alps, and view the effects now taking place, we must admit, that it is not always easy to make the distinction between alluvial and diluvial depositions.

Innumerable blocks of granite and other primary rocks, torn from the central range of the Alps, are scattered over the calcareous mountains, at a great distance from this range, or are spread in heaps in many of the distant valleys. All of the great rivers that issue from the Alps, where the valleys open into the plains, have made deep sections in beds composed of the ruins of the mountains, and exhibit proofs of the vast destruction that has taken place. The river Doire, where it enters the plains of Piedmont, has cut through a mass of fragments more than 1500 feet in depth; these fragments consist of irregular blocks of granite, mica slate, and serpentine, frequently more than thirty cubic yards in extent, covered by smaller fragments, and by earthy matter from the decomposition of the softer rocks; the fragments decrease in size as their distance increases from the parent mountain.

Whoever has ascended the lofty eminences immediately below the highest pinnacles of the Alps, can scarcely fail to have received sensible proofs, of the daily and hourly disintegration of the mountains.