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Few scientific theories have met with such a cordial reception by the world of scientific investigators, or created is so short a time so complete a revolution in general philosophy, as the doctrine of the derivation of organic species by Natural Selection; perhaps in this respect no other can compare with it when we consider the incompleteness of the proofs on which it still relies, or the previous prejudice against the main thesis implied in it, the theory of the development or transmutation of species. The Newtonian theory of gravity, or Harvey's theory of the circulation of the blood, in spite of the complete and overwhelming proofs by which these were soon substantiated, were much longer in overcoming to the same degree the deeply-rooted prejudices and preconceptions opposed to them. In less than a decade the doctrine of Natural Selection had conquered the opposition of the great majority of the students of natural history, as well as of the students of general philosophy; and it seems likely that we shall witness the unparalleled spectacle of an all but universal reception by the scientific world of a revolutionary doctrine in the lifetime of its author; though by the rigorous tests of scientific induction it will yet hardly be entitled to more than the rank of a very probable hypothesis. How is this singular phenomenon to be explained? Doubtless in great part by the extraordinary skill which Mr. Darwin has brought to the proof and promulgation [p. 98] of his views. To this, Mr. Wallace thus testifies in the Preface to his book:[1] "The present work will, I venture to think, prove that I both saw at the time the value and scope of the law which I had discovered, and have since been able to apply it to some purpose in a few original lines of investigation. But here my claims cease. I have felt all my life, and I still feel, the most sincere satisfaction that Mr. Darwin had been at work long before me, and that it was not left for me to attempt to write 'The Origin of Species.' I have long since measured my own strength, and know well that it would be quite unequal to that task. Far abler men than myself may confess that they have not that untiring patience in accumulating and that wonderful skill in using large masses of facts of the most varied kinds, – that wide and accurate physiological knowledge, – that acuteness in devising, and skill in carrying out, experiments, and that admirable style of composition, at once clear, persuasive, and judicial, – qualities which, in their harmonious combination, mark out Mr. Darwin as the man, perhaps of all men now living, best fitted for the great work he has undertaken and accomplished." But the skillful combination of inductive and deductive proofs with hypothesis, though a powerful engine of scientific discovery, must yet work upon the basis of a preceding and simpler induction. Pythagoras would never have demonstrated the "forty-seventh," if he had not had some ground of believing in it beforehand. The force and value of the preceding and simpler induction have been obscured in this case by subsequent investigations. And yet that more fundamental evidence accounts for the fact that two such skillful observers and reasoners as Mr. Wallace and Mr. Darwin arrived at the same convictions in regard to the derivation of species,

in entire independence of each other, and were constrained to accept the much-abused and almost discarded "transmutation hypothesis." And both moreover reached independently, the same explanation of the process of derivation. This was obviously from their similar experiences as naturalists; from the force of the same obscure and puzzling facts which their studies of the geographical distributions of animals and plants had brought to their notice, though the Malthusian doctrine of [p. 99] population was, doubtless, the original source of their common theory. Mr. Darwin, in the Introduction to his later work on "The Variation of Animals and Plants under Domestication," attributes the beginnings of his speculations to the phenomena of the distributions of life over large continental areas, and in the islands of large archipelagos[sic], and especially refers to the curious phenomena of life in the Galapagos Islands in the Pacific Ocean. Mr. Wallace, in his first essay, originally published in 1855, four years earlier than "The Origin of Species," refers to the same class of facts, and the same special facts in regard to the Galapagos Islands, as facts which demand the transmutation hypothesis for their sufficient explanation. While then much is to be credited to the sagacity and candor of these most accomplished travelers and observers in appreciating the force of obscure and previously little studied facts, yet their theoretical discussions of the hypothesis brought forward to explain them have been of still more importance in arousing an ever-increasing activity in the same field, and in creating a new and most stimulating interest in the external economy of life, – in the relations of living beings to the special conditions of their existence. And so the discussion is no longer closet work.

