

actually takes place in the cliff, will be the result. In order to produce this agreement, we have only to suppose that the line of fault, during a part of its course, coincides with the lines of stratification, which cannot be considered as an impossible or even improbable circumstance.

The flexure of the innermost strata of the vertical series (see plate 27 of Sir H. Englefield's *Isle of Wight*), as accurately represented in Mr. Webster's excellent view of this spot, affords an additional confirmation of this hypothesis; for we might naturally expect to find a portion of the strata in which such a flexure occurs, transferred to this very place by the fault assumed. If any person will take the trouble of copying the curved and vertical strata as represented in Mr. Webster's delineation on two separate pieces of paper, then filling up the vertical strata as required in the above diagram, and lastly applying them together and slipping the latter under the former in the direction of the fault, he will at once perceive that this simple supposition is completely adequate to the solution of the actual phænomena.\*

\* The following observations of Mr. Webster on the strata of the chalk and flints at this remarkable spot are too important to be passed over.—This chalk I found to be exceedingly hard in the vertical part, and also in the curved; so much so that it will not mark, nor can the nail make any impression upon it; but at some distance from the curved strata, where the chalk is horizontal, it resumes its softness.

In the vertical strata, the chalk is far from being uniform in its texture; appearing as if formed by the union of masses of chalk of different qualities; some parts being denser than others, and of rather a darker colour. When large masses fall down, they frequently separate into roundish fragments, which leave a lumpy and concreted appearance. It might be called a *brecchia* chalk, composed of roundish lumps of hard chalk, cemented by chalk somewhat softer. In it were numerous veins of calcareous spar, well formed crystals of which were in the cavities.

The flints which were here in vertical layers, at the usual distance from each other, were not only much shattered, but appeared as if they had been reduced to fragments while the chalk was yet in a soft state; for the fragments were in general separated from each other with the chalk between them: nor was this latter only in small quantity, which might be supposed to have arisen from infiltration; but the broken pieces of flint were often at such distances, that it is impossible to conceive by what means they could have been so far removed, had the chalk been solid at the instant of fracture.

When the flints are in this state, they can scarcely be called nodules; they are rather collections of fragments, that lie in detached masses or groups; and the only circumstance that could induce me to suppose that they were originally entire nodules, is the sharpness of the fragments, and the groups assuming the same regular situations with respect to each other, that the nodules do.

Yet although the relative position of the parts of each nodule are frequently so entirely changed, that it is necessary to suppose more motion than could have taken place had the chalk been quite solid, this is by no