

In like manner male birds are usually adorned with brilliant plumage. This is accounted for on the ground that they are more attractive, and thus they propagate their race, while the plainer ones have few or no descendants. Thus all design is studiously and laboriously excluded from every department of nature.

The preceding pages contain only a small part of the evidence furnished by Mr. Darwin's own writings, that his doctrine involves the denial of all final causes. The whole drift of his books is to prove that all the organs of plants and animals, all their instincts and mental endowments, may be accounted for by the blind operation of natural causes, without any intention, purpose, or coöperation of God. This is what Professor Huxley and others call "the creative idea," to which the widespread influence of his writings is to be referred.

### *Testimony of the Advocates of the Theory.*

It is time to turn to the exposition of Darwinism by its avowed advocates, in proof of the assertion that it excludes all teleology.

The first of these witnesses is Mr. Alfred Russel Wallace, himself a distinguished naturalist. Mr. Darwin informs his readers that as

early as 1844, he had collected his material and worked out his theory, but had not published it to the world, although it had been communicated to some of his friends. In 1858 he received a memoir from Mr. Wallace, who was then studying the natural history of the Malay Archipelago. From that memoir he learnt that Mr. Wallace had "arrived at almost exactly the same conclusions as I (he himself) have on the origin of species." This led to the publishing his book on that subject contemporaneously with Mr. Wallace's memoir. There has been no jealousy or rivalry between these gentlemen. Mr. Wallace gracefully acknowledges the priority of Mr. Darwin's claim, and attributes to him the credit of having elaborated and sustained it in a way to secure for it universal attention. These facts are mentioned in order to show the competency of Mr. Wallace as a witness as to the true character of Darwinism.

Mr. Wallace, in "The Theory of Natural Selection," devotes a chapter to the consideration of the objections urged by the Duke of Argyll, in his work on the "Reign of Law," against that theory. Those objections are principally two: first, that design necessarily implies an

intelligent designer ; and second, that beauty not being an advantage to its possessor in the struggle for life, cannot be accounted for on the principle of the survival of the fittest. The Duke, he says, maintains that contrivance and beauty indicate "the constant supervision and interference of the Creator, and cannot possibly be explained by the unassisted action of any combination of laws. Now, Mr. Darwin's work," he adds, "has for its main object to show that all the phenomena of living things — all their wonderful organs and complicated structures, their infinite variety of form, size, and color, their intricate and involved relations to each other — may have been produced by the action of a few general laws of the simplest kind, laws which are in most cases mere statements of admitted facts." (p. 265) Those laws are those with which we are familiar : Heredity, Variations, Over Production, Struggle for Life, Survival of the Fittest. "It is probable," he says, "that these primary facts or laws are but results of the very nature of life, and of the essential properties of organized and unorganized matter. Mr. Herbert Spencer, in his 'First Principles' and in his 'Biology,' has, I think, made us able to understand how this may

be ; but at present we may accept these simple laws, without going further back, and the question then is, Whether the variety, the harmony, the contrivance, and the beauty we perceive, can have been produced by the action of these laws alone, or whether we are required to believe in the incessant interference and direct action of the mind and will of the Creator." (p. 267)<sup>1</sup> Mr. Wallace says, that the Duke of Argyll maintains that God "has personally applied general laws to produce effects which those laws are not in themselves capable of producing ; that the universe alone with all its laws intact, would be a sort of chaos, without variety, without harmony, without design, without beauty ; that there is not (and therefore we may presume that there could not be) any self-developing power in the universe. I believe, on the contrary, that the universe is so constituted as to be self-regulating ; that as long it contains life, the forms under which

<sup>1</sup> The question is not, as Mr. Wallace says, "How has the Creator worked?" but it is, as he himself states, whether the essential properties of matter have alone worked out all the wonders of creation ; or, whether they are to be referred to the mind and will of God. It is worthy of remark how Messrs. Darwin and Wallace refer to Mr. Spencer as their philosopher. We have seen what Spencer's philosophy is.

that life is manifested have an inherent power of adjustment to each other and to their surroundings; and that this adjustment necessarily leads to the greatest amount of variety and beauty and enjoyment, because it does depend on general laws, and not on a continual supervision and rearrangement of details." (p. 268)

"The strange springs and traps and pitfalls found in the flowers of Orchids, cannot," he says, "be necessary *per se*, since exactly the same end is gained in ten thousand other flowers which do not possess them. Is it not then an extraordinary idea, to imagine the Creator of the universe contriving the various complicated parts of these flowers, as a mechanic might contrive an ingenious toy or a difficult puzzle? Is it not a more worthy conception, that they are the results of those general laws which were so coördinated at the first introduction of life upon the earth as to result necessarily in the utmost possible development of varied forms." (p. 270)

