Darwinism refuted : An essay on Mr. Darwin's theory of "The descent of man." / by Sidney Herbert Laing.

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DARWINISM REFUTED.

AN ESSAY

ON

MR. DARWIN'S

THEORY OF "THE DESCENT OF MAN."

BY

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INTRODUCTION.

THE author of *The Descent of Man* and *The Origin of Species* is Charles Robert Darwin, M.A., F.R.S., a living naturalist of the highest eminence. Through the publication of these works, his name has become familiar as a household word to the mass of educated men, not only in England but throughout the world. He is the son of Dr. Robert Darwin, and grandson of Dr. Erasmus Darwin, the poet, philanthropist, and scientific physician of Lichfield. And it may be that Charles Darwin, the author of *The Descent of Man*, may have inherited from his grandfather Erasmus, who wrote such amusing and suggestive poems as *The Loves of the Plants*, that general tendency towards a particular line of speculation. The witty satirists of the day made much fun out of the elder Darwin's fanciful descriptive poetry, and did not fail to throw ridicule upon his theories of the transformations of vegetable and animal life. They parodied his *Loves of the Plants* with the *Loves of the Triangles*. This Dr. Erasmus Darwin had his own notions of development, and in some points his speculations went far beyond those of his grandson, for in 1794 he wrote thus :

"I think it not impossible that the first insects were the anthers or the stigmas of flowers, which had by some means loosed themselves from their parent plant, and that many other insects have in long process of time been formed from these, some acquiring wings, others claws, and others fins, from their ceaseless efforts to procure their food, or to secure themselves from injury." Thus we have the germ of what is now known by the name of Darwinism, though the present Mr. Darwin has not yet conducted us so far back as to find the origin of birds, beasts, and fishes in the anthers of flowers which had become detached from their parent plant.

Mr. Charles Darwin, the philosophical naturalist whose name is now so intimately linked with the evolution theory, was born at Shrewsbury in 1809, being the son of Dr. Robert Darwin, physician of that town. His mother was a daughter of Josiah Wedgwood, the modern founder of the English pottery manufacture. After attending a public school at Shrewsbury, he studied at Edinburgh University, and thence proceeded to Cambridge, where he took his degree of B.A. in 1831. His aptitude for the study of natural science must have been early perceived by his instructors, as he was recommended to Captain Fitzroy and the Lords of the Admiralty when a naturalist was chosen to accompany the surveying expedition in H.M.S. the *Beagle* in the southern seas. The *Beagle* made a scientific circumnavigation of the globe, and Mr.

Darwin's journal of this expedition is a most attractive book. Since that voyage he has not personally engaged in any distant explorations, yet his entire life, as far as health would permit, has been devoted to scientific researches. During many years past he has resided near Farnborough in Kent. He married his cousin, Miss Emma Wedgwood, by whom he has a large family. The honours of several British and foreign scientific societies have been freely conferred upon him. Mr. Darwin's reputation is independent of the "evolution" theory by which his name has been so much associated since his publication of *The Origin of Species*, and still more by his *Descent of Man*.

The theory of "development" is not new. More than twenty centuries ago it was discussed in the schools of Greece, of Egypt, and of India. Democritus, the illustrious Greek philosopher, believed that life, consciousness, and thought, were derived from the finest atoms of matter. He did not acknowledge the presence of *design* in nature, but he admitted that of *law*, which was supreme. The theory of "evolution," or development, would in all ages be attractive to minds of a certain disposition, eager to imagine one sole cause of the boundless diversity of phenomena in nature. Though such inquiries should be freely made, they ought not to pass into the region of scientific truths unless based on positive induction from observed facts. Plato once gave to the world a beau-

tiful theory of celestial motion, in harmony with his ideas of propriety and the dignity of nature. It had, we believe, but one little fault—it was not true. Our inquiry and examination of Mr. Darwin's theory of development will be to ascertain whether it is *true* or not. We shall waive all considerations of whether those views bring honour or dishonour to the dignity of man's nature; and with one set purpose in view, we shall inquire into the evidence brought to substantiate the doctrine of Darwinism. However plausible a speculative theory may be, in seeming to afford an explanation of many facts we observe, that is not a conclusive argument of its truth, even when no other explanation is forthcoming. Scientific truth must stand on its own basis of logical induction from well-ascertained facts.

