

400 to 800 feet, the strata diverge on each side towards the Downs, forming an *anticlinal axis*, and finally disappear beneath the lowermost beds of the chalk. (*Vide* the section, Pl. 9, fig. 1.) There are conclusive proofs that the wealden strata were originally covered by the chalk, and that their present position and appearance are attributable to changes which have taken place subsequently to the cretaceous epoch; the wealden having been lifted up and forced through the chalk, and thus effected the partial destruction of that formation.*

32. GEOLOGICAL PHENOMENA BETWEEN LONDON AND BRIGHTON.—The direct roads from London to Brighton pass over the whole series of deposits comprised in the above sketch, as well as those described in the first lecture. Proceeding from the Thames, the observer successively traverses the modern silt of the river—the ancient alluvium, containing remains of elephants and other large mammalia—and if he proceed by Reigate, his road, at Clapham and Tooting, lies over beds of clay and gravel, which are part of the ancient shores of the London basin. At Sutton he ascends the chalk hills of Surrey, and travels along elevated masses of the ancient ocean-bed just described. Arriving at the precipitous southern escarpment of the North Downs, a magnificent landscape, displaying the physical structure of the weald, and its varied and picturesque scenery, suddenly bursts

* See Geology of the South-East of England, chap. xi.