

we may conclude that the beds of coal above and below the High Main, arise also, at a distance from it, proportionate to their depth beneath it.

The inequality of the surface does not affect the dip or inclination of the strata constituting the *coal-measures*; so that when they are interrupted or cut off by the intervention of a valley, they will be found on the sides of the opposite hills at the same levels, as if the beds had once been continuous. The conclusion is obvious, that the present irregularities of hill and dale have been occasioned by the partial destruction or dispersion of the uppermost strata constituting the coal-formation.

The beds of coal and of the other strata composing the coal-measures, are not every where of uniform thickness. They occasionally enlarge or contract so greatly, that it is only by an extensive comparison of the whole series, that any certainty is arrived at of that general uniformity of stratification which is known actually to exist. From the best information, they are calculated at 1620 feet in thickness.

The beds of coal, &c. hasset out at the surface one after the other; each on the *east* of that which immediately precedes it in point of age. These beds are sometimes visible; but are more commonly covered by alluvial soil.*

The whole surface of the coal-measures is calculated at 180 square miles. The greatest number of the numerous mines are situated on both sides the river Tyne, but are not far distant from its banks. There are several in the northern part of the district, and many about five miles south of the Tyne, about mid-way between Newcastle and Durham.

In the coal-measures forty beds of coal have been seen; but a considerable number of these are insignificant in point of thickness. The two most important beds are those distinguished by the names of *High Main* and *Low Main*. The thickness of the first is six feet, of the second six feet six inches. The High Main is about 60 fathoms above the Low Main coal, which latter is at St. Anthon's colliery, not far from Newcastle, 135 fathoms from the surface. Between them occur eight beds of coal, one of which is four feet thick, another is three feet thick. Seven beds have been seen under the Low Main, but the quality

* The alluvium contains masses of different rocks composing the whole district; and amongst them, portions of hard black *basalt* are found every where in abundance. From this stone, the ancient inhabitants of Britain formed the heads of their battle-axes, which are commonly called *celts*. They resemble in shape the tomahawks found in the South Sea islands. Barbed arrow-heads, neatly finished, and made of pale-coloured flint, are frequently picked up on the moors, and are called *elf-bolts*. It also contains portions of the trap rocks of the Cheviot range, and masses of fine-grained granite appear on the surface of the whole country.