

in some slight degree plastic; granting that many animals and plants have varied greatly under domestication, and that man by his power of selection has gone on accumulating such variations until he has made strongly marked and firmly inherited races; granting all this, how, it may be asked, have species arisen in a state of nature? The differences between natural varieties are slight; whereas the differences are considerable between the species of the same genus, and great between the species of distinct genera. How do these lesser differences become augmented into the greater difference? How do varieties, or as I have called them incipient species, become converted into true and well-defined species? How has each new species been adapted to the surrounding physical conditions, and to the other forms of life on which it in any way depends? We see on every side of us innumerable adaptations and contrivances, which have justly excited the highest admiration of every observer. There is, for instance, a fly (*Cecidomyia*)<sup>3</sup> which deposits its eggs within the stamens of a *Scrophularia*, and secretes a poison which produces a gall, on which the larva feeds; but there is another insect (*Miscampus*) which deposits its eggs within the body of the larva within the gall, and is thus nourished by its living prey; so that here a hymenopterous insect depends on a dipterous insect, and this depends on its power of producing a monstrous growth in a particular organ of a particular plant. So it is, in a more or less plainly marked manner, in thousands and tens of thousands of cases, with the lowest as well as with the highest productions of nature.

This problem of the conversion of varieties into species,—that is, the augmentation of the slight differences characteristic of varieties into the greater differences characteristic of species and genera, including the admirable adaptations of each being to its complex organic and inorganic conditions of life,—has been briefly treated in my ‘*Origin of Species*.’ It was there shown that all organic beings, without exception, tend to increase at so high a ratio, that no district, no station, not even the whole surface of the land or the whole ocean,

<sup>3</sup> Léon Dufour in ‘*Annales des Scienc. Nat.*’ (3rd series, Zoolog.), tom. v. p. 6.