

The boundary of the first of these basins may be stated generally as a line running from the inner edge of the chalk south of Flamborough Head in Yorkshire nearly south till it crosses the Wash, then south-west to the upper part of the valley of the river Kennet near Hungerford in Wiltshire, and thence tending south-east to the north of the Thames and the north-west angle of the Isle of Thanet; in all these directions the bounding line is formed by the chalk hills; on the east side the boundary is the coast of the German ocean.

The boundaries of the Isle of Wight basin may be generally assigned by the following four points: on the north, a few miles south of Winchester; on the south, a little north of Carisbrook in the Isle of Wight; on the east, Brighton; and on the west, Dorchester. It is every where circumscribed by chalk hills, excepting where broken into by the channel between the Isle of Wight and the main land.

(b) *Subdivisions.* The nature of the beds occupying these areas, has before been generally stated; we have now to consider them more attentively in the detail; in doing this we shall find the occurrence of a very thick bed, or rather formation of clay, marked by peculiar fossils, near the middle of the series, to afford a very convenient division. This bed has been called the London clay, as forming the substratum of the metropolis. The beds above this are remarkably distinguished by the agreement of the greater part of the shells they contain, with those still existing in the adjacent seas; three-fourths of the fossils exhibiting this agreement, while scarcely one-fourth of those in the London clay, and still fewer in the lower strata, can be referred to such originals. Moreover it is in this upper part of the series in the Isle of Wight, that that most important phenomenon, the alternation of beds containing the shells peculiar to fresh water with those of marine origin, occurs: hence the following subdivisions of the strata above the chalk will naturally result.

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| A. above the London clay | } 1. Upper marine formations. |
| | } 2. Freshwater formations. |
| B. | } 3. The LONDON CLAY. |
| | } 4. Plastic clay and sand between the London clay and the chalk. |

As a farther proof of the propriety of this division, it deserves attention that in the Isle of Wight, where a great convulsion has elevated the chalk into a vertical position, the London clay has been similarly affected; while the upper strata are placed horizontally over these, and have been un-