

rhinoceros, hippopotamus, bear, hyæna, lion, tiger, monkey (*macacus* *), and many others; consisting partly of genera now confined to warmer regions.

It is certainly probable that when some of these quadrupeds abounded in Europe, the climate was milder than that now experienced. The hippopotamus, for example, is now only met with where the temperature of the water is warm and nearly uniform throughout the year, and where the rivers are never frozen over. Yet when the great fossil species (*Hippopotamus major* Cuv.) inhabited England, the testacea of our country were nearly the same as those now existing, and the climate cannot be supposed to have been very hot. The bones of this animal have lately been found by Mr. Strickland, together with those of a bear and other mammalia, at Cropthorn, near Evesham, in Worcestershire, in alluvial sand, together with twenty-three species of terrestrial and freshwater shells, all, with two exceptions, of British species. The bed of sand, containing the shells and bones, reposes on lias, and is covered with alternating strata of gravel, sand, and loam. †

The mammoth also appears to have existed in England when the temperature of our latitudes could not have been very different from that which now prevails; for remains of this animal have been found at North Cliff, in the county of York, in a lacustrine formation, in which all the land and freshwater shells, thirteen in number, can be identified with species and varieties now existing in that county. Bones of the bison also, an animal now inhabiting a cold or temperate climate, have been found in the same place. That these quadrupeds, and the indigenous species of testacea associated with them, were all contemporary inhabitants of Yorkshire, has been established by unequivocal proof. The Rev. W. V. Vernon Harcourt caused a pit to be sunk to the depth of twenty-two feet through undisturbed strata, in which the remains of the mammoth were found imbedded, together with the shells, in a deposit, which had evidently resulted from tranquil waters. ‡

In the valley of the Thames, as at Ilford and Grays, in Essex, bones of the elephant and rhinoceros occur in strata abounding in freshwater shells of the genera *Unio*, *Cyclas*, *Paludina*, *Valvata*, *Ancylus*, and others. These fossil shells belong for the most part to species now living in the same district, yet some few of them are extinct, as, for example, a species of *Cyrena*, a genus no longer inhabiting Europe, and now entirely restricted to warmer latitudes.

When reasoning on such phenomena, the reader must always bear in mind that the fossil individuals belonged to *species* of elephant, rhinoceros, hippopotamus, bear, tiger, and hyæna, distinct from those which now dwell within or near the tropics. Dr. Fleming, in a discussion on this subject, has well remarked that a near resem-

* *Macacus pliocenus*, Owen, Brit. Foss. Mam. Intr. p. 37. found with the extinct elephant, &c. in the modern freshwater beds at Grays Thurrock (Essex), in the valley of the Thames.

† Geol. Proceedings, No. xxxvi. June, 1834.

‡ Phil. Mag., Sept. 1829, and Jan. 1830.