CHAPTER I.

THE ORIGIN OF MAN.

MR. DARWIN'S theory is, that man, "the wonder and glory of the universe," has descended from animals of a lower organisation; that by a gradual and continuous "evolution" or development, some lowly organised animal has gone on improving in body and mind until at last it attained the noble form and proportions of man. Such a great and wonderful process must have taken almost endless ages to accomplish. And as Mr. Darwin does not limit us to millions or even billions of years, we may leave, for the present, the question of time out of our calculations.

Beginning at the very lowest type of animal life, a kind of jelly-fish, with its young floating about in the form of tadpoles, Mr. Darwin has set himself the task of showing how these animals have become beautified, strengthened, and improved, until they became men. The means used in this great transformation were, mainly, according to Mr. Darwin, natural and sexual selection, "aided perhaps by other influences and laws as yet undiscovered." Having attained manhood, these intelligent animals then diverged into distinct races,

or species, as widely different as the European and the Negro races.

After giving man a very long pedigree, Mr. Darwin comes to the "belief" in his own mind that "man is certainly descended from some ape-like creature," and so vividly does he realise to himself this interesting ancestor of ours, that he "can partly recall in imagination the former condition of our early progenitors, and can approximately place them in their proper position in the zoological series. We thus learn that man is descended from a hairy quadruped, furnished with a tail and pointed ears, probably arboreal in its habits, and an inhabitant of the Old World." As Mr. Darwin has favoured us with many illustrations of birds and beetles, frogs, monkeys, and butterflies, would it not have been highly interesting to have seen an actual sketch of this great ancestor of ours, the "hairy quadruped," with "a tail and pointed ears." This is not, we think, asking too much of Mr. Darwin, for he has so traced out in detail the "animal" from which we have all sprung, that he tells us exactly what place he would have occupied in our present system of zoological classification, and by another effort of imagination, "in the dim obscurity of the past," Mr. Darwin can see that the early progenitor of the Vertebrata must have been an aquatic animal," provided with gills, and having the heart and brain imperfectly developed. And this animal, he remarks, "*seems* to have been more

like the larvæ of our existing marine Ascidians than any other known form." A deep interest will naturally be excited in us to know something more of our early forefathers—who they were and what they were. We are furnished with a lucid explanation, "An Ascidian is an invertebrate, hermaphrodite, marine creature, permanently attached to a support. They appear scarcely like animals, and consist of a simple, tough, leathery sack, with two small projecting orifices," and their larvæ somewhat resemble tadpoles in shape. Here we behold the origin of man, and here we see our blood relations in those tadpole-like creatures. Through a long line of diversified forms we have arrived at the very earliest ancestors of man, and here let us pause a moment and take breath ere we start on the return journey to trace the Ascidian up to man. This, as a reviewer wittily remarks, we may call "the ascent of man." The two ends of this vast and almost measureless chain of animated beings are man and a fish-like animal. From this lowly organised creature, floating about like a tadpole, there gradually grew and developed higher and higher forms till the last link of the series—Man erect and godlike—was the result.

Such are the grand teachings of science aided by the "imagination." There is no break in this vast chain of organised beings from the "marine creature," the jelly-fish, up to man—or where the links are wanting, Mr. Darwin's "imagination" can readily furnish them. Professor Tyndall, who

last year expatiated so grandly on the "Uses of the Imagination in Science," ought to feel complimented that his views have been so freely adopted by Mr. Darwin, whose imagination is so fertile that he does not hesitate to let it take the place of science, when the means and methods of science fail. So strong, indeed, is the imaginative faculty in Mr. Darwin, that in "the dim obscurity of the past," where darkness and chaos reign, he can descend and call from the vasty deep, not spirits, but tadpoles; and distance so far lends enchantment to the view, that he beholds in them the "earliest progenitors of man." Plato, like Mr. Darwin, was a great philosopher, but when he left the region of facts for that of fancy, he enunciated some strange theories. He imagined that men and women were originally united, and went about with four legs and four arms, but that the gods, as a punishment for their sins, split them in half, and threatened them that, if they did not take care, they would be split up again and sent hopping about the world on one leg. So we see that Mr. Darwin has good authority, both amongst ancients and moderns, for the free use of the "imagination." But Mr. Darwin is in earnest on this matter, and can see no break in the evolutionary series, for he strongly insists that there is no difference in *kind*, but only in *degree*, between the lowest animal and the highest intellect of man: so that in these Ascidians there are the undeveloped germs of a mind like that of a Newton or

a Shakespeare, which only require *time* and *selection* to produce the one from the other. Such we understand the doctrine of Darwinism to be.

