

feet. The secondary epoch can accordingly in all probability not have been half so long as the primary epoch.

Just as Fishes prevailed in the primary epoch, *Reptiles* predominated in the secondary epoch over all other vertebrate animals. It is true that during this period the first birds and mammals originated; at that time, also, there existed important amphibious animals, especially the gigantic Labyrinthodonts, in the sea the wonderful sea-dragons, or Halisaurii, swam about, and the first fish with bones were associated with the many primæval fishes (Sharks) and enamelled fish (Ganoids) of the earlier times; but the very variously developed kinds of reptiles formed the predominating and characteristic class of vertebrate animals of the secondary epoch. Besides those reptiles which were very nearly related to the present living lizards, crocodiles, and turtles, there were, during the mesolithic period, swarms of grotesquely shaped dragons. The remarkable flying lizards, or Pterosaurii, and the colossal land-dragons, or Dinosaurii, of the secondary epoch, are peculiar, as they occur neither in the preceding nor in the succeeding epochs. The secondary epoch may be called the era of *Reptiles*; but on the other hand, it may also be called the era of *Pine Forests*, or more accurately, of the *Gymnosperms*, that is, the epoch of *plants having naked seeds*. For this group of plants, especially as represented by the two important classes—the pines, or *Coniferæ*, and the palm-ferns, or *Cycadææ*—during the secondary epoch constituted a predominant part of the forests. But towards the end of the epoch (in the Chalk period) the plants of the pine tribe gave place to the leaf-bearing forests which then developed for the first time.

The fourth main division of the organic history of the