"I for one," he says, "cannot believe that the world would come to chaos if left to law alone. . . . If any modification of structure could be the result of law, why not all? If some self-adaptations should arise, why not others? If any varieties of color, why not all

the varieties we see? No attempt is made to explain this except by reference to the fact that 'purpose' and 'contrivance' are everywhere visible, and by an illogical deduction they could only have arisen by the direct action of some mind, because the direct action of our minds produce similar 'contrivances;' but it is forgotten that adaptation, however produced, must have the appearance of design." (p. 280)<sup>1</sup> After referring to the fact that florists and breeders can produce varieties in plants and animals, so that, "whether they wanted a bull-dog to torture another animal, a greyhound to catch a hare, or a bloodhound to hunt down their oppressed fellow-creatures, the required variations have always appeared," he adds: "To be consistent, our opponents must maintain that every one of the variations that have rendered possible the changes produced by man, have been determined at the right time and place by the Creator. Every race produced by the florist or breeder, the dog or the pigeon fancier, the rat-catcher, the sporting man, or the slave-hunter, must have been provided for by varieties occurring when

<sup>1</sup> It is, therefore, clear that design is what Mr. Darwin and Mr. Wallace repudiate.

wanted ; and as these variations were never withheld, it would prove that the sanction of an all-wise and all powerful Being has been given to that which the highest human minds consider to be trivial, mean, or debasing." (p. 290) <sup>1</sup>

The Nebular Hypothesis, as propounded by La Place, proposed to account for the origin of the universe, by a process of evolution under the control of mere physical forces. That hypothesis has, so far as evolution is concerned, been adopted by men who sincerely believe in God and in the Bible. But they hold not only that God created matter and endowed it with its properties, but that He designed the universe, and so controlled the operation of physical laws that they accomplished his purpose. So there are Christian men who believe in the evolution of one kind of plants and animals out of earlier and simpler forms ; but they believe that everything was designed by God, and that it is due to his purpose and power that all the forms of vegetable and animal life are what they are. But this is not the question. What Darwin and the ad-

<sup>1</sup> That God permits men in the use of the laws of nature to distil alcohol and brew poisons, does not prove that He approves of drunkenness or murder.

vocates of his theory deny, is all design. The organs, even the most complicated and wonderful, were not intended. They are said to be due to the undirected and unintended operation of physical laws. This is Mr. Wallace's argument. He endeavors to show that it is unworthy of God that He should be supposed to have contrived the mechanism of the orchids, as a mechanist contrives a curious puzzle.

We recently heard Prof. Joseph Henry, in a brief address, say substantially: "If I take brass, glass, and other materials, and fuse them, the product is a slag. This is what physical laws do. If I take those same materials, and form them into a telescope, that is what mind does." This is the whole question in a nutshell. That design implies an intelligent designer, is a self evident truth. Every man believes it; and no man can practically disbelieve it. Even those naturalists who theoretically deny it, if they find in a cave so simple a thing as a flint arrow-head, are as sure that it was made by a man as they are of their own existence. And yet they want us to believe that an eagle's eye is the product of blind natural causes. No combination of physical forces ever made a ship or a locomotive.

It may, indeed, be said that they are dead matter, whereas plants and animals live. But what is life but one form of the organizing efficiency of God ?

Mr. Wallace does not go as far as Mr. Darwin. He recoils from regarding man either as to body or soul as the product of mere natural causes. He insists that "a superior intelligence is necessary to account for man." (p. 359) This of course implies that the agency of no such higher intelligence is admitted in the production of plants or of animals lower than man.

*Professor Huxley.*

The second witness as to the character of Mr. Darwin's theory is Professor Huxley. We have some hesitation in including the name of this distinguished naturalist among the advocates of Darwinism.<sup>1</sup> On the one hand, in his

<sup>1</sup> Mr. Huxley, if we may judge from what he says of himself, is somewhat liable to be misunderstood. He says he was fourteen years laboring to resist the charge of Positivism made against the class of scientific men to which he belongs. He also tells us in his letter to Professor Tyndall, prefixed to his volume of *Lay Sermons and Addresses*, that the "Essay on the Physical Basis of Life," included in that volume, was intended as a protest, from the philosophical side, against what is commonly called Materialism. It turned out, however, that the public re-