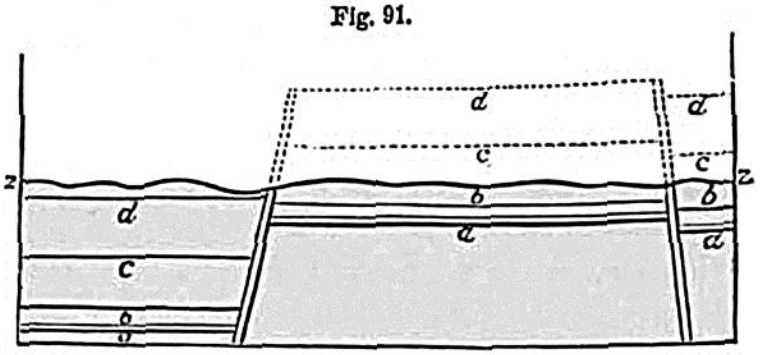
http://www.geology.19thcenturyscience.org/books/1859-Lyell-Elements/README.ht



curacy. Thus in the coal field of Ashby de la Zouch, in Leicestershire (see fig. 91), a fault occurs, on one side of which the coal beds *a b c d*

Fig. 91.




Faults and denuded coal strata, Ashby de la Zouch. (Mammat.)

rise to the height of 500 feet above the corresponding beds on the other side. But the uplifted strata do not stand up 500 feet above the general surface; on the contrary, the outline of the country, as expressed by the line *z z*, is uniformly undulating without any break, and the mass indicated by the dotted outline must have been washed away.* There are proofs of this kind in some level countries, where dense masses of strata have been cleared away from areas several hundred square miles in extent.

In the Newcastle coal district it is ascertained that faults occur in which the upward or downward movement could not have been less than 140 fathoms, which, had they affected the configuration of the surface to an equal amount, would produce mountains with precipitous escarpments nearly 1000 feet high, or chasms of the like depth; yet is the actual level of the country absolutely uniform, affording no trace whatever of subterranean movements.†

The ground from which these materials have been removed is usually overspread with heaps of sand and gravel, formed out of the ruins of the very rocks which have disappeared. Thus, in the districts above referred to, they consist of rounded and angular fragments of hard sandstone, limestone, and ironstone, with a small quantity of the more destructible shale, and even rounded pieces of coal.

Allusion has been already made to the shattered state and discordant position of the carboniferous strata in Coalbrook Dale (p. 62). The collier cannot proceed three or four yards without meeting with small slips, and from time to time he encounters faults of considerable magnitude, which have thrown the rocks up or down several hundred feet. Yet the superficial inequalities to which these dislocated masses originally gave rise are no longer discernible, and the comparative flatness of the existing surface can only be explained, as Mr. Prestwich has observed, by supposing the fractured portions to have been removed by water. It is also clear that strata of red sandstone, more than 1000 feet thick, which once covered the coal, in the same region, have been carried away

* See Mammat's Geological Facts, &c., p. 90, and plate.

† Conybeare's Report to Brit. Assoc. 1842, p. 381.