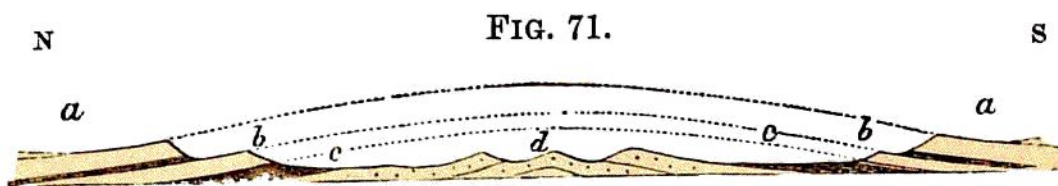


Chalk rises in bold escarpments, forming what are known as the North and South Downs. On the east it is bounded by the sea. There can be no doubt that the Chalk and the underlying formations of Upper Greensand, Gault, Lower Greensand, and Weald Clay originally extended across all the area of the Weald for a breadth of from twenty to forty miles from north to south, and nearly eighty from east to west (figs. 71 and 73). This vast mass, many hundreds of feet thick, has been swept away, according to an opinion formerly universal among geologists, by the wasting power of the sea, but, I believe, chiefly by atmospheric agencies; so much so, indeed, that I am convinced that all the present details, great and small, of the form of the ground, are due to the latter. The result is, that great oval escarpments of Lower Greensand, and outside of that of Chalk surrounding the Wealden area, rise steeply above the nearest plain, which is composed of the Weald Clay, from beneath which the Hastings Sands crop out, forming a central nucleus of hilly ground, in the manner shown in the following diagram, the height of which is purposely exaggerated so as to bring the features prominently before the eye.



*a a* Upper Cretaceous strata, chiefly Chalk, forming the North and South Downs; *b b* escarpment of Lower Greensand with a valley between it and the Chalk; *c c* Weald Clay, forming plains; *d* hills formed of Hastings Sand and Clay. The Chalk, &c. once spread across the country, as shown in the dotted lines.

Let us endeavour to realise how such a result may