

Moneron to the Amphioxus, from this to the Primæval Fish, from the Primæval Fish to the first Mammal, and again, from the latter to Man, also require for their historical development a succession of periods probably comprising many thousands of millions of years. (Compare vol. i. p. 129.)

Those processes of development which led to the origin of the most Ape-like Men out of the most Man-like Apes must be looked for in the two adaptational changes which, above all others, are distinctive of Man, namely, *upright walk* and *articulate speech*. These two *physiological* functions necessarily originated together with two corresponding *morphological* transmutations, with which they stand in the closest correlation, namely, the *differentiation of the two pairs of limbs* and the *differentiation of the larynx*. The important perfecting of these organs and their functions must have necessarily and powerfully reacted upon the differentiation of the brain and the mental activities dependent upon it, and thus have paved the way for the endless career in which Man has since progressively developed, and in which he has far outstripped his animal ancestors. (Gen. Morph. ii. p. 430.)

The first and earliest of these three great processes in the development of the human organism probably was the *higher differentiation and the perfecting of the extremities* which was effected by the *habit of an upright walk*. By the fore feet more and more exclusively adopting and retaining the function of grasping and handling, and the hinder feet more and more exclusively the function of standing and walking, there was developed that contrast between the hand and foot which is indeed not exclusively characteristic of man, but which is much more strongly