As we have no information as to where or how the Ascidians originated,—whether they were formed by a special act of creation, or were developed out of some vegetable form,—we must leave them and take the first step upwards in Mr. Darwin's evolutionary series. These Ascidians "probably gave rise to a group of fishes as lowly organised as the lancelet." The lancelet inhabiting our coasts is only about two inches in length, and is interesting for its curious organisation. Its negative qualities are the most remarkable, there being no vestige of a skull nor any enlargement of the spinal cord into a brain, and in lieu of a heart it only possesses a few elongated blood-vessels. The older naturalists classed it among worms, but it has now been raised to the dignity of a fish, on account of its muscular system being similar to that of fishes. We are now one grade nearer to man when we look upon this poor brainless lancelet, and undoubtedly much "development" must yet take place before we reach the paragon of animals. Mr. Darwin now informs us, that from the lancelet, "the Ganoids, and other fishes like the lepidosiren, must have been developed." This is a considerable step from the lancelet to the Ganoids, with their shining scales of bright enamel. Many of the genera are extinct. "The lepidosiren and some few ganoid fishes, such as the sturgeon,

have been preserved from utter extinction by inhabiting our rivers," which to them are harbours of refuge. The lepidosiren is a most remarkable animal, and forms a connecting link between the Amphibians and fishes. The specimens of lepidosiren brought to England from Africa are about a foot in length. Their bones are soft and gelatinous, and present many peculiarities. From such a fish "a very small advance would carry us on to the Amphibians," which includes in its highest division frogs and toads.

Here Mr. Darwin points out the close alliance between the Ganoids and the Amphibians, and it is now that he first favours us with photographs of our ancient forefathers—namely, frogs, toads, and long-tailed Tritons. And yet, withal, we feel some difficulty in realising our kinship with them. Our next step is a somewhat difficult one, for, unfortunately, "no one can at present say by what line of descent mammals, birds, and reptiles were derived from the Amphibians and fishes." Having bridged over by imagination the slight gap between the Amphibia and Mammalia, we find it is not difficult to conceive the steps which led from the ancient Monotremata to the ancient Marsupials. The Monotremata form the lowest division of the great Mammalian series, and at the present are represented solely by the ornithorhynchus, or duck-billed platypus and echidna. These two forms are considered the relics of a larger group which have been preserved in Australia through favourable

circumstances. These Monotremes are eminently interesting, as in some points of structure they lead towards the class of Reptiles, and yet belong to Mammals. By easy steps we ascend to the Lemuridæ, "and the interval is not wide from these to the Simiadæ." Then we are told "the Simiadæ branched off into two great stems, the new world and the old world monkeys; and from the latter, at a remote period, man, the wonder and glory of the universe, proceeded. Thus," remarks Mr. Darwin, "we have given to man a pedigree of prodigious length, but not, it may be said, of noble quality." The pedigree is, indeed, prodigious, and as for the nobility, it would seem to be reflected backwards, on the Chinese system, according to which persons, who distinguish themselves, ennoble not their children, but their ancestors.

What a pride of heart, if they have any, these lowly organised Ascidians must feel as the honoured progenitors of man. And could they but articulate their reflections, we might hear them moralising in Shakesperian language, "What a piece of work is man!—how noble in reason! how infinite in faculty!—in form and moving how express and admirable! in action, how like an angel! in apprehension, how like a God!"

But stern science, with its hard facts and its logical deductions, recalls us from the region of fancy, and demands to know if there is any proof of this "prodigious pedigree?"—if any ascertained law or principle by which it can be explained?

CHAPTER II.

PHYSIOLOGICAL ANALOGIES.

