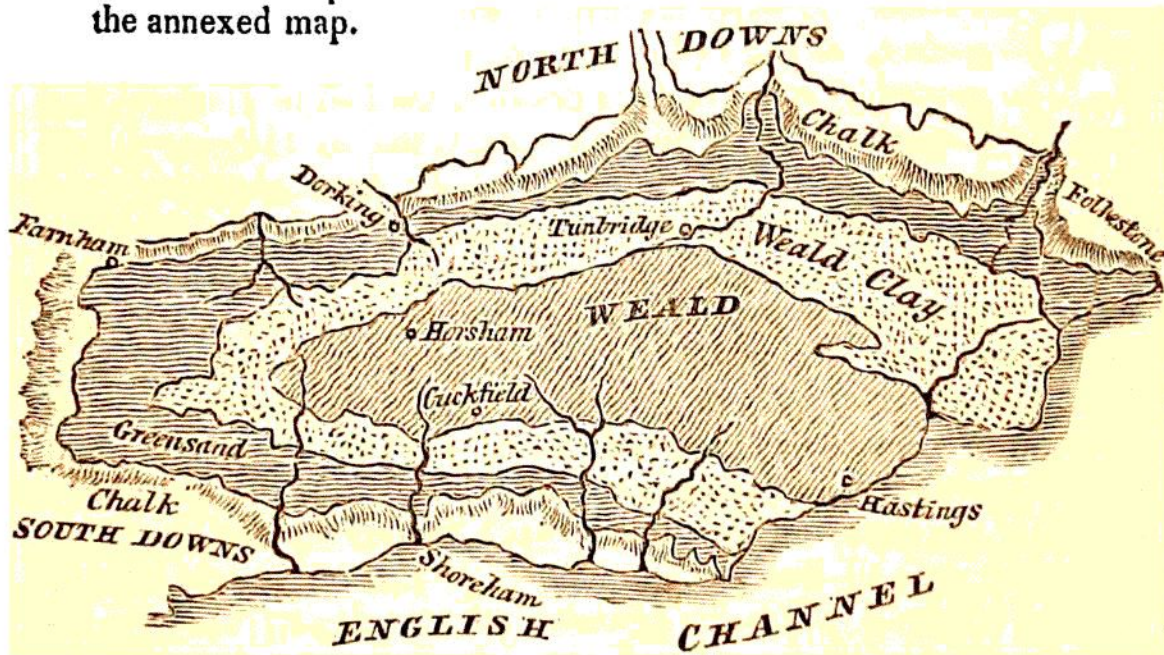


be marine formations, but the beds of limestone, conglomerate, sandstone, and clay, that compose the Sussex beds, or Wealden, contain, almost exclusively, the remains of fresh-water animals and terrestrial plants, and that over a surface exposed to observation nearly sixty miles in length, and from fifteen to twenty miles in breadth. The marine beds on which the Wealden rest, must, at a remote period, have been raised, a considerable height above the ocean, and become dry land, having extensive rivers, lakes, or estuaries filled with fresh water, in which the Wealden beds were deposited. Again, at a subsequent period, the whole must have sunk deep beneath the surface of the sea, and been covered by a deposition of chalk and other marine strata, a thousand feet or more in thickness. At a more recent epoch, the chalk, with the subjacent beds of Wealden, were raised to their present elevation above the neighbouring sea. However the present quiescent state of the earth may seem opposed to the admission of such great geological changes, we are irresistibly compelled to resort to these changes for a satisfactory solution of existing phenomena.

The relative position of the Wealden beds will be understood from the annexed map.



The chalk hills of the North and South Downs will be seen surrounding the Weald country. Below the chalk is the green sand, marked with waving lines, containing, like the chalk, marine fossils exclusively. The fresh-water formations of Weald clay and Hastings' sand and sandstone, rise from under the lower green sand. The Weald clay and Hastings' sand have generally been represented as distinct formations, but in reality the whole of the Wealden is composed of beds of clay, limestone, and sandstone, though in the outer part, marked with dots, the clay predominates. The sand and sandstone predominate in the central parts marked by diagonal lines, extending east and west from beyond Horsham to Hastings. In this