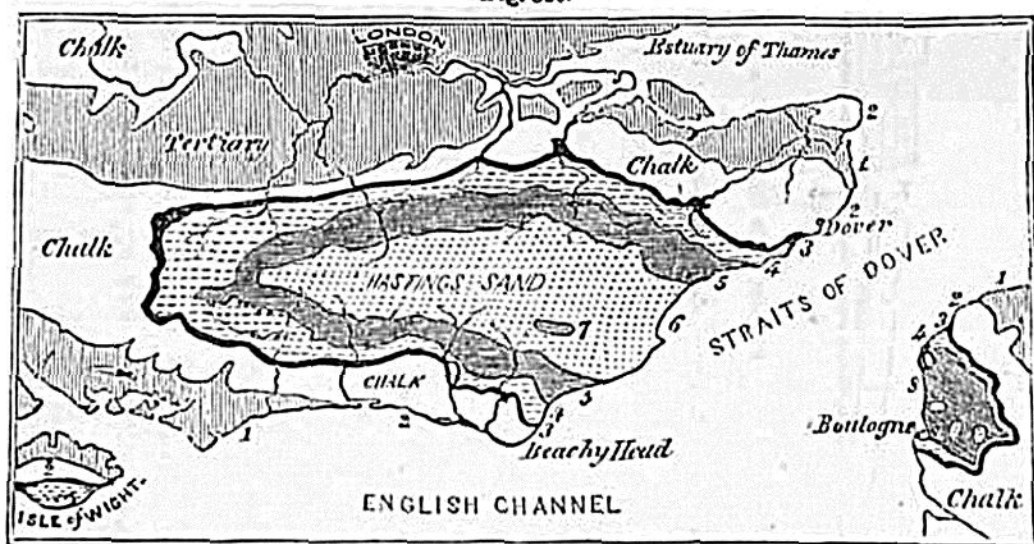


frequent absence of all signs of littoral denudation in the valley of the Seine itself is a negative fact of a far more striking and perplexing character. The cliffs, after being almost continuous for miles, are then wholly wanting for much greater distances, being replaced by a green sloping down, although the beds remain of the same composition, and are equally horizontal; and although we may feel assured that the manner of the upheaval of the land, whether intermittent or not, must have been the same at those intermediate points where no cliffs exist, as at others where they are so fully developed. But, in order to explain such apparent anomalies, the reader must refer again to the theory of denudation, as expounded in the 6th chapter; where it was shown, first, that the undermining force of the waves and marine currents varies greatly at different parts of every coast; secondly, that precipitous rocks have often decomposed and crumbled down; and thirdly, that terraces and small cliffs may occasionally lie concealed beneath a talus of detrital matter.

Denudation of the Weald Valley.—No district is better fitted to illustrate the manner in which a great series of strata may have been upheaved and gradually denuded than the country intervening between the North and South Downs. This region, of which a ground-plan is given in the accompanying map (fig. 320), comprises within it the whole of Sussex, and parts of the counties of Kent, Surrey, and Hampshire. The space in which the formations older than the White Chalk, or those from the Gault to the Hastings sands inclusive, crop out, is bounded everywhere by a great escarpment of chalk, which is continued on the opposite side of the channel in the Bas Boulonnais in France, where it forms the semicircular boundary of a tract in which older strata also appear at the surface. The whole of this district may therefore be considered geologically as one and the same.

Fig. 320.



Geological map of the southeast of England and part of France, exhibiting the denudation of the Weald.

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|---------------------------------------|----------------------------|
| 1. [Box 1] Tertiary. | 5. [Box 5] Weald clay. |
| 2. [Box 2] Chalk and upper greensand. | 6. [Box 6] Hastings sands. |
| 3. [Box 3] Gault. | 7. [Box 7] Purbeck beds. |
| 4. [Box 4] Lower Greensand. | 8. [Box 8] Oolite. |