

Let us examine, then, how far the facts ascertained by observation accord with this view. It will at once be seen on inspecting the map and sections of this island appended to the present work, that there is an approach towards the structure required by this theory, but yet attended with irregularities, which must prevent our adopting it without great modification. In the first place, we will consider the favorable side of the question. If we examine the mountain ridges and chains of hills of the island, we shall find a gradation in height corresponding with their geological age, such as is above supposed; for the Grampian hills, consisting of primitive rocks, are the most elevated; next to these succeed the transition chains of South Scotland, Cumberland, and Wales; the third class in height will be occupied by the ranges of the carboniferous series; the fourth, by the oolites; the fifth, by the chalk; and the strata above the chalk will be found to form hills only of inferior elevation; a glance at the map will also shew that the bassets of all the strata above the new red sandstone form successive zones, fulfilling in a general manner (though not without irregularities) the conditions of the hypothesis.

But on the other hand, if we compare the basset edges of the same strata on the opposite sides of the great European basin (assuming the primitive ranges of our own island as one of its borders, and those of the Alpine chains as the other), we shall find their level totally different. The oolite, for instance, whose highest point with us is less than 1200 feet, attains an height of more than 4000 in the Jura chain, and in the mountains of the Tyrol has been observed by Mr. Buckland crowning some of the loftiest and most rugged summits of the Alps themselves. Again, if we compare the inclination of the strata at the edges of the basin, we shall find any thing but the supposed regular gradation from an highly elevated to an horizontal position; on the contrary, we shall see the horizontal beds generally reposing at once upon the truncated edges of those which lie at very considerable angles; and in place of the general conformity or parallelism which ought to prevail between the several formations, we shall observe in many instances appearances of the greatest irregularity in this respect; and these irregularities will be found to increase in approaching those chains which are the most elevated. In order to enable the reader to compare the real structure of a mineral basin on the great scale, with that resulting from the Wernerian hypothesis, we refer to the sections of England which accompany this work as exhibiting a portion of the western border of the principal basin of Europe, and subjoin in this place a rough sketch of the Alpine border of that basin, taken from a section of Ebel's.