

that doubts have often arisen in the minds of naturalists whether that animal ought not properly to be ranked among this latter class. Its pretensions to be included among the vertebrata are, indeed, but slender and equivocal; for, in place of a series of bones composing the vertebral column, it has merely a soft and flexible tube of a homogeneous and cartilaginous substance, exhibiting scarcely any trace of division into separate rings, but appearing as if it were formed of a continuous hollow cylinder of intervertebral substance, usurping the place of the vertebræ, which it is the usual office of that substance to connect together, and having in its axis a continuous canal filled with gelatinous fluid. This, however, is not the channel intended for containing the spinal marrow, for that nervous cord is on the outside of this column. The cartilage, indeed, sends out no processes to bend round the spinal marrow, and forms no canal for its passage and protection. The nervous matter here consists merely of two slender cords, which run parallel to one another in a groove on the upper part of the spinal column; and these cords are covered only by a thin membrane, the presence of which it requires very minute attention to detect. The partial protection thus afforded to so important an organ is not greater than that given by the cartilaginous lamina of the cuttle-fish, which in form, texture, and situation, is very analogous to the spine of the myxine.

As we ascend from this rudimental condition of the spine, we find it, in the lamprey, more distinctly divided into rounded portions, appearing like beads strung together. These rudimental bodies of vertebræ have not yet completed the cup-like hollows on their two ends, but are shaped like rings, being perforated in the centre, so as still to form a continuous canal throughout the whole column.

Proceeding to more advanced developments, we find, in the sturgeon and other cartilaginous fishes, a greater condensation of substance produced by the deposition of granules of osseous matter; the central canal becomes divided into lozenge-shaped compartments by the closing in of the sides