

apparently always maintained its flatness either as sea-bottom or as terrestrial plains. As I have already remarked, there has been a remarkable persistence alike in exposure to and immunity from terrestrial disturbance. Areas that lay along lines of weakness have suffered repeatedly in successive geological revolutions, while tracts outside of these regions of convulsion have simply moved gently up or down without material plication or fracture.

By the time of the coal growths, the aspect of the European area had still further changed. It then consisted of a series of low ridges or islands in the midst of a shallow sea or of wide salt-water lagoons. A group of islands occupied the site of some of the existing high grounds of Britain. A long, irregular ridge ran across what is now France from Brittany to the Mediterranean. The Spanish peninsula stood as a detached island. The future Alps rose as a long, low ridge, to the north of the eastern edge of which lay another insular space, where now we find the high grounds of Bavaria and Bohemia. The shallow waters that wound among these scattered patches of land were gradually silted up. Many of them became marshes, crowded with a most luxuriant cryptogamic vegetation, specially of lycopods and ferns, while the dry grounds waved green with coniferous trees. By a slow intermittent subsidence, islet after islet sank beneath the verdant swamps. Each fresh depression submerged the rank jungles and buried them under sand and mud, where they were eventually compressed into coal. To this united co-operation of dense vegetable growth, accumulation of sediment, and slow subterranean movement, Europe owes her coal-fields.

All this time the chief area of high ground in Europe appears still to have lain to the north and north-west. The