

those properties of plants and animals which have reference to agencies of a periodical character, have also by their nature a periodical mode of working; while those properties which refer to agencies of constant intensity, are adjusted to this constant intensity: and again, there are peculiarities in the nature of organized beings which have reference to a variety in the conditions of the external world, as, for instance, the difference of the organized population of different regions: and there are other peculiarities which have a reference to the constancy of the average of such conditions, and the limited range of the deviations from that average; as for example, that constitution by which each plant and animal is fitted to exist and prosper in its usual place in the world.

And not only is there this general agreement between the nature of the laws which govern the organic and inorganic world, but also there is a coincidence between the *arbitrary magnitudes* which such laws involve on the one hand and on the other. Plants and animals have, in their construction, certain periodical functions, which have a reference to alternations of heat and cold; the length of the period which belongs to these functions by their construction, appears to be that of the period which belongs to the actual alternations of heat and cold, namely, a year. Plants and animals have again in their construction certain other periodical functions, which have a reference to alternations of light and darkness; the length of the period of such functions appears to coincide with the natural day. In like manner the other arbitrary magnitudes which enter into the laws of gravity, of the effects of air and moisture, and of other causes of permanence, and of change, by which the influences of the elements operate, are the same arbitrary magnitudes to which the members of the organic world are adapted by the various peculiarities of their construction.

The illustration of this view will be pursued in