It is no web woven from self-consuming brains, but a vast accumulation of related facts of observation, bound together by the bond of what must still be regarded as an hypothesis, – an hypothesis, however, which has no rival with any student of nature in whose mind reverence does not, in some measure, neutralize the aversion of the intellect to what is arbitrary. In anticipating the general acceptance of the doctrine which Mr. Darwin and Mr. Wallace have done so much to illustrate, we ought to except those philosophers who, from a severe, ascetic, and self-restraining temper, or from preoccupation with other researches, are disposed to regard such speculations as beyond the proper province of scientific inquiry. But to stop short in a research of "secondary causes," so long as experience or reason can suggest any derivation of laws and relations in nature which must otherwise be accepted [p. 100] as ultimate facts, is not agreeable to that Aristotelian type of mind which scientific culture so powerfully tends to produce. Whatever the theological tendencies of such a mind, whether ultimate facts are regarded by it as literally arbitrary, the decrees of an absolute will, or are summarily explained by what Professor De Morgan calls "that exquisite atheism, 'the nature of things,'" it still cannot look upon the intricate system of adaptations, peculiar to the organic world (which illustrates what Cuvier calls

"the principle of the conditions of existence, vulgarly called the principle of final causes"), – it cannot look upon this as an arbitrary system, or as composed of facts independent of all ulterior facts (like the axioms of mechanics or arithmetic or geometry), so long as any explanation, not tantamount to arbitrariness itself, has any probability in the order of nature. This scientific instinct stops far short of an irreverent attitude of mild, though it does not permit things that claim its reverence to impede its progress. And so a class of facts, of which the organical sciences had previously made some use as instruments of scientific discovery, but which was appropriated especially to the reasonings of Natural Theology, has fallen to the province of the discussions of Natural Selection, and has been wonderfully enlarged in consequence.

It cannot be denied that this change has weakened the force of the arguments of Natural Theology; but it is simply by way of subtraction or by default, and not as offering any arguments opposed to the main conclusions of theology. "Natural Selection is not inconsistent with Natural Theology," in the sense of refuting the main conclusions of that science; it only reduces to the condition of an arbitrary assumption one important point in the interpretation of special adaptations in organic life, namely, the assumption that in such adaptations foresight and special provision is shown, analogous to the designing, anticipatory imaginings and volitions in the mental actions of the higher animals, and especially in the mind of man. Upon this point the doctrine of Natural Selection assumes only such general anticipation of the wants or advantages of [p. 101] an animal or plant as is implied in the laws of inheritance. That is, an animal or plant is produced adapted to the general conditions of its existence, with only such anticipations of a change or of varieties in these conditions as is implied in its general tendency to vary from the inherited type. Particular uses have no special causal relations to the variations that occur and become of use. In other words, Natural Selection, as an hypothesis, does not assume, and, so far as it is based on observation, it affords no evidence, that any adaptation is specially anticipated in the order of nature. From this point of view, the wonderfully intricate system of special adaptations in the organic world is, at any epoch of its history, altogether retrospective. Only so far as the past affords a type of the future, both in the organism itself and in its external conditions, can the conditions of existence be said to determine the adaptations of life.

As thus interpreted, the doctrine of Final Causes is deprived of the feature most obnoxious to its opponents, that abuse of the doctrine "which makes the cause to be engendered by the effect." But it is still competent to the devout mind to take a broader view of the organic world, to regard, not its single phases only, but the whole system from its first beginnings as presupposing all that it exhibits, or has exhibited, or could exhibit, of the contrivances and adaptations which may thus in one sense be said to be foreordained. In this view, however, the organical sciences lose their traditional and peculiar value to the arguments of Natural Theology, and become only a part of the universal order of nature, like the physical sciences generally, in the principles of which philosophers have professed to find no sign of a divinity. But may they not, while professing to exclude the idea of God from their systems, have really included him unwittingly, as immanent in the very thought that denies, in the very systems that ignore him? So far as Natural Theology aims to prove that the principles of utility and adaptation are all-

