

in many of the inferior ranks, we find all these objects renounced for the more certain advantage of security, which the softer texture of the organs renders one of paramount importance. That construction of limbs which favours certain movements will necessarily interfere with the ready performance of others, and must preclude the development of the organs which would be necessary for facilitating them. Different kinds of prey require dexterity in particular actions for their pursuit and seizure. The animal is, in one case, formed for climbing trees; in another, for burrowing in the earth: in a third, for perforating wood. Some are provided with organs for penetrating into the bodies of other animals; others with the means of insnaring their captives; while others, again, instil into the veins of their victims a deadly poison. Hence it is necessary, in studying the organization of animals, to bestow particular attention on the habits and mode of life for which each respective tribe and species has been destined.

In the examination of the mechanical functions which will form the first part of this treatise, I shall keep in view, as the leading object of inquiry, the faculty of *progressive motion*, noticing its different degrees of perfection as we follow the ascending series of animals; but adverting, also, occasionally, to the other topics which belong to this class of functions.

It may be observed, in general, that the mechanical construction of animals which constantly inhabit a watery element is more simple than the construction of those which live on land, and are encompassed by a lighter medium. Differing but little in their specific gravity from the fluid in which they are immersed, aquatic animals are necessarily supported, on all sides, by a powerful hydrostatic pressure, which nearly balances the force of gravity, and counteracts the tendency of their bodies to descend in the fluid. Many of the obstacles to progressive motion are thus removed; and there is no necessity for the compactness of frame, and the rigidity and cohesion of substance which are required in terrestrial animals.