

consisted of a mass of Silurian rocks, great part of which has since been removed by denudation.

In my opinion this region of North Wales has never been depressed beneath the sea since the beginning of the Permian epoch, excepting in part during a short episode in Glacial times (see p. 413). During that long lapse of geological ages, there was therefore ample time for the action of all the ordinary processes of subaerial denudation, the most powerful of which is the action of rain, rivers, and glaciers, and thus it happened that the Dee, a river of very ancient date, wandering hither and thither, by degrees deepened its channel in the same manner that the Rhine and the tortuous Moselle have cut out theirs, as described in my memoir 'On the Physical History of the Valley of the Rhine.' While this process was going on, minor tributary valleys were cut by rain and rivers in the tableland to right and left of the great main channel, and other smaller rivers in adjacent regions playing the same general part, this wide tableland of marine denudation was gradually turned by the scooping out of unnumbered valleys, into a region of hill and dale.

The Vale of Clwyd is of extreme antiquity, for it was a valley before the deposition of the New Red Sandstone, and it may be that the Clwyd has flowed ever since the end of the Triassic epoch, and the Conwy like the Dee is at least as old.

I cannot pretend to give a detailed account of the river systems of Scotland. My personal knowledge of the subject is less minute, and however minute it might be, the subject is difficult.¹ Something of the subject

¹ Professor Geikie, who fully realises the difficulty of the subject, nevertheless enters into it and explains it, as far as his present knowledge will allow, in his work, the 'Scenery and Geology of Scotland.'