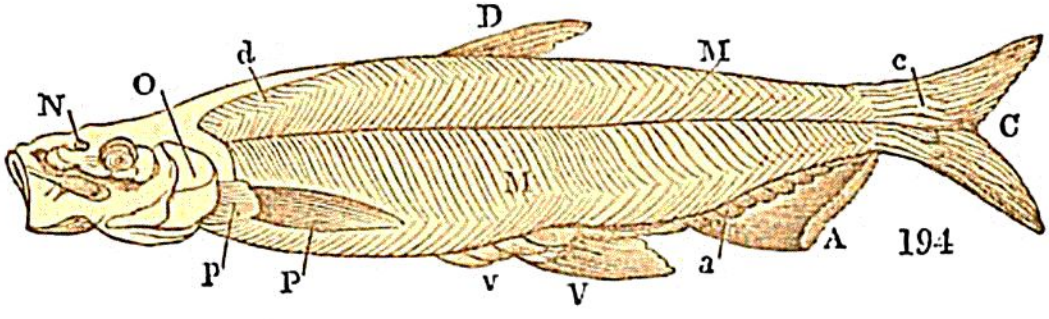
the farther subdivision of their parts, and when, for the purpose of adding strength to the fin, it becomes necessary to multiply the points of support, intermediate bones are developed, serving as the basis of the rays. Convenience requires that they should be detached from the ends of the spinous processes, which is their usual position, and placed between them: when in this situation, they bear the name of *interspinous bones;* and when a still greater length of osseous support is wanted, new centres of ossification are developed at their extremities, giving rise to a series of additional pieces, joined end to end, and carrying out the interspinous bone, and the ray which terminates it, to a considerable distance. This structure is distinctly seen in the small dorsal fins of the *Mackerel.* The anal fins, which are situated on the lower side of the body, in the vertical plane, and next to the tail, are, in like manner, supported by rays, having the same parallel, or fan-like arrangement as the preceding. The caudal fin, or terminal expansion of the tail, has also a similar structure.

The muscles of fishes compose a large portion of the bulk of the body, but they are arranged in a less complex manner than those of the animals of the higher classes. Those which appear immediately underneath the integuments are shown in Fig. 194, where M, M, are the great lateral muscles,



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producing the flexion of the body and tail: D is the dorsal fin, which is raised by the muscle d; P, the pectoral fin, expanded by the muscle p: v, the ventral fin, moved by the muscles situated at *v:* A, the anal fin, in like manner moved by muscles at its base a: and c, the caudal fin, the muscles for moving which are seen at *c:* o is the operculum, or flap,