

BOOK I.

TERRESTRIAL ADAPTATIONS.

WE proceed in this book to point out relations which subsist between the laws of the inorganic world; that is, the general facts of astronomy and meteorology; and the laws which prevail in the organic world, the properties of plants and animals.

With regard to the first kind of laws, they are in the highest degree various and unlike each other. The intensity and activity of natural influences follow in different cases the most different rules. In some instances they are *periodical*, increasing and diminishing alternately, in a perpetual succession of equal intervals of time. This is the case with the heat at the earth's surface, which has a period of a year; with the light, which has a period of a day. Other qualities are *constant*, thus the force of gravity at the same place is always the same. In some cases, a very simple cause produces very complicated effects; thus the globular form of the earth, and the inclination of its axis during its annual motion, give rise to all the variety of climates. In other cases a very complex and variable system of causes produces effects comparatively steady and uniform; thus solar and terrestrial heat, air, moisture, and probably many other apparently conflicting agents, join to produce our weather, which never deviates very far from a certain average standard.

Now a general fact, which we shall endeavour to exemplify in the following chapters, is this:—That