

subsisting upon some other species of animals. Starvation and disease take away the less fit. The stronger and more vigorous escape extermination. The fittest survive, and may survive, in such a way, and by such means as produce important modifications in the species. The hog that is evolved into a tapir, when the means of subsistence becomes scarce, first devours the appropriate kind of food that is within easy reach; but when this is gone, it is obliged to reach higher and higher, until the means of subsistence is no longer accessible to the smaller animals. These, then, perish from starvation, leaving those that are the largest, and possessed of the longest probosces, as the only survivors and propagators of a race after their own type.

Mr. Darwin instances the appearance of the birds, reptiles, and plants which he observed on the Gallipagos Islands, as illustrations of his theory. He mentions the fact that these islands are five hundred miles away from the coast of South America; that the vegetation, the birds, and the reptiles, all resemble those on the main land, yet they are, in many respects, quite different from them. Besides the modifications produced by the vicissitudes which I have mentioned, Mr. Darwin also mentions the variation by election, among animals which mate.

The microscope and the scalpel show that there are several primitive types of animated creation, the radiata, molusca, articulata, and vertebrata. It would be very difficult, indeed, to show that these different forms of life could be transmuted from one sub-kingdom into another.

There are certain archetypes, or Divine forms, if I may be allowed the expression, around which the various species of animals found in the world, group themselves.

In looking at the animal kingdom you find the external forms and internal structures of several species bear

a very close resemblance to each other. Sometimes there is great resemblance in the osseous system, where the external resemblance is but very slight. The skeleton of the horse, the seal, and the rhinoceros are much the same, but the external appearance of these animals is very unlike the one to the other. I do not think that it at all follows, from similarity of structure, that these different species have had a common ancestry. The principles of biology, and the relation of the earth itself to the animal kingdom, may have rendered these resemblances necessary. They may be the result of vital forces that science has not yet taken into account. They may indicate unity of plan in creation, from which no departure is made without a specific necessity. They may indicate one Creator rather than one ancestry.

It was a subject of dispute by the nominalists and realists, whether there was any general thing, apart from a particular species. The realists said there is no such thing as a tree, apart from a species. They said you cannot speak of a rock without its being of some particular kind of a rock. Now, I am not going to argue here either side of this old dispute; but with regard to the animal kingdom, there are whole groups of animals, each species of which is a modification of some archetype, which may not, at any time, have had a living representative. I might take the whole class of felines as one instance, the anthropoids as another, and the pachydermatous animals as a third group. Each of these groups has its archetype, but it does not follow that this archetype is a common ancestor, or that it ever had a real existence.

There are no fewer than one hundred and twenty thousand species of animals in the world, but they have all been created after four distinct types, and, within each of these types, or sub-kingdoms, there is a very considerable range of variation. The crab or lobster begins life at the bottom of