

*Contributions to the Theory of Natural Selection. A Series of Essays.*  
By A. R. WALLACE. London: Macmillan & Co.

EVERY naturalist will welcome with gratitude this volume; which, although it contains several essays that have already appeared, yet has exhumed them from less accessible "proceedings," and presents us with several new ones, the most important in the series. A simple, lucid style, never overcharged with metaphor; and illustrations clear and apposite, never multiplied so as to distract the reader's mind from the chain of argument, are the characteristics of Mr. Wallace's writings. No one has succeeded in placing the arguments for the origin of species by natural selection so clearly and succinctly before the unscientific public. But, passing by the very interesting chapters on mimicry and protective resemblances among animals, and on the philosophy and theory of birds' nests, the portions of the volume which treat of the development of the human races, and the limits of natural selection as applied to man, call for special notice.

In the mental animal economy Mr. Wallace gives small place to what is popularly known as *Instinct*. This he would define as "the performance by an animal of complex acts, absolutely without instruction or previously-acquired knowledge;" and, holding that most of the actions of the lower animals are derived from imitation, memory, or organization, he declines to accept the theory of instinct in any case where all other possible modes of explanation have not been exhausted, which he considers has not yet been done. Simple acts dependent upon organization cannot be properly termed instinct, any more than breathing or muscular motion. Instinct he does not consider man to possess.

But has natural selection, then, acted on man exactly as on the lower animals? Mr. Wallace is here face to face with the objection, more frequently felt than expressed, to the Darwinian hypothesis, that it applies equally to man, in whose case, instinctively (if we may be allowed to use the condemned term), we shrink from the idea. And frankly does Mr. Wallace admit the distinction between man and the lower animals, in a way which we believe will go very far to insure the general acceptance of his modified theory. He shows that there are many things which natural selection cannot do, and which plainly point to a prescient Intelligence in creation. If we can see that special organs and modifications of structure, which are useless or even hurtful in an early or lower stage of existence, become in the highest degree useful at a much later period, and are now essential to the full moral and intellectual development of human nature, we must infer the action of a foreseeing mind, as surely as when we see the breeder setting himself to produce some improvement in a domestic plant or animal. Mr. Wallace shows at some length that there is little or no difference between the bulk of the brain of the savage and of the European, whether we apply the test to the earliest Stone age remains, or the lowest existing races. The mass of the brain in a senior wrangler and an Esquimaux may be the same, yet a thousand to one will not express the chasm between their powers. The savage has a brain with a capacity far beyond his *present* needs. Yet the rudi-

ments of all the higher intellectual and moral powers are in the savage. Pure love of truth, artistic feeling, unselfish love, true gratitude, deep religious feeling, sometimes occur among savage races. The faculties are therefore latent. But in his large and well-developed brain the savage possesses an organ quite disproportionate to his actual requirements—an organ that seems prepared in advance, only to be fully utilized as he progresses in civilization. "The brain of pre-historic and of savage man seems to me to prove the existence of some power distinct from that which has guided the development of the lower animals through their ever-varying forms of being." (P. 343.)

Again, Mr. Wallace shows that man's naked skin could not have been produced by natural selection, for savage man feels the want of covering, and widely apart as are the characters of size of brain and distribution of hair, yet both lead to the same conclusion, "that some other power than natural selection has been engaged in man's production." The author pursues the same line of argument as to the forms of man's hands and feet. Early man, *as an animal*, could have gained nothing by their modification. So as to the flexible and musical voice. Advancing further, there is the same difficulty in accounting for the development of the moral sense or conscience in savage man. Summarizing the whole, Mr. Wallace writes:—

"The inference I would draw from this class of phenomena is that a superior Intelligence has guided the development of man in a definite direction, and for a special purpose, just as man guides the development of many animal and vegetable forms." "The great laws which govern the material universe were insufficient for man's production, unless we consider (as we may fairly do) that the controlling action of such higher Intelligences is a necessary part of those laws." (P. 360.)

To say that mind is a product or function of protoplasm, or of its molecular changes, is to use words to which we can attach no clear conception. There is no escape from this dilemma—either all matter is conscious, or consciousness is something distinct from matter, and in the latter case, its presence in material forms is a proof of the existence of conscious beings, outside of, and independent of, what we term matter. To assert that *will* is but the result of molecular change in the brain, is to take a great leap in the dark from the known to the unknown.

"If we have traced one force, however minute, to an origin in our own *will*, while we have no knowledge of any other primary cause of force, it does not seem an improbable conclusion that all force may be *will-force*; and thus that the whole universe is not merely dependent on, but actually *is* the *WILL* of higher Intelligences, or of one supreme Intelligence."

Thus so far as we are able to examine either the outward framework or the mental organization of man, Mr. Wallace removes him triumphantly above the operation of the natural selection which has developed the lower animals. Yet as regards the *mode* of his coming into existence, he would refer him to the same law, but at a remote period, of which we have yet no traces.

"The great modifications of structure and of external form, which resulted in the development of man out of some lower type of animal, must have occurred before his intellect had raised him above the condition of the brutes." "Man was once an homogeneous race, but at a period of which we have as yet discovered *no remains*, at a period so remote in his history that he had not yet acquired that wonderfully developed brain, &c., nor human speech, nor sympathies, and moral feelings." "At length, however, *there came into existence* a being in whom that subtle force we term *mind*, became of greater importance than his mere bodily structure." (P. 326.) "It was a revolution which in all previous stages of the earth's history had had no parallel; for a being had arisen who was no longer subject to change with the changing universe."

If, then, man be so exceptional, if between the lowest savage and the highest astronomer, as Mr. Wallace says, "Difference in bodily form and structure there is practically none," if in man's case, in defiance of all the laws of natural selection, "it is indisputably the mediocre, if not the low, both as regards morality and intelligence, who succeed best in life and multiply fastest," why may not that Higher Intelligence, which undoubtedly provided the brain, the voice, the hairless skin, the hands and feet for a future and nobler purpose, have created rather than developed this lord of physical creation? At least until the *Miocene* remains of the tropics have yielded up some vestige of the

ancestors of an homogeneous race, we are permitted to retain this belief along with a frank and cordial acceptance of the theory of natural selection, which the patient investigations of Mr. Wallace have done so much to establish.

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