

devoured ; those whose flowers are most conspicuous may be soonest fertilized by insects. We cannot doubt that, on the whole, any beneficial variation will give the possessors of it a greater probability of living through the tremendous ordeal they have to undergo. There may be something left to what may be called chance, but on the whole "*the fittest will survive*." Then we have another important fact to consider,—the principle of heredity or transmission of variations. If we grow plants from seed or breed any kind of animals, year after year, consuming or giving away all the increase we do not wish to keep just as they come to our hand, our plants and animals will continue much the same ; but if we every year carefully save the best seed to sow, and the finest or brightest colored animals to breed from, we shall soon find that an improvement will take place, and that the average quality of our stock will be raised. This is the way in which all our fine garden fruits and vegetables and flowers have been produced, as well as our splendid breeds of domestic animals ; and they have thus become, in many cases, so different from the wild races from which they originally sprung as to be hardly recognizable as the same. It is, therefore, proved that if any particular kind of variation is preserved and bred from, the variation itself goes on increasing in amount to an enormous extent, and the bearing of this on the origin of species is most important ; for if in each generation of a given animal or plant the fittest survive to continue the breed, then whatever may be the peculiarity that causes fitness in the particular case that peculiarity will go on increasing and strengthening so long as it is *useful to the species*. But as soon as it has reached its maximum of usefulness, and some other qualification or modification would help in the struggle, then the individuals which vary in the new direction will survive ; and thus a species may be gradually modified, first in one direction and then in another, till it differs from the original parent form as much as the greyhound differs from any wild dog or the cauliflower from any wild plant. But animals or plants which thus differ in a state of nature are always classed as distinct species, and thus we see how by the continuous survival of the fittest, or the preservation of favored races in the struggle for life, new species may be originated. Past time has been to all intents and purposes infinite. Hence it is probable that the existent species of animals and plants have