

CHAPTER I.

THE CHALK FORMATION.

Section I.

(a) *General and introductory observations on the connexion of the Chalk with the more recent beds.* This rock, which forms one of the most remarkable features among the deposits of England, both on account of its extent and its perfectly distinctive characters, follows immediately beneath the strata described in the preceding chapter. In general, an interval seems to have taken place between the completion of this formation, and the deposition of those which repose upon it; and the surface of the chalk, at the line of junction, usually bears marks of having undergone, during that period, a partial destruction subsequently to its consolidation; a bed of debris being spread over it, consisting chiefly of flints washed out of its mass, and the surface being irregularly worn into frequent cavities, many of them of considerable depth, filled with similar debris.* On this debris rests the Plastic clay, or the

* The chalk of the numerous quarries, and where the roads are cut through it, along the south side of the Thames, as at Rochester, Gravesend, North Fleet, Greenhithe, &c. is remarkable at its junction with the sand and gravel [of the Plastic clay formation] for the deep indentations on its surface, which upon examination are ascertained to be sections of long furrows and of cavities, that were apparently occasioned by the powerful action of water on the surface of the chalk, prior to the deposition of the superior strata. (G. T. vol. ii. p. 176.)

The enormous quantity of completely rolled and rounded chalk-flint pebbles that occur in the Plastic clay formation on the south of London, corroborate the arguments adduced by M. M. Cuvier and Brongniart, from the irregular projections and furrowed surface of the French chalk, and from the fragments of chalk forming a breccia with the Plastic clay at Meudon, to prove the consolidation of the chalk to have been completed before that partial destruction of its upper strata by the force of water, to which they justly attribute these furrows and the Meudon breccia. These English beds of chalk-flint pebbles (the wreck of strata thus destroyed) afford additional evidence of the immense scale on which this aqueous destruction was carried on, and confirm also the conjecture (which by them is chiefly grounded on the total difference of the organic remains in the two formations), that a long period of time has probably intervened between the deposition of the chalk and the plastic clay. (G. T. vol. iv. p. 301.)