

grew, and from this it is plain that the conditions attending the deposition of the Carboniferous strata, were in great part terrestrial.

In the Scottish Coal-measures there are in Edinburghshire over 3,000 feet of coal-bearing strata, so that the lowest bed of coal may be nearly three thousand feet below the highest bed, in the centre of the basin, where the strata are thickest. Most of the beds rise, or 'crop,' as miners term it, to the surface somewhere or other, this 'outcrop' being the result of disturbance of the strata and subsequent denudation, and it is by means of this disturbance and denudation that we are enabled, by an easy method, to estimate the thickness of the whole mass of strata, and to prove that one bed lies several thousands of feet below another.

In the Scottish area, during the formation of part of the Old Red Sandstone and of the Coal-measures, many volcanoes were at work; and thus we have dykes and bosses of felspathic trap and greenstone, and interstratifications of old lava streams, and beds of volcanic ashes mingled with common sedimentary strata. These, being often harder than the sandstones and shales with which they are interbedded, *have more strongly resisted denudation*, and now stand out in hilly ranges, like the Pentland, Ochil, and Campsie Hills, the Renfrewshire and Ayrshire Hills on the Clyde, or in craggy lines and bosses, like Salisbury Crags, the Lomonds of Fife, and the Garlton Hills in Haddingtonshire, which give great diversity to the scenery, without ever rising to the dignity of mountains.

Having thus briefly rehearsed the mode of formation of the more important Scottish formations, we may already begin to perceive what is the cause of the moun-