WITHOUT reference to the origin of the higher faculties of the human soul, which this genealogy involves, the physical theory of development first demands a careful scientific examination. Let us now see what proofs Mr. Darwin can produce in favour of his great and momentous theory. In the first place, we are told, respecting the bodily structure of man, that it is notorious that he "is constructed on the same general type or model with other Mammals;" and that all the bones in his skeleton can be compared with corresponding bones in a monkey, bat, or seal." And, still further, he adds that the muscles, nerves, blood-vessels, and even "the brain of man has its analogy in that of the orang." Precisely so. All this is well known to every physiologist; but, as Mr. Darwin admits, there is no period of life when those organs perfectly agree. Therefore, this argument of general analogy of physiological structure is of little value. Mere general resemblances prove nothing at all, and are hardly the "proofs" we should expect from a philosophical naturalist. Still further, Mr. Darwin urges that,

as man is liable to communicate to the lower animals, and to receive from them certain diseases, such as hydrophobia, variola, &c., therefore "this fact proves the close similarity of their tissues and blood." Here we have an instance of the small reliance to be placed upon such general statements as the above. Although there may be a strong resemblance between the blood of the higher Mammals and that of man, it does not follow that the one was produced by the other.

We are next supplied with "some trifling facts to prove how similar the nerves of taste must be in monkeys and in men." The natives of North-East Africa adopted the plan of catching wild baboons by first making them drunk. Vessels containing strong beer are placed in the way of the baboons. The poor creatures get tipsy and behave in a most strange manner. They are caught, and when sobered down on the following morning, look very cross and dismal. They hold their aching heads, and wear a most pitiable expression; and, when beer or wine is offered to them, they turn away with disgust, but will relish the juice of lemons. Another still more striking instance is that of "an American monkey, which, after getting drunk on brandy, would never touch it again, and thus was *wiser* than many men." What a theme for a moralist such facts would prove; but how weak a link in the argument that man has descended from an ape. The story of this American monkey would prove a valuable fact

if we were to attempt to demonstrate the opposite theory, that monkeys had descended from men. Here, whilst discussing the physical basis of the evolution theory, we might expect an array of incontrovertible facts, followed by close inductive reasoning, instead of which Mr. Darwin merely accumulates a variety of points of general similarity between the human frame and that of animals. He dwells on the presence in man of rudiments representing organs which exist in other species, and on the tendency of such rudiments occasionally to develop into more complete instances of such organs.

The drawing which Mr. Darwin gives of the embryos of a man and a dog, intended to show the "striking resemblances between man and the lower animals," is an utter failure; for, to an ordinary observer, the points of difference are strikingly obvious. But, even were they perfectly alike to the superficial observer, we should still believe there was some radical difference in their primary elements, knowing that they develop into such varied forms. The duty of science is to reveal hidden differences by means of the microscope and chemical analysis, and not to build vast theories on superficial resemblances. What would be thought of an astronomer who, in attempting to demonstrate the movements of the heavenly bodies, were to lay aside his telescope and mathematics, and present merely a sketch of the phenomena as they appear to the naked eyes. Assuredly,

this great problem of the origin of man, if it is ever to be solved, must be done on a more sure and scientific basis than has yet been attempted by Mr. Darwin.

The human ear is next the subject of investigation, and as it is conspicuously unlike those "pointed ears" of our great monkey progenitor, we might naturally expect some theory at least to account for the difference. But Mr. Darwin cannot say why man has lost the power of erecting his ears, but he offers a suggestion worthy of our deepest attention—namely, that our monkey forefathers, on account of their great strength and their arboreal habits, were not much exposed to danger, and so, through a lengthened period, scarcely moved their ears, and, on account of this neglect, lost the use of moving them.

Then we come to a piece of startling evidence that man once had "pointed ears." Mr. Woolner, the celebrated sculptor, whilst at work on his figure "Puck," to which he gave pointed ears, carefully studied the ears both of men and monkeys, and discovered that in some human ears there was a "little blunt point" projecting from the inwardly folded margin. Mr. Darwin's attention having been called to this little point, he at once concludes that "the meaning of these projections is not doubtful;" or, in plain words, there he finds the vestiges of the pointed ears man formerly possessed, and which now occasionally reappear. If this theory is considered satisfac-

tory and conclusive, we have at last found some evidence that man has descended from a monkey. It is remarkable, however, that so many awkward problems present themselves for solution before we can bring our minds to adopt the "development" theory. Man differs in a conspicuous degree from all other animals, in being almost without hair, except on the head and face, and also in being devoid of a tail. Two very awkward appendages to get rid of merely by selection; but firm faith in the evolutionary doctrine will overcome many difficulties. It is said that Lord Monboddo had a plausible theory to account for our ancestors having lost their tails, which was, that by continually sitting on them, they wore them completely off, after which our tails never grew again. Then, in reference to the loss of hair on the body generally, which our forefathers sustained, we wish it could be as easily accounted for as the loss of the tail.

