

exposed at the surface at the time the streams began to flow; otherwise their strongly marked geological structure would have influenced the lines of valley. We have seen that the Upper Old Red Sandstone, though now confined to the lower parts of the basin of the Tweed, evidently at one time spread far and wide over the Silurian area, and we may infer that probably on a surface of that formation, exposed by upheaval, the drainage-lines were determined. While the valleys were eroded, the general surface of the region was lowered by sub-aërial waste. In the end, cutting down through the cover of Old Red Sandstone, the streams dug into the Silurian strata underneath, but these strata could no longer influence the direction of the valleys, which accordingly continued to wind about in them with the curves that had been determined by the original inequalities in the overlying mantle of younger deposits.

Longitudinal valleys, whose trend really coincides with that of the Silurian strata on which they lie, are hardly to be found in any part of the Southern Uplands. The most conspicuous example is Glen App in Wigtownshire. The Stinchar and Muck Waters likewise run in a general sense parallel with the strike of the rocks. The course of the former stream runs for miles parallel to but not coincident with a large fault, which may have given rise to some long hollow at the surface, whereof the river at first took advantage. But instead of rigidly following that line, the water-course now lies some way on the north side of it, and actually cuts across it twice.

The valley system of the Southern Uplands, like that of the Highlands, bears everywhere the impress of its origin, not in subterranean movements but in superficial erosion. We can only speculate vaguely as to the form of the ground when this erosion began. Although merely a fragment of the table-land