

and new forms created adapted to the altered physical conditions of the earth. That these conditions have been very various, and not absolutely stationary for any considerable periods of time, it is impossible to doubt. And that animals suited to these varying conditions should be called into being by creative power, is a principle perfectly reasonable and consonant with our highest conceptions of the divine perfections. The natural history of the earth reveals a constant series of alternate decay and renovation—of destruction and reproduction, not taking place by chance, but in obedience to law, and that law being the mode in which the power and wisdom of the Creator have been manifested.

However the origin and distribution of species may be accounted for, a subject that would lead us into a wide field of speculation, there is, as Professor Low observes, "a class of changes in organic forms which fall more within our cognizance, and which merit our attention in an especial degree; this is the class of changes which produce what are called *Varieties* or *Races*." Man, as well as the lower tribes of animals, is subject to the influences of temperature, food, habitudes and other agencies that tend greatly to modify his form, colour and general condition. And notwithstanding the many and great differences observable among the various tribes of the human race, there is no sufficient reason to conclude against their having descended from a common parent, and dispersed abroad in the earth from one centre. They form in fact but one species, possessing certain characters in common, and endowed with the power belonging to all other species, that of perpetuating their race.

It has been already stated that different circumstances, such as climate, the physical conformation of a country, the means of obtaining food, temperature, &c., produce very great changes on the forms and habits of animals of the same species. But it is in the domesticated state more particularly that these differences are fully brought out. "The wild hog of the forest, which extends over the greater part of the old continent, is the undoubted progenitor of the common domesticated breeds. When this powerful and solitary creature is subjected to domestication, we find not only his form, but all his habits change. He may be said in fact, to become a new species; and he transmits all his acquired characters to his descendants." In fact, what are considered the most permanent conformations, by which not only species but even genera are distinguished, undergo changes according to the varying physical conditions in which he is placed. The wild hog has six incisor teeth in each jaw, but the effect of domestication is usually to reduce that number one half. Other portions of the body, as the vertebrae, undergo corresponding changes, so that he differs as much, and in

some respects even more from the wild hog of the forest, from which he originally descended, than do many animals, regarded as distinct species, differ from one another.

The ox and the sheep, among ruminating animals, are to the farmer the most valuable and important, and they are subject to changes in habits, form and constitution, by the kind and quantity of food with which they are supplied, and the physical conditions in which they are placed. "With increased supplies of food (observes Professor Low), the abdominal viscera become enlarged, and other parts partake of corresponding modifications of form. To suit the increased size of the stomach and intestinal canal, the trunk becomes larger in all its dimensions; the respiratory organs adapt themselves to the increased dimensions of the alimentary canal, which is indicated to the eye by a change in the form of the chest; the limbs become shorter and farther apart, and the body being nearer the ground, the neck becomes more short; various muscles, from disuse, diminish in size, and the tendency to obesity increases. With the form of the animals, their power of active motion diminishes, and they acquire habits adapted to their changed condition. These new characters they communicate to their progeny; and thus races differing from those which, in the state of nature, would exist, are produced."

The same holds good with regard to birds, several of which, when subjected to domestication, change not only their form and habits, but in a considerable degree their original instincts. The wild goose inhabits the low marshy situations of high northern latitudes, and on the approach of winter visits more genial climates, in large numbers; frequently flying at a great height, and evincing immense power of wing. "When the eggs of this species are obtained, and the young are supplied with food in unlimited quantity, the result is remarkable. The intestines, and with them the abdomen, become so much enlarged, that the animal nearly loses the power of flight, and the powerful muscles that enable him, when in the wild state, to take such flights, become feeble from disuse, and his long wings are rendered unserviceable. The beautiful bird that outstripped the flight of the eagle, is now a captive without a chain. A child will guide him to his resting-place with a wand, and he is unable to raise himself by flight above the walls of the yard that confines him; and he gives birth to a race of creatures as helpless and removed from their natural condition as he himself had become."

The wild duck affords another example of the great changes effected in the form and habits of animals by altered physical conditions. This wary bird, like the goose, migrates in immense flocks to warmer latitudes. "If its eggs be taken, and the young be supplied with food in the manner usual