NEW PUBLICATIONS.

The Descent of Man.*

THE PRESENT POSITION OF THE ARGUMENT.

It is generally understood among Mr. DARWIN'S friends in this country that the only terms which he made with the Messrs. APPLETON, in issuing his new book on the *Descent of Man*, were that they should print a thoroughly revised and corrected edition of his first great work, *The Origin of Species*, of which hitherto there had been no complete American edition. It is to be hoped, for the credit of American publishers, that the Messrs. APPLETON will be more generous than their bond toward the distinguished author, as undoubtedly Mr. DARWIN'S last work is destined to enjoy an enormous circulation for many years to come on this side of the Atlantic. He was wise, however, in the reported contract. The work on which his fame will rest is *The Origin of Species;* and it was of the utmost importance to him as a scientific thinker that every improvement which his well-known candor, and a wider investigation, suggested in the form of the celebrated argument should be engrafted on the American edition. The Messrs. APPLETON have accordingly issued a revised "Fifth Edition," in a not very handsome style, however, of this remarkable work.

Whatever coming generations may think of the Darwinian hypothesis; whether it will be classed with the Epicurean speculations on the origin of matter, with LAMARCK'S theories of development, or the ingenious suggestions of the *Vestiges of Creation*, captivating but unsound, or whether it will stand with the nebular hypothesis, as a stable working theory of the origin of the kingdoms of life—in any case the future historian of the progress of the human mind must testify that no one speculation has so affected every branch of scientific investigation in the present century, and so influenced the whole field of natural research, as the Darwinian theory of "Natural Selection." There is not a specialty in the whole domain of natural science, however remote, in which the student will not at once perceive the influence of "Darwinism" on all new investigators.

The mode of looking at nature is changed. BACON'S philosophy did not more entirely alter the process of investigation in all branches of science, to the English mind, than has the Darwinian theory among the students of nature in Europe and America. The supernatural method of accounting for phenomena is dropped. The duty of science—not ignoring the ultimate supernatural Cause—is solely with the immediate causes of all the phenomena of life on this earth. It is assumed that every form or appearance in organic or inorganic existence can be explained, though no present explanation may be possible. The task of science is simply to collect facts with the utmost patience and fidelity, and then, if possible, to group them under some general law or mode of action, and still again attempt, with untiring industry and a love of truth which is almost a religion, to simplify and generalize from these laws a still broader law. Always to be open for new facts and premises, to candidly confess if these be opposed to the theory, to begin and build again on a broader basis if the foundation be too narrow; but never for an instant to doubt that each phenomenon in this world has a direct and sufficient natural cause—this is the spirit of the new Darwinian philosophy. Under the influence of this school the former narrow *specialists* in the field of natural science are becoming broadened. Each investigator carefully collects facts, but he gathers them under the light of broad generalizations, which connect them with the whole world of nature, and give a wonderful attraction and dignity to his pursuit.

The essence of Darwinism is that nature—though originating from divinity—is an intricate, complicated, but explainable system of things, where the obligation of the student is not to say this is an ultimate fact—this "an idea of the Creator"—this a "final cause," or "plan of creation," or "ideal form of Nature," but "what is the cause of this appearance?" DARWIN, indeed offers a cause of specific appearances, an hypothesis of origin, to which his name will always be attached. This law he has poetically named "natural selection," or the "survival of the fittest," (as SPENCER has defined it.) Under this, with the unexplained law of variation, the well-known principle of inheritance, and the great facts of overproduction and consequent "struggle for existence," he has attempted to explain the origin of all the kingdoms of life, and all the natural phenomena of this world of ours.

The works, whose titles we have placed below, are only a small portion of the important treatises issued during the past ten years, illustrating or opposing this great hypothesis. German book-sellers and libraries already have an important division in their lists, headed "*Darwinismus.*" In studying these and the writings of the co-discoverer of the law of natural selection, Mr. WALLACE, and such works as those of Sir JOHN LUBBOCK and the Duke of ARGYLL, the natural question arises, "How stands the great argument on origin?"

Many of the works we have mentioned, and such standard books of science as Sir CHARLES LYELL'S, are, in one aspect, only side illustrations of the application of the theory of natural selection. Mr. GALTON, in the volume on *Hereditary Genius*, has made, under this hypothesis, one of the most ingenious and scientific investigations on the subject of the transmission of mental and moral faculties in man which has ever been undertaken. We regret that we have no more space here to analyze its methods or quote its results. It is a book which should be in the hands of every scientific student of man. As a model of this close scientific research, we commend his ingenious explanation of the gradual extinction of the families of celebrated Judges in English history.

