

other hand, the associated unknown species belong, for the most part, to *genera* which are now most largely developed in equinoctial regions, as, for example, the genera *Cancellaria*, *Cassidaria*, *Pleurotoma*, and *Cypræa*.

On comparing the fossils of the tertiary deposits of Paris and London with those of Bordeaux, and these again with the more modern strata of Sicily, we should at first expect that they would each indicate a higher temperature in proportion as they are situated farther to the south. But the contrary is true; of the shells belonging to these several groups, whether freshwater or marine, some are of extinct, others of living species. Those found in the older, or Eocene, deposits of Paris and London, although six or seven degrees to the north of the Miocene strata at Bordeaux, afford evidence of a warmer climate; while those of Bordeaux imply that the sea in which they lived was of a higher temperature than that of Sicily, where the shelly strata were formed six or seven degrees nearer to the equator. In these cases the greater antiquity of the several formations (the Parisian being the oldest and the Sicilian the newest) has more than counterbalanced the influence which latitude would otherwise exert, and this phenomenon clearly points to a gradual and successive refrigeration of climate.

Siberian Mammoths.—It will naturally be asked, whether some recent geological discoveries bringing evidence to light, of a colder, or as it has been termed “glacial epoch,” towards the close of the tertiary periods throughout the northern hemisphere, does not conflict with the theory above alluded to, of a warmer temperature having prevailed in the eras of the Eocene, Miocene, and Pliocene formations. In answer to this enquiry, it may certainly be affirmed, that an oscillation of climate has occurred in times immediately antecedent to the peopling of the earth by man; but the proofs of the intercalation of a less genial climate at an era when nearly all the marine and terrestrial testacea had already become specifically the same as those now living, by no means rebut the conclusions previously drawn, in favour of a warmer condition of the globe, during the ages which elapsed while the tertiary strata were deposited. In some of the most superficial patches of sand, gravel, and loam, scattered very generally over Europe, and containing recent shells, the remains of extinct species of land quadrupeds have been found, especially in places where the alluvial matter appears to have been washed into small lakes, or into depressions in the plains bordering ancient rivers. Similar deposits have also been lodged in rents and caverns of rocks, where they may have been swept in by land floods, or introduced by engulphed rivers during changes in the physical geography of these countries. The various circumstances under which the bones of animals have been thus preserved will be more fully considered hereafter*; I shall only state here, that among the extinct mammalia thus entombed, we find species of the elephant,

* Book iii. chaps. 47, 48, &c.