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[p. 2e]

‘Darwinism.’¹

It was just a quarter of a century ago that Mr. Disraeli delivered the celebrated address at Oxford in which he referred to the burning controversy aroused by the new theories of the Evolutionists. “What,” he asked, “is the question which is now placed before society with a glib assurance which to me is most astounding. That question is this, ‘Is man an ape or an angel?’ I am on the side of the angels. I repudiate with indignation and abhorrence the contrary view, which is, I believe, foreign to the conscience of humanity.” No doubt the proposition was stated in a trenchant and rhetorical fashion, but it expressed in unmistakable terms what was then regarded as the great distinction between the supporters and the opponents of Mr. Darwin’s theories. In this case, as in many others, the contest was supposed to be between science and religion, and it was assumed that Evolution and Christianity were not compatible with each other. Since that time public opinion has been considerably modified. Everybody accepts evolution to a certain extent; it is only as to its beginning and its end that differences arise. The child that asks “Who laid the very first egg that the very first bird came out of ?” only represents in a striking form the dissatisfaction of the man who is told that nebulous matter was the origin of all things, and who can get no answer to his question as to what was the origin of the nebulous matter. So, too, at the other end of the chain of evolution, though we may admit that the wisest chimpanzee is a finer animal than the stupidest savage, yet the offspring of the monkey will be only a monkey, while the offspring of the savage may be converted by education into a philosopher. This latter consideration at any rate has its weight with Dr. Wallace. It has been said of him that though he shares with Darwin the honour of establishing the doctrine of natural selection, yet he differs from the latter in setting much narrower limits to the action of this cause in the mental as well as the physical domain, and that he regards the human faculty of making abstractions, such as time and space, as a power which could not have been thus evolved. He believes in some superior principle which has guided man in his upward path, and he connects this law with the absolute origin of life and organisation. In the present volume he declares that the human faculties of mind—

“Clearly point to the existence in man of something which he has not derived from his animal progenitors—something which we may best refer to as being of a spiritual essence or nature, capable of progressive development under favourable conditions. On the hypothesis of this spiritual nature, superadded to the animal nature of man, we are able to understand much that is otherwise mysterious or unintelligible in regard to him, especially the enormous influence of ideas, principles, and beliefs over his whole life and actions. Thus alone we can understand the constancy of the martyr, the unselfishness of the philanthropist, the devotion of the patriot, the enthusiasm of the artist, and the resolute and persevering search of the scientific worker after Nature’s secrets. Thus we may perceive that the love of truth, the delight in beauty, the passion for justice, and the thrill of exultation with which we hear of any act of courageous self-sacrifice, are the workings within us of a higher nature which has not been developed by means of the struggle for material existence.”

He refers to the “crushing mental burden” imposed upon those who maintain that we are but products of the blind eternal forces of the universe, who believe that all the slow growths of our race struggling

towards a higher life, all the aspirations for virtue and the well-being of humanity are to go for nothing, and that man and the world are alike to be as though they had never existed. He adds:—

“As contrasted with this hopeless and soul-deadening belief, we, who accept the existence of a spiritual world, can look upon the universe as a grand consistent whole adapted in all its parts to the development of spiritual beings capable of indefinite life and perfectibility. To us, the whole purpose, the only *raison d’être* of the world—with all its complexities of physical structure, with its grand geological progress, the slow evolution of the vegetable and animal kingdoms, and the ultimate appearance of man—was the development of the human spirit in association with the human body. From the fact that the spirit of man—the man himself—is so developed, we may well believe that this is the only, or at least the best, way for its development; and we may even see in what is usually termed ‘evil’ on the earth, one of the most efficient means of its growth. For we know that the noblest faculties of man are strengthened and perfected by struggle and effort; it is by unceasing warfare against physical evils and in the midst of difficulty and danger that energy, courage, self-reliance, and industry have become the common qualities of the northern races; it is by the battle with moral evil in all its hydra-headed forms, that the still nobler qualities of justice, and mercy, and humanity, and self-sacrifice have been steadily increasing in the world. Beings thus trained and strengthened by their surroundings, and possessing latent faculties capable of such noble development, are surely destined for a higher and more permanent existence, and we may confidently believe with our greatest living poet—

‘That life is not as idle ore,
But iron dug from central gloom,
 And heated hot with burning fears,
 And dipt in baths of hissing tears,
And batter’d with the shocks of doom
To shape and use.’

