

as the gills wither and the lungs are developed. If, while this change is going on, and while both sets of organs are together executing the function of aeration, all farther development were prevented, we should have an amphibious animal, fitted for maintaining life both in air and in water. It is curious that this precise condition is the permanent state of the *Siren* and the *Proteus*, animals which thus exemplify one of the forms of transition in the metamorphoses of the Frog.

In the rudimental form of the feet of serpents, which are so imperfectly developed as to be concealed underneath the skin, and to be useless as organs of progressive motion, we have an example of the first stage of that process, which, when carried farther in the higher animals, gives rise to the limbs of quadrupeds, and which it would almost seem as if nature had instituted with a prospective view to these more improved constructions. Another, and a still more remarkable instance of the same kind, occurs in the rudimental teeth of the young of the Whale, which are concealed within the lower jaw, and which are afterwards removed, to give place to the curious filtering apparatus, which occupies the roof of the mouth, and which nature has substituted for that of teeth, as if new objects, superseding those at first pursued, had arisen in the progress of development.

Birds, though destined to a very different sphere of action from either fishes or reptiles, are yet observed to pass, in the embryonic stage of their existence, through forms of transition, which successively resemble these inferior classes. The brain presents, in its earliest formation, a series of tubercles, placed longitudinally, like those of fishes, and only assuming its proper character at a later period. The respiratory organs are at first branchiæ, placed, like those of fishes, in the neck, where there are also found branchial apertures similar to those of the lamprey and the shark; and the heart and great vessels are constructed like those of the tadpole, with reference to a branchial circulation. In their conversion to the purposes of aerial respiration, they under-