pervasive laws in the organic world, Natural Selection is not only not inconsistent, but is identical with it. But here Natural Selection pauses. It does not go on to what has been really the peculiar province of Natural [p. 102] Theology, to discover, or trace the analogies of organic adaptations to proper designs, or to the anticipations of wants and advantages in the mental actions of man and the higher animals. In themselves these mental actions bear a striking resemblance to those aspects of organic life in general, which Natural Selection regards; and according to the views of the experiential psychologist, this resemblance is not a mere analogy. In themselves, and without reference to the external uses of these mental actions, they are the same generalized reproductions of a past experience as those which the organic world exhibits in its laws of inheritance, and are modified by the same tentative powers and processes of variation, but to a much greater degree. But here the resemblance ceases. The relations of such mental actions to the external life of an organism, in which they are truly prophetic and providential agencies, though founded themselves on the observation of a past order in experience, are entirely unique and unparalleled, so far as any assumption in the doctrine of Natural Selection, or any proofs which it adduces are concerned. Nevertheless a greater though vaguer analogy remains. Some of the wants and adaptations of men and animals are anticipated by their designing mental actions. Does not a like foreseeing power, ordaining and governing the whole of nature, anticipate and specially provide for some of its adaptations? This appears to be the distinctive position in which Natural Theology now stands. We have dwelt somewhat at length on this aspect of our author's subject, with reference to its bearing on his philosophical views, set forth in his concluding essay on "The Limits of Natural Selection as applied to Man," in which his theological position appears to be that which we have just defined. We should like to quote many passages from the preceding essays, in illustration of the principle of utility and adaptation, in which Mr. Wallace appears at his best; but one example must suffice. "It is generally acknowledged that the best test of the truth and completeness of a theory is the power which it gives us of prevision"; and on this ground Mr. Wallace justly claims great weight for the following inquiry into the "use of the gaudy [p. 103] colors of many caterpillars," in the essay on Mimicry, etc., p. 117: "Since this essay was first published, a very curious difficulty has been cleared up by the application of the general principle of protective coloring. Great numbers of caterpillars are so brilliantly marked and colored as to be very conspicuous even at a considerable distance, and it has been noticed that such caterpillars seldom hide themselves. Other species, however, are green or brown, closely resembling the colors of the substances on which they feed; while others again imitate sticks, and stretch themselves out motionless from a twig, so as to look like one of its branches. Now, as caterpillars form so large a part of the food of birds, it was not easy to understand why any of them should have such bright colors and markings as to make them specially visible. Mr. Darwin had put the case to me as a difficulty from another point of view, for he had arrived at the conclusion that brilliant coloration in the animal kingdom is mainly due to sexual selection, and this could not have acted in the case of sexless larvae. Applying here the analogy of other insects, I reasoned, that since some caterpillars were evidently protected by their imitative coloring, and others by their spiny or hairy bodies, the bright colors of the rest must also be in some way useful to them. I further thought, that as some butterflies and moths were greedily

