

to separate species, we find a striking disparity between individuals which we know to have descended from a common stock; and these newly acquired peculiarities are regularly transmitted from one generation to another, constituting what are called *races*.

From a great number of facts, continues the author, we learn that in proportion as the individuals of one of our species change their situation, climate, and manner of living, they change also, by little and little, the consistence and proportions of their parts, their form, their faculties, and even their organization, in such a manner that every thing in them comes at last to participate in the mutations to which they have been exposed. Even in the same climate, a great difference of situation and exposure causes individuals to vary; but if these individuals continue to live and to be reproduced under the same difference of circumstances, distinctions are brought about in them which become in some degree essential to their existence. In a word, at the end of many successive generations, these individuals, which originally belonged to another species, are transformed into a new and distinct species.*

Thus, for example, if the seeds of a grass, or any other plant which grows naturally in a moist meadow, be accidentally transported, first to the slope of some neighbouring hill, where the soil, although at a greater elevation, is damp enough to allow the plant to live; and if, after having lived there, and having been several times regenerated, it reaches by degrees the drier and almost arid soil of a mountain declivity, it will then, if it succeeds in growing, and perpetuates itself for a series of generations, be so changed that botanists who meet with it will regard it as a particular species.† The unfavourable climate in this case, deficiency of nourishment, exposure to the winds, and other causes, give rise to a stunted and dwarfish race, with some organ more developed than others, and having proportions often quite peculiar.

What nature brings about in a great lapse of time, we occasion suddenly by changing the circumstances in which a species has been accustomed to live. All are aware that vegetables taken from their birth-place, and cultivated in gardens, undergo changes which render them no longer recognizable as the same plants. Many which were naturally hairy become smooth, or nearly so; a great number of such as were creepers and trailed along the ground, rear their stalks and grow erect. Others lose their thorns or asperities; others, again, from the ligneous state which their stem possessed in hot climates, where they were indigenous, pass to the herbaceous; and, among them, some which were perennials become mere annuals. So well do botanists know the effects of such changes of circumstances, that they are averse to describe species from garden specimens, unless they are sure that they have been cultivated for a very short period.

“Is not the cultivated wheat” (*Triticum sativum*), asks Lamarck.

* Phil. Zool., tom. i. p. 62.

† Ibid.