

CHAPTER XVII.

ON THE RECENT TERTIARY STRATA, OR WHAT ARE CALLED BY
SOME GEOLOGISTS QUATERNARY.

The Methods for determining the relative Age of Formations explained, and their Value examined.—Evidence from Position.—Evidence from Organic Remains.—System of M. Deshayes founded on Fossil Shells.—Uncertainty attending the Evidence from Organic Remains.—Arbitrary Classifications of Naturalists.—Supposed Limits to the Transmutation of Species of Molluscos Animals examined.—System of M. Elie de Beaumont.—Geological Age of Palæotheria—of Mastodons—of Elephants.—Recent Tertiary Strata of the Basin of the Loire.—Of the Subappennine Ranges.—Of the Freshwater Formations in the Appennine Valleys.—Remarkable Intermixture of the Skeletons of Whales, Elephants, &c. at Castello Arquata explained by what has taken place in England.—Freshwater Limestone of Æningen, one of the most recent Tertiary Formations.—Human Skeletons erroneously supposed to have been found there.—Observations on the relative Age of the Strata of Æningen.

AFTER the discovery of the true character of the tertiary strata of the Paris basin, and of England, it was, for some time, believed that the former was a complete representation of the whole tertiary formations in every country ; and that the strata of the London basin, and of the Isle of Wight, represented a portion of the strata of the Paris basin. It is now, however, ascertained, that in the central and southern parts of France, and in many other countries, there are extensive tertiary formations which contain organic remains, very different from those in the Paris basin.

These strata are, with much probability, believed to have been deposited in detached lakes or estuaries, at a subsequent period to that in which the Paris basin was laid dry.

It appears also probable, that these newer tertiary strata are of different ages ; and that some of them approach in their characters to the depositions at present forming on the shores of the ocean, or in the deltas of great rivers, or in freshwater lakes.

The relative antiquity of these recent tertiary formations, is a subject of high geological interest, as it is connected with the history of the latest revolutions of the globe, and the catastrophes that have destroyed the ancient races of its inhabitants.

But how are the relative ages of the strata in different tertiary basins to be ascertained ? The relative ages of two groups or formations of strata, or of two strata in distant parts of the same series, may be determined by two methods : one founded upon the evidence of position, the other upon that of organic remains. As the comparative value of these two kinds of evidence, and their relations to each other, has nowhere, that I know of, been briefly and clearly stated, for the benefit of the geological student, I trust I shall be excused for attempting to give a simple and familiar explanation of each method.