In passing from the Amphibia to the next class of Vertebrata, namely, Reptiles, we observe a very considerable advance in the progress of organization. All the double-nostriled animals (Amphirrhina) up to this time considered, and more especially the two larger classes of Fish and Batrachia, agree in a number of important characteristics, which essentially distinguish them from the three remaining classes of Vertebrata—Reptiles, Birds, and Mammals. During the embryological development of these latter, a peculiarly delicate covering, the *first fœtal membrane*, or *amnion*, which commences at the navel, is formed round the embryo; this membrane is filled with the amnion-water, and encloses the embryo or germ in the form of a bladder. On account of this very important and characteristic formation, we may comprise the three most highly developed classes of Vertebrata under the term *Amnion-animals* (Amniota). The four classes of double-nostriled animals which we have just considered, in which the amnion is wanting (as is the case in all lower Vertebrate animals, single-nostriled and skull-less animals), may on the other hand be opposed to the others as *amnion-less animals* (Anamnia).

The formation of the fœtal membrane, or amnion, which distinguishes reptiles, birds, and mammals from all other Vertebrata, is evidently a very important process in their ontogeny, and in the phylogeny which corresponds with it. It coincides with a series of other processes, which essentially determine the higher development of Amnionate animals. The first of these important processes is the *total loss of gills*, for which reason the Amniota, under the name of *Gill-less animals* (Ebranchiata), were formerly