We thus find that the Darwinian theory, even when carried out to its extreme logical conclusion, not only does not oppose, but lends a decided support to, a belief in the spiritual nature of man. It shows us how man’s body may have been developed from that of a lower animal form under the law of natural selection, but it also teaches us that we possess intellectual and moral faculties which could not have been so developed, but must have had another origin, and for this origin we can only find an adequate cause in the unseen universe of spirit.”

It has seemed desirable to reproduce this rather long extract from Dr. Wallace’s treatise because it states with clearness the philosophical ground which he takes for his standpoint, and which is somewhat different from that of his fellow worker, Mr. Darwin.

Regarded merely as a book of natural history the work is a delightful one. It recapitulates in eloquent language the Darwinian theories; it describes the struggle for existence among plants and animals, and their variability in a state of Nature; it traces the influence of domestication; it shows how the strong crush out the weak; it enumerates the geological evidences of evolution; it describes how hereditary characteristics are transmitted, and what various elements conduce towards the perfectibility of the race. He tells us how the Darwinian theory showed that it is by means of some of the most universal laws in Nature that new species are produced, while the old species become extinct, and the survival of the fittest is thus accounted for. For instance,

“The earliest and strongest shoots may escape the slug. Their greater vigour may enable them to flower and seed earlier in a wet autumn. Plants best armed with spines or hairs may escape being devoured, those

whose flowers are most conspicuous may be soonest fertilised by insects. We cannot doubt that on the whole any beneficial variation will give the possessors of it a greater probability of living through the tremendous ordeal they have to undergo. There may be something left to chance, but, on the whole, the fittest will survive.”

Some very curious facts are given as to the connection of colour with constitutional peculiarities in the case both of animals and of plants. Thus it is a matter of common observation that male white cats with blue eyes are generally deaf, and that tortoise-shell marking, in ninety-nine cases out of a hundred, is confined to the female sex. M. Tegetmeier has found that white, yellow, pale blue, or dun pigeons, whatever their breed, are naked when hatched, while those of all other colours are covered with down. So, too—

“In Virginia there is a plant called the paint-root (*Lachnanthes tinctoria*), which, when eaten by pigs, colours their bones pink, and causes the hoofs of all but the black varieties to drop off; so that black pigs only can be kept in the district. Buckwheat in flower is also said to be injurious to white pigs, but not to black. In the Tarentino, black sheep are not injured by eating the *hypericum crispum*—a species of St. Johns-wort—which kills white sheep. White terriers suffer most from distemper; white chickens from the gapes. White-haired horses or cattle are subject to cutaneous diseases, from which the dark coloured are free; while, both in Thuringia and the West Indies, it has been noticed that white or pale-coloured cattle are much more troubled by flies than are those which are brown or black. The same law even extends to insects, for it is found that silkworms which produce white cocoons resist the fungus disease much better than do those which produce yellow cocoons. Among plants, we have in North America green and yellow-fruited plums not affected by a disease that attacked the purple-fruited varieties. Yellow-fleshed peaches suffer more from disease than white-fleshed kinds. In Mauritius, white sugar canes were attacked by a disease from which the red canes were free. White onions and verbenas are most liable to mildew; and red-flowered hyacinths were more injured by the cold during the severe winter in Holland than any other kinds.”