The strongest work by far which has appeared against Darwinism, pure and simple, is undoubtedly MIVART'S *Genesis of Species*. The Duke of ARGYLL'S writings are weak in comparison, as are nearly all arguments, especially the theological ones, on the other side. Next to this will come Mr. WALLACE'S writings, both in the article whose title we give, and in his volume on natural selection. The treatise of Mr. MIVART (whose name, unhappily, is not familiar to our scientific world) is strong from his remarkable candor and courtesy, and his thorough familiarity with points in natural history which bear on the discussion. He writes, too, with singular balance and clearness. Some of the points he makes seem almost unanswerable; and so confident are all scientific students of Mr. DARWIN'S unassailable integrity and candor, that they would not be surprised to see him at any moment abandoning some of his strongest positions under such a respectful and truth-loving assault.

The most important of MIVART'S objections are, briefly, that "natural selection" cannot account for the origin of beneficial variations; that the co-existence of closely-similar structures of diverse origin is inconsistent with it; that species sometimes develop suddenly and not gradually, and have very definite lines to their variability; and finally, that there are some phenomena in organic forms on which natural selection throws no light. His points in regard to the absence of certain fossil transitional forms, the peculiar distribution of animal life on the earth, and the physiological differences between "species" and "races," do not seem near so strong as the other, and are all capable of explanation under the Darwinian theory. Mr. WALLACE is a naturalist perhaps even superior to Mr. DARWIN. As a theorist, he early, in coincidence with the other, struck on the hypothesis of natural selection. He was one of the first—an American writer on ethnology being the first—to apply the theory to man. His explanation of the action of this principle on the formation or development of man's mental and moral faculties is not surpassed in ingenuity and delicacy of reasoning by anything which DARWIN has written.

Anything, therefore, which he could offer on the "great argument" is worthy of all attention. Both he and MIVART believe in evolution; both apparently believe in the development of man's body from a semi-human form. Indeed, MIVART has suggested, in a recent letter in *Nature*, that if the Darwinian hypothesis of man's origin be true, among the three Simian lines of descent—the Orang, Chimpanzee and Gibbon—the one which has been most parallel to man is that of the Gibbon.

But where they diverge from the great philosopher is in the extent of the working of the law of natural selection, and in his theories of the origin of the human faculties, and especially of the moral powers. They admit "natural selection" to be a *vera causa*, but not a *causa sufficiens*. It explains, but does not explain all. Mr. WALLACE is staggered by the hairless back of man, the uselessly large brain of the savage, and the ideal faculties of the lowest man, which apparently could not be formed under the law of the survival of the most useful capacities. From his long experience with savage tribes, moreover, and as a result of reflection, he has become an "intuitionist," and has no faith in the development dogma that conscience is the transmitted and accumulated result of experiences of benefit to the community in certain actions, or of the damage from the conquest of the higher social instinct by a lower instinct.

He has found a wild savage in the Malay Archipelago acting under an apparent intuition of truth and justice, where the action only brought loss both to the individual and the community. Mr. MIVART, again, is a devout orthodox believer, (though an evolutionist,) and, therefore, rejects the Darwinian explanation of the origin of the sense of right and wrong. The position of both on the great question is one which is more and more being adopted by scientific thinkers of a not too ultra stamp in both America and Europe; that the principle of natural selection is a law; that it underlies and explains the formation of varieties, and, perhaps, of nearly all species; that it has had an enormous influence in giving the whole organic world its present shape, appearance and variety; but that there are forms of life, organs, qualities and changes so peculiar and intricate, structures so complicated, features of so little benefit or injury, and sometimes of such apparent loss and disadvantage, that some other cause or law is necessary to explain them than merely the principles of "variation," "inheritance" and "struggle for existence."

Dr. ASA GRAY—than whom no American has written more lucidly on this theme, and himself a Darwinian—has somewhere said that, in the experience of naturalists, "Variation often seems to be *led* along some beneficial line." Mr. MIVART concurs with this, and we suppose Mr. WALLACE would agree; yet DARWIN himself could never accept it and hold his theory in its pure form.

In the particular argument on the "Descent of Man," Mr. WALLACE disagrees especially with his distinguished associate; and on this field his investigations and experience have probably been even greater than Mr. DARWIN'S. The immense chasm separating man from the highest form of monkey is what causes him here to doubt the universality of his own law, "Natural Selection." How a four-handed, creeping, hairy, speechless semi-human creature with, small brain and corresponding capacities, could develop into an erect, smooth-skinned, two-handed, large-brained, fire-using, and above all, speaking man, at a time when the struggle for existence is severest, and remain in a limited area of tropical earth during the enormous interval of these changes, he cannot understand. "His absolute erectness of posture, the completeness of his nudity, the harmonious perfection of his hands, the almost infinite capacities of his brain, constitute a series of correlated advances too great to be accounted for by the struggle for existence of an isolated group of apes in a limited area." There must be, he conceives, other causes than the struggle for existence to produce such an immense contrast between man and the apes.