An ardent "evolutionist" has offered a suggestion worthy of notice. Mr. Wallace believes "that some intelligent power has guided or determined the development of man," and he considers the hairless condition of the skin as coming under this head. Mr. Darwin quotes those words apparently to help him out of the enormous difficulty of accounting for it by "natural selection," knowing well that the "natives in all countries are glad to protect their naked backs and shoulders with some slight covering." Mr. Darwin then remarks that, "no one supposes that the naked-

ness of the skin is any *direct advantage* to man, so that his body cannot have been divested of hair through natural selection." And still further, he candidly acknowledges that neither conditions of climate nor correlated development will account for the loss of hair in the human species. The simple fact is, that on the "development" theory it is utterly inexplicable.

We are now entitled to ask, before leaving this part of the subject, what has Mr. Darwin proved from the three classes of facts adduced by him. We answer, literally nothing. Both facts and arguments are against him. In reviewing the arguments that, because man and the lower animals have limbs somewhat similar to each other, that their blood and tissues are not unlike, that they are liable to similar diseases, and possess rudiments which seem to show a close connection between them, we feel that the facts and reasoning therefrom are altogether inadequate to support the theory of "evolution." Indeed his arguments on this point seem to be singularly wanting in force and conclusiveness, and, as in the instances given on embryology, the arguments confute themselves by their absurdity and superficiality. And because we demur to the conclusions arrived at by Mr. Darwin he attributes our unbelief to "natural prejudice and that arrogance which made our forefathers believe they were descended from demigods."

Such language may be considered "scientific;"

but it is certainly not convincing. On the evolution principle difficulties seem to vanish as with the rod of an enchanter, for, remarks Mr. Darwin, "we have only to suppose" certain things, "then we can understand" how certain other things occurred, and "why it came to pass" that so and so happened. Thus, after heaping supposition upon supposition, we arrive at the grand conclusion, and are urged "frankly to admit" that we have all descended from a hairy animal with pointed ears and a tail. For any naturalist to hold aloof from such a belief till convinced by fact and argument, seems strange to Mr. Darwin and almost incredible; for he says that "to take any other view" than the development theory "is to admit that our own structure, and that of all the animals around us, is a mere snare laid to entrap our judgment." Are we to understand from these words that when we meet with difficulties in natural science we are to consider them as intellectual sign-posts advisedly put there to lead our understanding astray? Or, on the other hand, to resolve them only by the new and facile method of supposition and imagination? To take one more instance of this style of argument, Mr. Darwin tells us that he finds it impossible to explain the similarity between the hand of a man or a monkey, the foot of a horse, the flipper of a seal, and the wing of a bat, except upon the theory of development. If we say that they have all been formed upon the same general plan, which seems a reasonable expla-

nation, Mr. Darwin replies that such an answer is not a *scientific* explanation," which is quite true, if we assume that the "development" theory alone is scientific. But that is the very question to be proved. As to whether it is scientific or not to believe certain theories, depends upon whether those theories are *true* or not.

In the next chapter we shall pursue our inquiry into the evidence that can be adduced in favour of the process of development.

CHAPTER III.

ON THE DEVELOPMENT OF SPECIES.

IS it a matter of *fact* that species have been developed by force of circumstances from other species, and that man has descended from an ape or a monkey? We believe the theory to be totally unfounded from a scientific point of view, and therefore, when Mr. Darwin assumes the development theory to be scientific, his arguments fail in their force and conclusiveness. Indeed, he so often uses such phrases as "what may have been," or "can be," or "I cannot believe," as to betray his own consciousness of the want of sound scientific argument. And yet after much hesitation, doubt, and difficulty, he arrives triumphantly at the conclusion that "Man *has* certainly descended from some ape-like creature," whilst at the same time he has failed to prove one single instance of a clearly distinct species having been developed into another species. "We cannot believe," to use the "scientific" language of Mr. Darwin, that the poor Ascidians ever grew into fish, or that fish ever grew into frogs, or frogs into mammals, birds, and reptiles, or that lemurs grew into monkeys,

