

CHAPTER XVI.

ON THE LOWER OR MORE ANCIENT TERTIARY STRATA.

Formation of Tertiary Strata in Lakes or Inland Seas.—Lakes of North America.—Falls of Niagara.—Alternations of Marine and Fresh water Strata.—Arrangement of the Tertiary Strata in the Paris Basin.—Plastic Clay and London Clay.—Geology of the lower Vale of the Thames.—Remains of Crocodiles and the Nautilus in London Clay.—Molasse of Alpnach in Switzerland, with Coal and Teeth of the Mastodon.—*Calcaire Grossier*, or Coarse Limestone of the Paris Basin, supposed to be of the same Age as the London Clay.—*Calcaire Silicieux*.—Gypsum and Gypseous Marl of the Paris Basin, containing Bones of numerous extinct Species of Land Quadrupeds.—Remarks on their discovery and Organization by Baron Cuvier.—Marine Sandstone.—Millstone.—Upper Freshwater Formation.—Tertiary Strata in the Isle of Wight.—Crag of Norfolk, its true Geological Position not determined.—Cliffs of Brighton.

The name of tertiary has been given with much propriety to all the strata that are more recent than the secondary; the term is intelligible, and ought not to be changed without sufficient reason; the introduction of new names in science serves only to perplex the student, and is attended with no advantage. The name of supercretaceous, which has recently been applied to the tertiary strata, is peculiarly inappropriate, as these strata may cover any of the lower rocks, and in Auvergne they may be seen resting on granite. If a new name were necessary, post-cretaceous should have been chosen; as all geologists are agreed, that the tertiary strata were deposited after chalk.

THE tertiary formations comprise all the regular strata of limestone, marl, clay and sandstone, that have been deposited after chalk. It is only since the commencement of the present century that they have attracted the notice of geologists: their true nature was before unknown, or they were supposed to be local and alluvial depositions. It is now discovered that tertiary formations are widely spread over many parts of the globe, and are often of considerable thickness.

The first circumstance which proved that the tertiary beds were distinct from the secondary, was the discovery that many of these beds contain the bones of the higher order of animals, as perfect in their organization as any of the existing species of land quadrupeds. The tertiary beds were farther remarkable, for presenting frequent alternations of beds, containing the remains of marine animals, with other beds that contain exclusively the remains of land animals, and plants, and fresh water shells: hence the latter beds were denominated fresh water formations. A more accurate examination of the secondary strata, has since been discovered, that fresh water formations occur also among the more ancient strata, but their characters