# On the Origin of Species (1859)

## CHAPTER IV - Natural Selection

[...]

We shall best understand the probable course of natural selection by taking the case of a **country undergoing some physical change**, for instance, of climate. The proportional numbers of its **inhabitants** would almost immediately **undergo a change**, and some species might **become extinct**. We may conclude, from what we have seen of the intimate and complex manner in which the inhabitants of each country are bound together, that **any change** in the numerical proportions of some of the inhabitants, independently of the change of climate itself, **would most seriously affect many of the others**. If the country were open on its borders, new forms would certainly immigrate, and this also would seriously **disturb the relations of some of the former inhabitants**. Let it be remembered how powerful the influence of a single introduced tree or mammal has been shown to be. But in the case of an island, or of a country partly surrounded by barriers, into which new and better adapted forms could not freely enter, we should then have places in the economy of nature which would assuredly be better filled up, if some of the original inhabitants were in some manner modified; for, had the area been open to immigration, these same places would have been seized on by intruders. In such case, every slight modification, which in the course of ages chanced to arise, and which in any way favoured the individuals of any of the species, by **better adapting them to their altered conditions, would tend to be preserved**; and natural selection would thus have **free scope for the work of improvement**.

[...]

## CHAPTER V - Laws of Variation

I have hitherto sometimes spoken as if the variations—so common and multiform in organic beings under domestication, and in a lesser degree in those in a state of nature—had been due to chance. This, of course, is a wholly incorrect expression, but it serves to acknowledge plainly **our ignorance of the cause of each particular variation**.

[...]

### Effects of Use and Disuse

From the facts alluded to in the first chapter, I think there can be little doubt that **use in our domestic animals strengthens and enlarges certain parts, and disuse diminishes them**; and that such modifications are inherited. Under free nature, we can have no standard of comparison, by which to judge of the effects of long-continued use or disuse, for we know not the parent-forms; but **many animals have structures which can be explained by the effects of disuse**. As Professor Owen has remarked, there is no greater anomaly in nature than a **bird that cannot fly**; yet there are several in this state. [...]