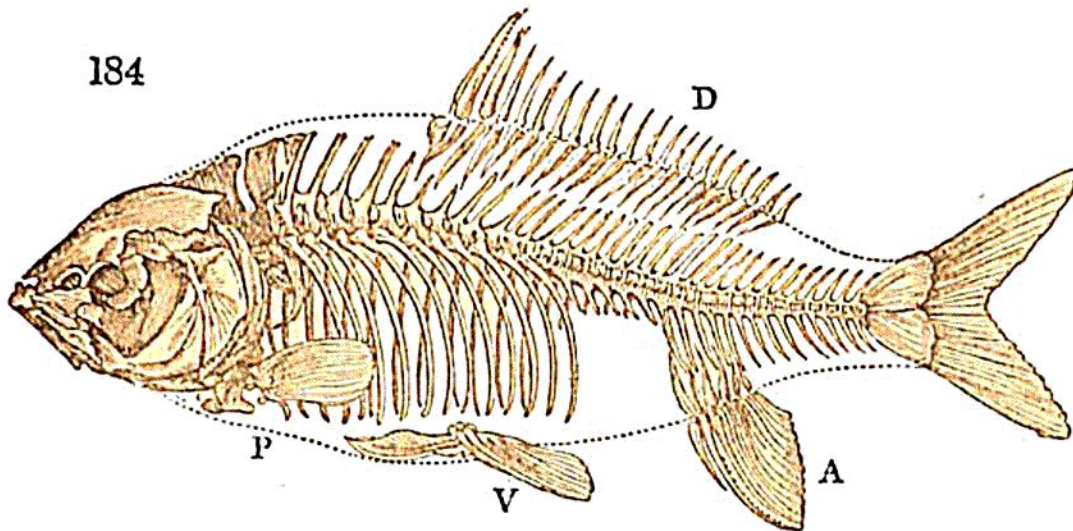


joints of terrestrial animals; for it is evident that where the parts are soft and flexible, joints are not required.

In the osseous fishes, the bony structures are more finished; and they even arrive at a degree of hardness, equal to that of the higher classes. But this development is not uniform in all the bones; in the head of the pike, for instance, while some of the bones have acquired a great hardness, others remain wholly and permanently in a cartilaginous condition. The bones of fishes, however advanced in their ossification, never reach that stage of the process in which cavities are formed; thus there is no space for marrow, nor even for the cellular or cancellated structure which we have noticed in the more perfect bones.* The general disposition of the



bones which compose the entire skeleton will be understood from Fig. 184, which represents that of the *Cyprinus Carpio*, or carp. The muscular flesh of fishes is likewise softer than that of the higher classes; and the cellular substance more attenuated and more gelatinous; so that the membranes which it forms are of a looser and more pulpy texture.

Progressive motion in fishes is effected by the simplest means, the principal instrument employed for this purpose being the tail; for the fins, as we shall presently find, are merely auxiliary organs, serving chiefly to balance the body while it receives its propulsion from the tail. A fish moves in the water upon the same principle as a boat is impelled

* Cuvier, sur les Poissons. Tom. i. p. 218.