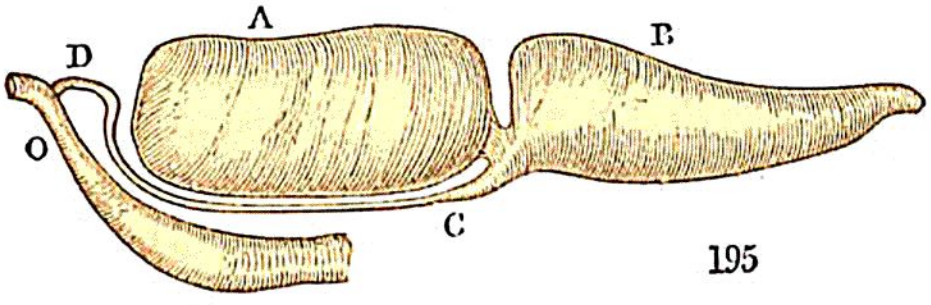
or sinking, without calling into action either the fins or the tail. Such is precisely the object of a peculiar mechanism, which nature has provided in the interior of the body of the fish. A large bladder, filled with air, has been placed immediately under the spine, in the middle of the back, and above the centre of gravity. This is known by the name of the *air-bladder*, or the *swimming bladder*, and in the cod-fish it is called the *sound*. It frequently, as in the Carp, consists of two bladders (A, B, Fig. 195) joined end-



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wise, and communicating with each other by a narrow neck.* When distended with air, it renders the whole fish specifically lighter than the surrounding water; and the fish is thus buoyed up, and remains at the surface without any effort of its own. On compressing the bladder, by the action of the surrounding muscles, the included air is condensed, the specific gravity of the whole body is increased, and the fish sinks to the bottom. On relaxing the same muscles, the air recovers its former dimensions, and the fish is again rendered buoyant. Can there be stronger evidence of design than the placing of this hydrostatic apparatus, acting upon philosophical principles, in the interior of the organization, for a purpose so definite and unequivocal?

In several tribes of fishes there is a canal (c D) establishing a communication between this bladder and the stomach, or the gullet (o;) so that by compressing the bladder, a quantity of air may be forced out, and a very sudden increase of

* There is great variety in the form and structure of the air-bladder in different fishes. Sometimes it contains a large glandular body of a peculiar structure, which has been conjectured to be an apparatus for secreting air from the blood: but this is by no means very generally met with.