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CHANGE OF FUNCTION IN FISHES' FINS.

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In the OTTAWA NATURALIST, of October last year, a book notice appeared of the nature of a brief review of that highly interesting subject the life-histories of fishes. It included amongst other new and important statements the affirmation that in young fishes "the breast fins, and in some species the hind pair of fins, become enormously developed, and project like wide-spread fans from the sides of the body. These, no doubt, are effective for protection rather than locomotion." Having watched young fishes half an inch to one or two inches in length, when schooling at the surface of the sea in calm summer weather, I have repeatedly noticed that the enormous paired fins, often deeply coloured, black and white in the Rockling (*Motella*), orange red in the Gurnard (*Trigla*), ochre yellow in the Ling (*Molva*), or gleaming white in the American Hake (*Phycis*), are of little or no use in outward locomotion: but hang helplessly by the side of the body. Projecting like richly tinted fans when expanded, or like stout spines and rods when closed, they must effectively deter many enemies eager to make a mouthful of the tender young fish; and thus serve a purpose similar to the points and projections of caterpillars or the spines of the porcupine, and the like. As I ventured to point out many years ago, the theory put forward by Dr. Albert Gunther, of the British Museum, that they were simply instrumental in balancing the fish is wholly inadequate, and certainly a large number of minute larval fishes (*e.g.*, the cod and mackerel), which would appear to need them most, do not possess these large (supposed) balancing organs.