As to the changes of colour of animals of the same race, Dr. Wallace gives some interesting particulars. We are told that the chameleon is not, as is generally supposed, the only animal which has the faculty of changing colour at will, so as to assimilate itself to the ground on which it happens to lie, and thus to escape the observation of its natural enemies. It has, perhaps, the most elaborate apparatus for the purpose, as it possesses two layers of pigment cells of bluish and yellow colours respectively, which are [p. 2f] deeply seated in the skin, and which can be forced upwards by suitable muscles acted upon by the animal’s brain. By combining the colour from these cells, the chameleon can become brown, yellow, or green, though its normal hue is a kind of dirty white. But many flat fish also change their colour according to the colour of the bottom they rest on, and some frogs have a similar power. The chameleon shrimp, *mysis chamæleon*, is grey when on sand, but brown or green when among brown or green seaweed; and it has been shown by experiment that when this shrimp is blinded the change does not occur—a fact which seems to prove that it is not involuntary but is due to brain action. Of course, the adaptation of many animals to their habitual surroundings is now well known; but Dr. Wallace gives some additional instances. Some bats in Formosa are hardly distinguishable from the orange and green leaves of the particular trees which they inhabit. The sun-birds in Africa are of gorgeous plumage, which exactly corresponds with that of the flowers among which they spend their lives. Here is another illustration: —

“Even more curious is the case of the sloths—defenceless animals which feed upon leaves, and hang from the branches of trees with their back downwards. Most of the species have a curious buff-coloured spot on the back, rounded or oval in shape and often with a darker border, which seems placed there on purpose to make them conspicuous, and this was a great puzzle to naturalists, because the long coarse grey or greenish hair was evidently like tree moss, and therefore protective. But an old writer, Baron von Slack, in his ‘Voyage to Surinam’ (1810), had already explained the matter. He says:—‘The colour and even the shape of the hair are much like withered moss, and serve to hide the animal in the trees, but particularly when it has that orange-coloured spot between the shoulders and lies close to the tree, it looks then exactly like a piece of branch where the rest has been broken off, by which the hunters are often deceived.’ Even such a huge animal as the giraffe is said to be perfectly concealed by its colour and form when standing among the dead and broken trees that so often occur on the outskirts of the thickets where it feeds. The large blotch-like spots on the skin and the strange shape of the head and horns, like broken branches, so tend to its concealment that even the keen-eyed natives have been known to mistake trees for giraffes, or giraffes for trees.”

Some harmless animals, on the other hand, are endowed with special characteristics apparently intended to terrify their enemies. The sphinx caterpillars, for example, assume the attitude of a snake when they are attacked, and produce what, in legal phrase seems to be a colourable imitation of their model. Another large caterpillar, known in America as the “Hickory-horned Devil,” has an immense crown of orange red tentacles which, if disturbed, it erects and shakes from side to side in a very alarming manner. The result is that in its native country the negroes believe it to be as deadly as a rattle-snake, whereas it is perfectly innocuous. Dr. Wallace considers that the green colour of the body suggests that its ancestors used to conceal themselves among green vegetation, but that, growing too large to be effectively hidden, it acquired the habit of shaking its head in order to frighten away its enemies, and ultimately developed the crown of tentacles as an addition to its terrifying power.

It is impossible, within the limits of this notice, to do more than dip here and there among the interesting facts with which Dr. Wallace has illustrated his argument. But it should be said that his book is one which deserves attentive study, and which will be appreciated even by those who by no means accept his views on various disputed questions. It is the latest edition of the Darwinian theory, read by the light of the scientific discoveries of the last twenty years, and it possesses a freshness and vigour which give an impression that its author possesses the secret, if not of perpetual youth, at any rate of evergreen enthusiasm.

¹ Darwinism: An Exposition of the Theory of Natural Selection, with some of its applications. By Alfred Russel Wallace, LL.D., F.R.S., &c. With Map and Illustrations. Macmillan and Co.

The Alfred Russel Wallace Page, Charles H. Smith, 2017.