Leaving now Mr. DARWIN'S critics, it becomes necessary to ask, "How he himself stands in the great argument?" His last book, on the *Descent of Man*, will undoubtedly be by far the most generally read of all his writings. And yet—remarkable as it is in the candor of its discussions, in the extraordinary range of its facts, the ingenuity of its explanations, and clearness of the style—it is not by any means the greatest of his works. To his many admirers, it will be almost discouraging to note that the very first application of his theory to the simplest physical and supposed generic connection, has, after all, so little force or ground to rest upon. To the physicist, no two families would seem easier to connect, under the Darwinian hypothesis, than the human and simian. And yet the careful reader will finish DARWIN'S ingenious list of physical resemblances between man and the monkey, and find them, after all, extremely vague and remote, while the gap between the two, moral and mental, will appear, as it does to WALLACE, unexplainable. Mr. DARWIN has in this volume contributed nothing to the science of ethnology, and added little to the weight of his former arguments. His presentation, however, of the analogies or resemblances between the faculties of animals and men, though not new, is deeply interesting, and cannot fail to lead to more profound investigations in this attractive field.

In one point of view, it must have a deeply humane influence—in showing the many close points of sympathy between man and "the mutes," (as a fellow-Darwinian so respectfully terms "the brutes.") DARWIN'S explanation of "conscience," which was, of course, the great stumbling-block to the application of his theory, is highly ingenious and striking, but is odious and utterly unsatisfactory to the "intuitional" thinkers everywhere, and will without doubt revolt the religious world more than any other portion of his writings. We have not space here to discuss it. Singularly enough, there is in this last work a slight "change of front" by the great theorist. He is by nature such a lover of truth, that we are convinced he would to-morrow throw up his whole hypothesis, if he found unanswerable objections to it. The arguments of his opponents have shown that there are very many structures or organs, or appearances in the organic kingdom, which cannot be said to be either useful or injurious; and which accordingly have not come under the law of natural selection.

The remarkable fact, too, of Beauty—the wonderful and delicate combinations of colors and outlines of forms through the organic and inorganic world, where no advantage seems to result from these pleasing and exquisite appearances—has staggered him. Under pure Darwinism, Beauty has no place except as it is nullity. To meet these very weighty objections, Mr. DARWIN, in the volume on the Descent of Man, has presented a new hypothesis which is almost as original as his great one.

It was hinted at in his first volume, and undoubtedly led his German followers to work it out somewhat in advance of this presentation. It is the theory of "Sexual Selection" which occupies some two-thirds of these last volumes. Nothing that DARWIN has written is more ingenious or suggestive than the long, minute and careful investigation in this field, presented in his last work. The argument is too extended to be even analyzed here. It is sufficient to say that most of his followers, and the majority of students of science, will find it ingenious, but unsatisfactory. They will admit that it explains many phenomena, but they find that Mr. DARWIN accounts for too much by it. Many of the facts included under it would seem more easily explained by natural than sexual selection. Mr. WALLACE objects also that it does not explain the beautiful colors and appearance of insects, or the lowest forms of life. The "Intuitionists" everywhere will rejoice that it leaves Beauty as unexplained as ever, while it proves, to our surprise, that the birds have the same refined and cultivated tastes as the most cultured human beings. It cannot be admitted that DARWIN, by the new theory, has removed the main objections to the old. The great question of "Origin" is as unsettled as ever.

Shall we ever know more of the "Descent of Man"? At present there is an immense and unfilled gap between human beings and the highest animals. It is not at all probable, whatever may be our theory of the physical genealogy of man, that this chasm will ever be bridged. If there be an intermediate form, it must have perished from the earth millions of years ago; for recent investigations by Prof. WHITNEY in the Drift, and even the Pleiocene of the Sierras, show that man, in his prefect development, existed at that enormously distant period on the earth. A single link in man's long genealogical chain might easily perish from existence and never be seen again. On the other hand, unbiased naturalists like WALLACE and MIVART, believe that no known natural causes can explain the origin of man's mental and moral faculties; in other words, that in the beginnings of the first human soul or mind, a supernatural power intervened. If this be allowed, it would not be a potent supposition that to this spiritual existence a peculiar medicine was supernaturally adopted, in harmony with the nearest physical forms. DARWIN himself admits that somewhere in the vast line of human development, the soul, by Divine power, was made immortal. The student of physical science may equally believe that somewhere in that time it was created, and its brain and body adopted to it.

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*THE ORIGIN OF SPECIES. Fifth edition, with additions and corrections. By CHARLES DARWIN. Pp. 447. D. APPLETON & Co., New-York. 1871.
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