

each piece will grow into a perfect star-fish. They exist, to a limited extent, in the lizard, which, if you cut off its tail, a new one will grow in its place; they exist in a limited extent in the pig's tail, which may, it is said, be grafted into its back. A rat's tail has been made to grow upon its nose. The spur of a game cock has grown in the eye of an ox. Proper growth, physiologists say, arises from the polarity of the gemmules, which, if disturbed abnormally, will produce abnormal growths. Thus hair has been found growing within the cavity of the skull, and teeth within the orbit of the eye. Variations, therefore, from an original type, are confined within certain fixed limits, and are brought about by calling into activity latent forces, or by making latent other forces which are usually active, and are confined by the limits set by cell structure.

I have said enough to show you, my readers, that if there was an evolution of species, brought about by gradual development, there could be neither subkingdoms, nor species, nor genera, but a mob of animals differing from each other by scarcely perceptible degrees, and reaching from the protoplasm up to man.

Let us suppose for a moment that by some freak of nature the gorilla gave birth to a child. What would happen? But few animals take charge of any offspring except their own. How could this child ever reach manhood? The young gorilla neither needs nor receives any great amount of care. In a few months it can take care of itself. Now, abandoning every other objection, how is this first human creature,—this young Adam,—to get on? It must starve, or perish of disease, if not of neglect, or become food for some beast of prey. Let us suppose that this process of humanization, instead of springing into existence suddenly, went on slowly by imperceptible degrees, and thus spanning by two hundred thousand links the mighty chasm

which separates the most intellectual of brutes from the least intellectual of men. What has become of all those missing links, that would look so like human beings, and yet would be something less? They are nowhere to be found. There are none such, and yet without them, the chasm could not be bridged.

If in the process of time the irrational animal had reached the border line which separates him from rational and responsible being, and had begun to cross over that border line, he must continue to do so. No matter how long he might be in traversing the immense space to be crossed by the lower forms of life before it reaches the line of man, once the limitary line is reached, and is crossed, the march must be perpetual. Why then do we not see those processes of transmutation going forward? Why have all those animals which stand between man and the gorilla disappeared? All the Anthropoids are four-handed. Professor Huxley says that there are two distinctions between men and apes. The difference in the teeth, and in the great toe. Men, according to this view, at one time travelled upon all fours; ran into their dens; defended themselves, and seized their prey, with their teeth. By standing upright, muscular changes took place, which converted thumbs into great toes, and enabled them to walk with ease upon two feet, instead of upon four hands. Then they used their hands, instead of their teeth, for the purpose of grasping their prey. Tusks being no longer used for their primitive purpose, gradually grew shorter. Instead of protruding across each other from the corners of the mouth, they were gradually shortened down, or up, by disuse, to the line of the other teeth. The long muscle which extends from the lower part of the tibia along the sole of the foot to the great toe, in man, is divided into three in the orang, and extends to the three middle toes, and in the gorilla, to the first,