

as distinct species, must have had from the beginning a different and distinct geographical range, frequently occupy sections of areas which are simultaneously inhabited by the representatives of other species, which are perfectly identical over the whole area. By way of an example, I would mention the European and the American Widgeon, (*Anas 'Mareca' Penelope* and *A. americana*), or the American and the European Red-headed Ducks, (*A. ferina* and *A. erythrocephala*), which inhabit respectively the northern parts of the Old and New World in summer, and migrate further south in these same continents during winter, while the Mallard (*A. Boschas*) and the Scaup Duck (*A. marila*) are as common in North America as in Europe. What do these facts tell: That all these birds originated together somewhere, where they no longer occur, to establish themselves in the end within the limits they now occupy?—or that they originated either in Europe or America, where, it is true, they do not live all together, but at least a part of them?—or that they really originated within the natural boundaries they occupy? I suppose with sensible readers I need only argue the conclusions flowing from the last supposition. If so, the American Widgeon and the American Red-headed Duck originated in America, and the European Widgeon and the European Red-headed Duck in Europe. But what of the Mallard and the Scaup, which are equally common upon the two continents; did they first appear in Europe, or in America, or simultaneously upon the two continents? Without entering into further details, as I have only desired to lay clearly a distinct case before my readers, from which the character of the argument, which applies to the whole animal kingdom, may be fully understood, I say that the facts lead, step by step, to the inference, that such birds as the Mallard and the Scaup originated simultaneously and separately in Europe and in America, and that all animals originated in vast numbers, indeed, in the average number characteristic of their species, over the whole of their geographical area, whether its surface be continuous or disconnected by sea, lakes, or rivers, or by differences of level above the sea, etc. The details of the geographical distribution of animals exhibit, indeed, too much discrimination to admit for a moment that it could be the result of accident, that is, the result of the accidental migrations of the animals or of the accidental dispersion of the seeds of plants. The greater the uniformity of structure of these widely distributed organized beings, the less probable does their accidental distribution appear. I confess that nothing has ever surprised me so much as to see the perfect identity of the most delicate microscopic structures of animals and plants, from the remotest parts of the world. It was this striking identity of structure in the same types, this total independence of the essential characteristics of animals and plants, of their distribution under the most extreme climatic differences known upon our globe, which led me to distrust the belief, then almost universal, that organized beings are influenced by physical causes to a degree which may essentially modify their character.