

(d) ISLE OF WIGHT.*

The general configuration and relations of the series of inclined strata in this Isle, will be sufficiently understood by referring to the section of the Isle of Purbeck (see Pl. 2, fig. 5.) It will be there seen that the strata exhibit their greatest inclination in a part of the chalk range, and that on either side† of this, the deviation from an horizontal position gradually decreases. The ingenious hypothesis of Mr. Webster, which indicates how such an appearance may be presented by the partial section of strata, which (were it possible to trace their inferior prolongations beneath the surface, and to supply the portions which may have been stripped off from above), might be found to be disposed in parallel curves of a double flexure, is indicated by the dotted lines following the supposed directions of those curves.

That such cannot have been the original position of these strata is demonstrably evident; for among the vertical strata of the plastic clay formation is one composed of a thick layer of rolled chalk flints, the accumulation of which in such a posture is obviously contrary to the laws of gravitation; other beds, also containing decided fragments imbedded in them, occur in the substrata beneath the chalk (particularly in the iron sand), and the whole series is decidedly of mechanical formation.

It remains, therefore, that the phenomena must be referred to some subsequent convulsion, which has violently produced either an elevation on one side, or a subsidence on the other, of these inclined masses; and from the form of flexure in the strata, the disturbing force (whatever may have been its nature) seems to have operated with the greatest energy in a lateral direction. The central line along which this force has acted, may be traced nearly east and west about 60 miles, from the eastern end of the Isle of Wight to Abbotsbury in Dorsetshire; for though the vertical chalk ends at Whitenose, an highly inclined saddle of the substrata may be traced in the continuation of the same line.

The first section of these inclined strata, in advancing east to west, is presented by Culver cliffs, a magnificent range of

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† In the Isle of Wight, this is only seen in the inferior strata; for the vertical portion of the superior strata being abruptly covered by horizontal beds of still later formation (see section of Alum bay, pl. 2, fig. 6), the gradual change from the vertical to the horizontal observable in Dorsetshire is here connected.