

called varieties of the species, which is then called a variable species. "Specimen" is the word naturalists use to indicate a single individual or example of a species. The reasons why one species should be variable and another constant, or one very local and another widely distributed, are very obscure and intricate, and must be sought for amongst hereditary tendencies of bygone ages. They cannot be dealt with in the present paper, which treats of facts rather than causes.

It will often be found, if we trace a "generally distributed" species throughout the various districts where it occurs, that some of the specimens from one locality differ slightly in certain points or characters from others from a neighboring district. The lower down in the scale of life we look for illustrations of this the more easily we shall find them. It is less noticable in the higher than in the lower forms of animal life. It is found to some extent in birds, still more in insects, and in plants more than in either. Some specimens will be found exactly alike from the two districts, others will differ considerably. They are obviously still the same species, but present what is called local variations, or varieties. Follow the species up into a third district, and perhaps a greater number of specimens will be found which differ more or less from those in the first. Follow it up further, comparing numbers of specimens throughout various districts right across the continent. The difference between individuals in different districts will probably be found to vary not nearly so much according to the actual distance of the localities apart, as to the difference between the *geological and climatic* conditions. These conditions differ enormously, say, on the Atlantic and Pacific coasts. But as it is not possible to draw, so to speak, any actual line or lines of distinction between those different conditions anywhere in that area, nor even to follow through any gradual regularity of change from one to the other, so, in the case of our widely distributed but variable species, we shall find neither any sudden change of variation or form, nor any gradual regularity of change. And though we may be able to find no district in which the varietal forms differ entirely from those on all the rest of the continent, those from the most climatically or geologically dissimilar districts will probably be found the least like each other, and may even be entirely different in appearance. In other words, the species exists in the different localities as a different "local race," the difference varying probably according to the difference of conditions under which it has to exist. We may have every reason to assume a distinct blood relationship between the various forms. Are we then to call the extremes different "species"? Would they, if brought together under perfectly natural conditions, perpetuate the race, or mixture of