

should probably find the Lower Silurian rocks of the Southern Uplands continued in endless anticlinal and synclinal folds towards the Highland border, becoming gradually more metamorphosed in that direction, and eventually passing into the grits, conglomerates, and slates of Callander, Aberfoyle, and the edge of the Highlands. But though continuous underneath, they may never have formed a continuous tract of hilly ground at the surface. On the contrary, there is good reason to believe that the very movements which plicated, fractured, and upheaved the areas to the north and south depressed this central region. And if this be true, then it would follow that the Midland Valley had its general position determined as far back as Palæozoic time.

The oldest strata anywhere exposed in the centre of Scotland, between the margins of the Highlands and of the Southern Uplands, belong to the Upper Silurian period. They are only seen in two or three limited areas, where they come to the surface from under the vast pile of sedimentary accumulations which elsewhere overlie them. In Lanarkshire, and the southern part of the Pentland Hills, they attain a thickness of probably not less than 3500 feet, but their base is nowhere seen, so that we do not know what their total depth may be. From their gentle inclination and gradual passage upward into the great overlying Old Red Sandstone in Lanarkshire, they were evidently deposited after the time of the chief disturbances that convulsed the Lower Silurian rocks. But their occasional crumpling and plication show that these disturbances had not finally ceased.

Next comes the Lower Old Red Sandstone—a pile of conglomerates, sandstones, shales, and volcanic rocks, attaining a total thickness in Kincardineshire of more than 20,000 feet. This vast mass of sedimentary and igneous material appears to have accumulated in a lake that spread over