eaten by birds while others were distasteful to them, and these latter were mostly of conspicuous colors, so probably these brilliantly colored caterpillars were distasteful and therefore never eaten by birds. Distastefulness alone would, however, be of little service to caterpillars, because their soft and juicy bodies are so delicate, that if seized and afterwards rejected by a bird they would almost certainly be killed. Some constant and easily perceived signal was therefore necessary to serve as a warning to birds never to touch these uneatable kinds, and a very gaudy and conspicuous coloring, with the habit of fully exposing themselves to view, becomes such a signal, being in strong contrast with the green and brown tints and retiring habits of the eatable kinds. The subject was brought by me before the Entomological Society (see Proceedings, March 4, 1867), in order that those members having opportunities for making observations might do so in the following summer," etc. Extensive experiments with birds, insectivorous reptiles, and spiders, by two British naturalists, were published two years later, and fully confirmed Mr. Wallace's anticipations. His book is full of such curious matters. In a controversial essay called "Creation by Law," an answer to various criticisms of the doctrine of Natural Selection, Mr. Wallace is equally happy and able; and in his essay on [p. 104] "The Action of Natural Selection on Man," he shows a wonderful sagacity and skill in developing a new phase of his subject, while meeting, as in so many other cases, obstacles and objections to the theory. It appears, both by geological evidence and by deductive reasonings in this essay, that the human race is singularly exempt from variation and the action of Natural Selection, so far as its merely physical qualities are concerned. This follows from theoretical considerations, since the race has come to depend mainly on its mental qualities, and since it is on these, and not on its bodily powers, that Natural Selection must act. Hence the small amount of physical differences between the earliest men of whom the remains have been found and the men of the present day, as compared to differences in other and contemporary races of mammals.

We may generalize from this and from Mr. Darwin's observation on the comparatively extreme variability of plants, that in the scale of life there is a gradual decline in physical variability, as the organism has gathered into itself resources for meeting the exigencies of changing external conditions; and that while in the mindless and motionless plant these resources are at a minimum, their maximum is reached in the mind of man, which, at length, rises to a level with the total order and powers of nature, and in its scientific comprehension of nature is a summary, an epitome of the world. But the scale of life determined by the number and variety of actual resources in an organism ought to be distinguished from the rank that depends on a high degree of specialty in particular parts and functions, since in such respects an organism tends to be highly variable. But Mr. Wallace thinks, and argues in his concluding essay, that this marvelous being, the human mind cannot be a product of Natural Selection; that some, at least, of the mental and moral qualities of man are beyond the jurisdiction and measure of utility; that Natural Selection has its limits, and that among the most conspicuous examples of its failure to explain the order of nature are the more prominent and characteristic distinctions of the human race. Some of these, according [p. 105] to Mr. Wallace, are physical; not only the physical instruments of man's mental nature, his voluminous brain, his cunning hand, the structure and power of his vocal organs, but also a charac-

teristic which appears to have no relation to his mental nature, – his nakedness. Man is distinguished from all soft and delicate skinned terrestrial mammals in having no hairy covering to protect his body. In other mammals the hair is a protection against rain, as is proved by the manner in which it is disposed, – a kind of argument, by the way, especially prized by Cuvier, which has acquired great validity since Harvey's reasonings on the valves of the veins.[2] The backs of these animals are more especially protected in this way, But it is front the back more especially that the hairy covering is missed in the whole human race; and it is so effectually abolished as a character of the species, that it never occurs even by such reversions to ancestral types as are often exhibited in animal races. How could this covering have ever been [p. 106] injurious, or other than useful to men? Or, if at any time in the past history of the race it was for any unknown reason injurious; why should not the race, or at least some part of it, have recovered from the loss and acquired anew so important a protection? Mr. Wallace is not unmindful of Mr. Darwin's doctrine of Correlated Variation, and the explanation it affords of useless and even injurious characters in animals; but he limits his consideration of it to the supposition that the loss of hair by the race might have been a physiological consequence of correlation with some past unknown hurtful qualities. From such a loss, however, he argues, the race ought to have recovered. But he omits to consider the possible correlation of the absence of hair with qualities not necessarily injurious, but useful, which remain and equally distinguish the race. Many correlated variations are quite inexplicable. "Some are quite whimsical: thus cats, which are entirely white and have blue eyes, are generally deaf," and very few instances could be anticipated from known physiological laws, such as homological relations. There is, however, a case in point, cited by Mr. Darwin, the correlation of imperfect teeth with the nakedness of the hairless Turkish dog. If the intermediate varieties between men and the man-apes had been preserved, and a regular connection between the sizes of their brains, or developments of the nervous system, and the amount of hair on their backs were observed, this would be as good evidence of correlation between these two characters as that which exists in most cases of correlation. But how in the absence of any evidence to test this or any other hypothesis, can Mr. Wallace presume to say that the law of Natural Selection cannot explain such a peculiarity?

