

or four hundred species of shells, very different from the Eocene testacea, and of which a large proportion, although a minority of the whole number, are recent, besides many corals, echini, foraminifera, and fish, but as yet no relic decidedly mammalian.

In the shelly sand, provincially termed "Red Crag," in Suffolk, which immediately succeeds the coralline, constituting a newer member of the same tertiary group, about 250 species of shells have been recognised, of which a still larger proportion are recent. They are associated with numerous teeth of fish; but no signs of a warm-blooded quadruped had been detected until 1839, when the teeth of a leopard, a bear, a hog, and a species of ruminant, were found at Newbourn, in Suffolk, under circumstances not quite unequivocal, yet which leave scarcely any doubt that they were of the age of the Red Crag.\*

Of a still newer date is the Norwich Crag, a fluviomarine deposit of the Pliocene epoch, containing a mixture of marine, fluviatile, and land shells, of which 60 per cent. or more are recent. These beds, since the time of their first investigation, have yielded a supply of mammalian bones of the genera mastodon, elephant, rhinoceros, pig, horse, deer, ox, and others, the bodies of which may have been washed down into the sea by rivers draining land, of which the contiguity is indicated by the occasional presence of terrestrial and freshwater shells.

*Fossil quadrumana.* — Until within a few years (1836, 1837), not a single bone of any quadrumanous animal, such as the orang, ape, baboon, and monkey, had been discovered in a fossil state, although so much progress had been made in bringing to light the extinct mammalia of successive tertiary eras, both carnivorous and herbivorous. The total absence of these anthropomorphous tribes among the records of a former world, had led some to believe that the type of organisation most nearly resembling the human, came so late in the order of creation, as to be scarcely, if it all, anterior to that of man. That such generalisations were premature, I endeavoured to point out in the first edition of this work †, in which I stated that the bones of quadrupeds hitherto met with in tertiary deposits, were chiefly those which frequent marshes, rivers, or the borders of lakes, as the elephant, rhinoceros, hippopotamus, tapir, hog, deer, and ox, while species which live in trees are extremely rare in a fossil state. I also hinted, that we had as yet no data for determining how great a number of the one kind we ought to find, before we have a right to expect a single individual of the other. Lastly, I observed that the climate of the more modern (or Post-Eocene) tertiary periods in England was not tropical, and that in regard to the London clay, of which the crocodiles, turtles, and fossil fruits, implied a climate hot enough for the quadrumana, we had as yet made too little progress in ascertaining what were the Eocene pachydermata of

\* See notice by the Author, and Professor Owen, Taylor's Annals of Nat. Hist. Nov. 1839.

† See Principles of Geology, 1st ed. 1830, vol. i. p. 152.