

than the former, and occupied by the argillaceous beds which we have called the Weald clay.

A central and third range of hills, still nearly of the same height, forms the nucleus of the whole district. It is composed of the thick strata of the iron sand formation; but in some places near the valley of the Rother, which traverses the centre of this range, a series of argillo-calcareous beds has been dug into for the sake of the limestones they afford: these form the base on which the iron sand reposes, and must be considered as introductory to, if not identical with, the upper part of the Purbeck limestone series.

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A very interesting geological phænomenon is presented by the course of the rivers watering this district, and the arrangement of the vallies which convey them. We have already noticed that the two grand vallies of this district—that of Holmesdale, and that of the Weald clay—are parallel to the direction of the strata; but these do not form the channels through which any of the more important streams seek the sea, for these generally have their source in the central ridge of iron sand; and flowing thence both to the north and to the south, in directions nearly at right angles both to these vallies and the strata, traverse the ranges of green sand and chalk, through gorges opened across them, in their way to join the Thames on one side and the Channel on the other; instead of being turned by their escarpments into the great subjacent vallies, as they would be if the fractures in those escarpments were repaired, and forced to empty themselves into Romney marsh and Pevensey level. In no place perhaps is the important fact of a double system of vallies crossing each other transversely—a fact which we shall hereafter see to be of the greatest consequence with reference to theories on the origin of the present inequalities of the earth's surface) more strikingly displayed. In treating of the chalk ranges, we have already noticed the rivers which thus break through their line.

In order to trace the several formations we have above generally indicated, with the greater certainty in their course through the interior, we shall derive the clearest elucidation of the structure of the ranges composed by them, in beginning with the sections presented along the line of the coast. Without indeed attending to those, we should be in some danger, from the resemblance of some of the beds, to confound the great formations of the green sand and iron sand, or to mistake the hard and sandy varieties of the chalk marle for members of the green sand; but if we first attend to the structure