

*Composition.*—Arenaceous deposits predominate in most parts of the tertiary system; argillaceous types, however, abound in particular districts; calcareous rocks, marine or of freshwater origin, pure, sandy, shelly, or siliceous, lie in many basins; marls and gypsum are locally accumulated. Marine, freshwater, and terrestrial exuviæ occur in strata of all these descriptions; and so much information is now accumulated concerning them, and so many comparisons have been made between tertiary and modern products, that it is probable the origin of no part of the series of strata is so well understood. The sea, sudden land floods, river currents, lakes, springs, have all contributed to the accumulation of the supracretaceous strata, and left characteristic marks of their action. But confining our views, at this time, to the composition of the masses, those distinctions of the origin of the deposits vanish, for it is not directly by the mineral nature of the strata that their freshwater or marine origin could be known.

The arenaceous rocks are either in the form of conglomerates, holding fragments, pebbles, and enormous boulders of the neighbouring mountains, as the molasse of the northern slope of the Alps; or appear as sand (rarely indurated to sandstone), tinted of many varying hues, as at Alum Bay, in the Isle of Wight, where the effect of the many colours imparted by oxide of iron is of a magical description; left white and colourless, as in the Dorsetshire heaths and forests, and at Fontainbleau; or dyed of a general green, as near Paris, at Reading, Sudbury, &c., by silicate of iron. Beds of rolled pebbles (flints from the chalk) and layers of lignite appear not unfrequently among them, and are generally accompanied by sulphuret of iron and clay (Isle of Wight). Mica occurs, but is not plentiful, in these tertiary sands, which convey the impression of much and long abrasion in water, and various exposure to oxygenating processes.

The argillaceous sediments of the tertiary system