

viding a solid basis for the attachments of the muscles which are to effect their movements; and, thirdly, the giving protection to the vital organs, but more particularly to the central parts of the nervous system. Of these, the last is the circumstance that has the greatest influence in determining the principles on which the osseous frame-work has been constructed. In the nervous system of all the animals coming under the denomination of vertebrata, the spinal marrow, together with the brain, which may, indeed, be considered as the anterior extremity of the spinal marrow, only much enlarged by an additional mass of nervous substance are the most important parts of that system, and the organs which stand most in need of protection from every kind of injury. These two portions of the nervous system, when viewed as composing a single organ, have been denominated the *spino-cerebral axis*, in contradistinction to the analogous parts of the nervous system of articulated animals; for, amidst great differences of structure and of functions, an analogy is still retained among the several forms of the nervous system, characterizing these two great divisions of the animal kingdom. In the embryo state of the vertebrata, the central parts of that system consist of two separate filaments, running parallel to each other the whole length of the body: but, in process of time, these two filaments unite, and constitute a single spinal cord: and the primary type of the skeleton is determined by the peculiar form of this, the central organ of the nervous system.

In laying the foundations of the skeleton, then, the first object is to provide for the security of the spinal cord: and this is accomplished by enclosing it within a series of cartilaginous rings, which are destined to shield it during its growth, and, by their subsequent ossification, to protect it, most effectually, from all injurious pressure. It is this part of the skeleton, accordingly, of which the rudiments appear the earliest in the embryo animal. These rings form a column, extending, in a longitudinal direction, along the trunk; retracing to us the series of horny rings, in which the bodies of worms, of insects, and, indeed, of all the *Articulata*, are