

history of the fish, — a history which, with all its blanks and missing portions, is yet better known than that of any other division of the vertebrata. And it is, I am convinced, from a survey of the progress of degradation in the great ichthyic division, — a progress recorded as “with a pen of iron in the rock for ever,” — and not from superficial views founded on the cartilaginous or non-cartilaginous texture of the ichthyic skeleton, that the standing of the kingly fishes of the earlier periods is to be adequately determined. Any other mode of survey, save the parallel mode which takes development of brain into account, evolves, we find, nothing like principle, and lands the inquirer in inextricable difficulties and inconsistencies.

In all the higher non-degraded vertebrata we find a certain uniform type of skeleton, consisting of the head, the vertebral column, and four limbs; and these last, in the various symmetrical forms, whether exemplified in the higher fish, the higher reptiles, the higher birds, the higher mammals, or in man himself, occur always in a certain determinate order. In all the mammals, the scapular bases of the fore limbs begin opposite the eighth vertebra from the skull backwards, the seven which go before being cervical or neck vertebræ; in the birds, — a division of the vertebrata that, from their peculiar organization, require longer and more flexible necks than the mammals, — the scapulars begin at distances from the occiput, varying, according to the species, from opposite the thirteenth to opposite the twenty-fourth vertebra; and in the reptiles, — a division which, according to Cuvier, “presents a greater diversity of forms, characters, and modes of gait, than any of the other two,” — they occur at almost all points, from opposite the second vertebra, as in the frog, to opposite the thirty-third or thirty-fourth vertebra, as in some species