

fluid without the necessity of employing any voluntary motion or exertion for that purpose; but as the body of a fish is generally a little heavier than the fluid medium, especially if it be fresh water, it is necessary for the animal to give its body some degree of motion, in order to prevent its sinking.

In land quadrupeds, the limbs have to perform the double office of supporting the body, and of effecting at the same time its locomotion; but as nearly the whole of the weight of a fish is already sustained by the element in which it is immersed, its instruments of motion may be employed exclusively for progression, and the powerful hydrostatic pressure, which supports the body on all sides, supersedes the necessity of that cohesive rigidity of frame, which is essential to the safety of terrestrial animals. Hence we find that in one whole tribe of fishes, the skeleton is composed merely of cartilage; and, in all, it exhibits much less of the osseous character than in the higher classes. The frame-work of the skeleton, even of osseous fishes, has not the compactness possessed by that of quadrupeds or reptiles: the pieces which compose it are joined together less firmly; many of them, indeed, remain in an imperfectly ossified condition, their elementary pieces being detached from one another, as if the usual process of consolidation had been arrested at an early stage. The texture of the bones of cartilaginous fishes corresponds to this primeval condition; for it is composed merely of granules of calcareous phosphate, interspersed amidst the cartilaginous substance in detached masses, or presenting the appearance of coarse fibres, thinly scattered through the semitransparent bone. Compared with the quantity of gelatin which enters into their composition, the bones of fishes contain but a small proportion of earthy ingredient, a circumstance which explains the pellucidity of the mass, and the readiness with which the osseous fibres it contains can be distinguished. Another consequence of the want of density in the bones of fishes is, that their articulations are less regular and perfect than the corresponding