

Lamarck *versus* Weismann.

I SHOULD like to call the attention of those interested in organic evolution to a remarkable passage in Mr. Wallace's recent volume on "Darwinism." This work is throughout an argument in defence of Darwinian principles, in their original unmodified form as stated in the "Origin of Species," in opposition to all recent criticism or development of those principles. And yet on p. 129 the author publishes the following passage:— "Now the eyes of these fish (Pleuronectidæ) are curiously distorted in order that both eyes may be on the upper side, where alone they would be of any use. It was objected by Mr. Mivart that a sudden transformation of the eye from one side to the other was inconceivable, while if the transit were gradual, the first step could be of no use since this would not remove the eye from the lower side. But, as Mr. Darwin shows by reference to the researches of Malm and others, the young of these fish are quite symmetrical, and during their growth exhibit to us the whole process of change. This begins by the fish (owing to the increasing depth of the body) being unable to maintain the vertical position, so that it falls on one side. It then twists the lower eye as much as possible towards the upper side; and the whole bony structure of the head being at this time soft and flexible, *the constant repetition of this effort causes the eye gradually to move round the head till it comes to the upper side.* Now if we suppose this process, which in the young is completed in a few days or weeks, to have been spread over thousands of generations during the development of these fish, those usually surviving whose eyes retained more and more of the position into which the young fish *tried to twist them*, the change becomes intelligible."

A Lamarckian could accept the above passage almost without altering a word. The words I have italicized describe with absolute precision the muscular effort of the fish as the active cause, both of the individual and the ancestral metamorphosis. And yet, in chap. xiv., Mr. Wallace expresses his acceptance of Weismann's dogma of the non-inheritance of acquired characters with the words, "We cannot therefore accept any arguments against the agency of natural selection which are based upon the opposite and equally unproved theory that acquired characters are inherited; and as this applies to the whole school of what may be termed Neo-Lamarckians, their speculations cease to have any weight."

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