

extent, as to render it wholly useless in that particular species, although in a higher race of animals it fully performs its proper function. Thus we shall find that rudiments of feet are contained within the bodies of various kinds of serpents, which can obviously not be serviceable as organs of progression. In the young of the whale, before its birth, there is found in the lower jaw, a row of small teeth, which do not rise above the gums, and can, therefore, be of no use as instruments of mastication. Their farther growth is arrested, and they are afterwards obliterated. This imperfect or *rudimental* condition of an organ indicates its relation to other species belonging to the same type, and demonstrates the existence of a general plan in their formation. I shall have occasion to mention several striking instances of this kind, both in the animal and vegetable kingdom.

In following the transitions from one model of structure to another, we often observe that a particular organ has been very greatly enlarged, or otherwise modified to suit some particular purpose, foreign to its usual destination, or to qualify it for performing some new office, rendered necessary by the particular circumstances in which the animal is placed. Thus, the ribs, which in quadrupeds are usually employed for respiration, are in serpents converted into auxiliary organs of progressive motion: and in the *Draco volans*, or flying lizard, they are extended outwards from the sides to serve as wings. The teeth, usually intended for mastication, are in many animals enlarged in order to constitute weapons of offence, as in the *Elephant*, the *Boar*, the *Narwhal*, and the *Pristis*. In like manner, in the Crustacea, organs of the same general structure are converted sometimes into jaws, sometimes into feelers, (or palpi,) and sometimes into feet; and the transition from the one to the other is so gradual that it is difficult to draw a proper distinction between them.

In pursuing the ascending series of animal structures we meet also with instances of a contrary change, yet still resulting from the continued application of the same principle.