It may be that no valid proof is possible of ally such explanation, but how is he warranted in assuming on that account some exceptional and wholly occult cause for it? There is a kind of correlation between the presence of brains and the absence of hair which is not of so obscure a nature, and may serve to explain in part, at least, why Natural Selection has not restored the protection of a hairy coat, however it may have been lost. Mr. Wallace himself [p. 107] signalizes this correlation in the preceding essay. It is that through which art supplies to man in a thousand ways the deficiencies of nature, and supersedes the action of Natural Selection. Every savage protects his back by artificial coverings. Mr. Wallace cites this fact as a proof that the loss of hair is a defect which Natural Selection ought to remedy. But why should Natural Selection remedy what art has already cared for? In this essay Mr. Wallace seems to us to have laid aside his usual scientific caution and acuteness, and to have devoted his powers to the service of that superstitious reverence for human nature which, not content with prizing

at their worth the actual qualities and acquisitions of humanity, desires to intrench[sic] them with a deep and metaphysical line of demarkation[sic]. There are, doubtless, many and very important limitations to the action of Natural Selection, which the enthusiastic student of the science ought to bear in mind; but they belong to the application of the principle of utility to other cases as well as to that of the derivation of human nature. Mr. Wallace regards the vocal powers of the human larynx as beyond the generative action of Natural Selection, since the savage neither uses nor appreciates all its powers. But the same observation applies as well to birds, for certain species, as he says in his essay on "The Philosophy of Birds' Nests," "which have naturally little variety of song, are ready in confinement to learn from other species, and become much better songsters." It would not be difficult to prove that the musical capacities of the human voice involve no elementary qualities which are not involved in the cadences of speech, and in such other powers of expression as are useful at least, if not indispensable, in language.

There are many consequences of the ultimate laws or uniformities of nature, through which the acquisition of one useful power will bring with it many resulting advantages, as well as limiting disadvantages, actual or possible, which the principle of utility may not have comprehended in its action. This principle necessarily presupposes a basis in an antecedent constitution of nature, in principles of fitness, and laws of cause and effect, in the origin of which it has had no agency. The question of the origin of this constitution, if it be a proper question, belongs to metaphysical philosophy, or, at least, to its pretensions. Strictly speaking, Natural Selection is not a cause at all, but is the mode of operation of a certain quite limited class of causes. [3] Natural Selection never made it come to pass, as a habit of nature, that an unsupported stone should move downwards rather than upwards. It applies to no part of inorganic nature, and is very limited even in the phenomena of organic life. In his obvious anxiety to establish for the worth of human nature the additional dignity of metaphysical isolation, Mr. Wallace maintains the extraordinary thesis that "the brain of [p. 109] the savage is larger than he needs it to be"; from which he would conclude that there is in the size of the savage's brain a special anticipation or prophecy of the civilized man, or even of the philosopher, though the inference would be far more natural, and entirely consistent with Natural Selection, that the savage has degenerated from a more advanced condition.

The proofs of our author's position consist in showing that there is a very slight difference between the average size of the savage's brain and that of the European, and that even in prehistoric man the capacity of the skull approaches very near to that of the modern man, as compared to the largest capacity of anthropoid skulls. Again, the size of the brain is a measure of intellectual power, as proved by the small size of idiotic brains, and the more than average size of the brains of great men, or "those who combine acute perception with great reflective powers, strong passions, and general energy of character." By these considerations "the idea is suggested of a surplussage of power, of an instrument beyond the needs of its possessor." From a rather artificial and arbitrary measure of intellectual power, the scale of marks in university examinations, as compared to the range of sizes in brains, Mr. Wallace concludes it to be fairly inferred, "that the savage possesses a brain capable, if cultivated and developed, of performing work of a kind and

