

valent misconceptions regarding the origin of the topography of the land. Men look not at the nature of the process, but at the magnitude of the results. The completed change stands before them in all its simple grandeur, and they naturally associate this unity of effect with the operation of some single potent cause.

But if subterranean co-operation is excluded, by what process has the gorge been formed? The answer to this question is furnished by the waterfall. For the sake of simplicity, let me suppose that the ravine is one of many which may be seen among the Old Red and Carboniferous sandstones of the Lowlands, that the strata are nearly horizontal, and that the same beds can be recognised on both sides. The ledge of stone, over which the water rushes at the edge of the fall, may be traced continuously across from side to side of the dell, thus again demonstrating that the gorge is not a mere fissure opened by some force acting from below (see Fig. 79). Behind the cascade, the face of rock is kept constantly dank and dripping, and rots away beneath the harder projecting ledge over which the water shoots. Portions of that ledge must from time to time break off, for large masses of it, some of them evidently not long dislodged, cumber the bottom of the dell. And here is the key to the history of the gorge. The waterfall is cutting its way backward, and slice after slice falls away from the front of the cliff over which it pours. The cascade, in this way, retreats up the stream. A few centuries ago it probably stood many feet or yards farther down, and a few centuries hence it will be found some way higher up. The ravine has consequently been produced, not by the opening of a fissure, but by the gradual erosion of the rocks as the waterfall has receded up the stream. The same process will continue, and the ravine will grow in length so long as