degree far beyond what he ever requires it to do." But how far removed is this conclusion from the idea that the savage has more brains than he needs! Why may it not be that all that he can do with his brains beyond his needs is only incidental to the powers which are directly serviceable? Of what significance is it that his brain is twice as great as that of the man-ape, while the philosopher only surpasses him one sixth, so long as we have no real measure of the brain power implied in the one universal characteristic of humanity, the power of language, – that is, the power to invent and use arbitrary signs? Mr. Wallace most unaccountably overlooks the significance of what has always been regarded as the most important distinction of the human race, – its rationality as shown in language. [p. 110] He even says that "the mental requirements of savages, and the faculties actually exercised by them, are very little above those of animals." We would not call in question the accuracy of Mr. Wallace's observations of savages; but we can hardly accord equal credit to his accuracy in estimating the mental rank of their faculties. No doubt the savage mind seems very dull as compared with the sagacity shown by many animals; but a psychological analysis of the faculty of language shows that even the smallest proficiency in it might require more brain power than the greatest in any other direction. For this faculty implies a complete inversion of the ordinary and natural orders of association in the mind, or such an inversion as in mere parrotting would be implied by the repetition of the words of a sentence in an inverse order, – a most difficult feat even for a philosopher. "The power of abstract reasoning and ideal conception," which Mr. Wallace esteems as a very great advance on the savage's proficiency, is but another step in the same direction, and here, too, *ce n'est que le premier pas qui coûte*. It seems probable enough that brain power proper, or its spontaneous and internal determinations of the perceptive faculties, should afford directly that use or command of a sign which is implied in language, and essentially consists in the power of turning back the attention from a suggested fact or idea to the suggesting ones, with reference to their use, in place of the naturally passive following and subserviency of the mind to the orders of first impressions and associations. By inverting the proportions which the latter bear to the forces of internal impressions, or to the powers of imagination in animals, we should have a fundamentally new order of mental actions; which, with the requisite motives to them, such as the social nature of man would afford, might go far towards defining the relations, both mental and physical, of human races to the higher brute animals.

Among these the most sagacious and social, though they may understand language, or follow its significations, and even by indirection acquire some of its uses, yet have no direct power of using, and no power of inventing it. [p. 111] But as we do not know, and have no means of knowing, what is the quantity of intellectual power, as measured by brains, which even the simplest use of language requires, how shall we be able to measure on such a scale the difference between the savage and the philosopher; which consists, not so much in additional elementary faculties in the philosopher, as in a more active and persistent use of such faculties as are common to both; and depends on the external inheritances of civilization, rather than on the organic inheritances of the civilized man? It is the kind of mental acquisition of which a race may be capable, rather than the amount which a trained individual may acquire, that we should suppose to be more immediately measured by the size of the brain; and Mr. Wallace has not shown that this kind

is not serviceable to the savage. Idiots have sometimes great powers of acquisition of a certain low order of facts and ideas. Evidence upon this point, from the relations of intellectual power to the growth of the brain in children, is complicated in the same way by the fact that powers of acquisitions are with difficulty distinguished from, and are not a proper measure of, the intellectual powers, which depend directly on organic conditions, and are independent of an external inheritance. But Mr. Wallace follows, in his estimations of distinct mental faculties, the doctrines of a school of mental philosophy which multiplies the elementary faculties of the mind far beyond any necessity. Many faculties are regarded by this school as distinct, which are probably only simple combinations or easy extensions of other faculties. The philosopher's mental powers are not necessarily different in their elements from those which the savage has and needs in his struggle for existence, or to maintain his position in the scale of life and the resources on which he has come to depend. The philosopher's powers are not, it is true, the direct results of Natural Selection, or of utility; but may: they not result by the elementary laws of mental natures and external circumstances, from faculties that are useful? If they imply faculties which are useless to the savage, we have still the natural alternative left us, which Mr. Wallace does not consider, that savages, or all the races of [p. 112] savages now living, are degenerate men, and not the proper representatives of the philosopher's ancestors. But this alternative, though the natural one, does not appear to us as necessary; for we are not convinced that "the power of conceiving eternity and infinity, and all those purely abstract notions of form, number, and harmony, which play so large a part in the life of civilized races," are really so "entirely outside of the world of thought of the savage" as our author thinks. Are they not rather implied and virtually acquired in the powers that the savage has and needs, – his powers of inventing and using even the concrete terms of his simple language? The fact that it does not require Natural Selection, but only the education of the individual savage, to develop in him these results, is to us a proof, not that the savage is specially provided with faculties beyond his seeds, nor even that he is degenerated, but that mind itself, or elementary mental natures, in the savage and throughout the whole sentient world, involve and imply such relations between actual and potential faculties; just as the elementary laws of physics involve many apparently, or at first sight distinct and independent applications and utilities.

Ought we to regard the principle of "suction," applied to the uses of life in so many and various animal organisms, as specially prophetic of the mechanical invention of the pump and of similar engines? Shall we say that in the power of "suction" an animal possesses faculties that he does not need? Natural Selection cannot, it is true, be credited with such relations in-development. But neither can they be attributed to a special providence in any intelligible sense. They belong rather to that

constitution of nature, or general providence, which Natural Selection presupposes. The theories of associational psychology are so admirably adapted to the solution of problems, for which Mr. Wallace seems obliged to call in the aid of miracles, that we are surprised he was riot led by his studies to a more careful consideration of them. Thus in regard to the nature of the moral sense, which Mr. Wallace defines in accordance with the intuitional theory as "a feeling, – a sense of right and wrong, – in our nature, antecedent to, and independent of, experiences of [p. 113] utility," – this sense is capable of an analysis which meets and answers very simply the difficulties he finds in it on the theory of Natural Selection. The existence of feelings of approval and disapproval, or of likings and aversions to certain classes of actions, and a sense of obligation, are eminently useful in the government of human society, even among savages. These feelings may be associated with the really useful and the really harmful classes of actions, or they may not be. Such associations are not determined simply by utility, any oftener than beliefs are by proper evidence. But utility tends to produce the proper associations; and in this, along with the increase of these feelings themselves, consists the moral progress of the race. Why should not a fine sense of honor and an uncompromising veracity be found, then, among savage tribes, as in certain instances cited by Mr. Wallace; since moral feelings, or the motives to the observance of rules of conduct, lie at the foundation of even the simplest human society, and rest directly on the utility of man's political nature; and since veracity and honor are not merely useful, but indispensable in many relations, even in savage lives? Besides, veracity being one of the earliest developed instincts of childhood, can hardly with propriety be regarded as an original moral instinct, since it matures much earlier than the sense of obligation, or any feeling of the sanctity of truth. It belongs rather to that social and intellectual part of human nature from which language itself arises. The desire of communication, and the desire of communicating the truth, are originally identical in the ingenuous social nature. Is not this the source of the "mystical sense of wrong," attached to untruthfulness, which is, after all, regarded by mankind at large as so venial a fault? It needs but little early moral discipline to convert into a strong moral sentiment so natural an instinct. Deceitfulness is rather the acquired quality, so far as utility acts directly on the development of the individual, and for his advantage; but the native instinct of veracity is founded on the more primitive utilities of society and human intercourse. Instead, then, of regarding veracity as an original moral instinct, "antecedent to, and independent of, experiences of utility," it appears to us more [p. 114] natural to regard it as originally an intellectual and social instinct, founded in the broadest and most fundamental utilities of human nature. The extension of the moral nature beyond the bounds of the necessities and utilities of society does not require a miracle to account for it; since, according to the principles of the associational psychology, it follows necessarily from the elementary laws of the mind.

(to be continued.....)