and monkeys into men, until we have some evidence that one species may develop into another. Horses remain horses, in spite of their vast varieties; and sheep will continue to be sheep through numberless variations; and pigeons, with all their remarkable differences, will never be anything but pigeons; and monkeys, baboons, and apes, in spite of all that can be done to elevate them mentally, morally, and physically, will remain to perpetuate their species and transmit to their successors all the marks of their lowly origin. We are not alone in our belief that Mr. Darwin has failed in his task of proving that man has descended from some lower form of organised existence. Some of the most eminent scientific men of the present day are entirely opposed to Mr. Darwin's theory, whilst several of those who believe in it think that he carries it too far.

Professor Huxley, an ardent supporter of the development theory, writes in a tone of less confidence than Mr. Darwin,* "After much consideration, and with assuredly no bias against Mr. Darwin's views, it is our clear conviction that, as the evidence stands, it is not absolutely proven, that a group of animals, having all the characters exhibited by species in nature, has ever been originated by selection, whether artificial or natural. Groups having the morphological character of species, distinct and permanent races in fact, have been so produced over and over again; but

* Professor Huxley's *Essays, &c.* 1870.

there is no positive evidence, at present, that any group of animals has, by variation and selective breeding, given rise to another group which was even in the least degree infertile with the first. Mr. Darwin is perfectly aware of this weak point, and brings forward a multitude of ingenious and important arguments to diminish the force of the objection. We admit the value of these arguments to their fullest extent—nay, we will go so far as to express our belief that experiments, conducted by a skilful physiologist, would very probably obtain the desired production of mutually more or less infertile breeds from a common stock in a comparatively few years; but still, as the case stands at present, this little 'rift within the lute' is not to be disguised nor overlooked."

He owns to a "little rift within the lute," which, alas! is more than sufficient to spoil the finest harmony of the Darwinian theory. As the case now stands, by the admission of such an authority as Professor Huxley, no definite proof has yet been obtained that the limits of true species have ever been passed. This admission is so far important that it shows that the views of those who assert the independence of species are in harmony with the teachings of science and the facts of our present knowledge; and still further, it is evidence that those who hold the doctrine of evolution are, in one of its most important points, unsupported by evidence.

Is it not surprising then, that with such a com

plete flaw in the argument, a man of high scientific attainments like Mr. Darwin should speak as we have seen of man having *certainly* descended from an ape? There appears to be a complete misapprehension of the argument from approximation. It seems tacitly assumed that *mere approximation*, provided that it can be carried sufficiently close, implies in itself ultimate coincidence. Thus the whole theory of Darwinism is founded on general resemblances in the variations of different species. Otherwise Mr. Darwin would be able to say, "Here is a case of one true species having developed into another; here is the practical proof that approximation ends at last in coincidence." But this is precisely what Mr. Darwin is unable to do, and therefore the whole theory of likeness in bodily structure is totally unworthy the reliance Mr. Darwin so confidently places upon it.

CHAPTER IV.

THE MENTAL POWERS OF MAN AND ANIMALS.

AFTER the disappointment we have experienced in examining all that could be adduced as evidence that man has descended from an ape, we turn with pleasure from the consideration of man's physical structure and rudiments to hear what can be said of the mental relationship of man to the lower animals. In the opening words of this chapter, Mr. Darwin appears fully to appreciate the difficulties of the task he has undertaken, and at once acknowledges, with philosophical candour, that there is an "enormous" difference between the mind of one of the lowest savages and that of the most highly organised ape. And still further states, that "the difference would, no doubt, remain immense, even if one of the higher apes had been improved or civilised as much as a dog has been in comparison with its parent form, the wolf or jackal." So far we are fully in accord with Mr. Darwin, and from the illustrations which follow these propositions, we think that we have not misapprehended his idea. He tells us that "the Fuegians rank among the

lowest barbarians," and then remarks with what surprise he observed that three of these said "lowest barbarians," after a little intercourse with Europeans, "resembled us in disposition and in most of our mental faculties." This testimony is most important, and bears directly upon the point under discussion, and proves, beyond doubt, that the lowest savage possesses a mind and an intellect similar in *kind* to that of the most civilised races of men. After thus stating so explicitly and so admirably his leading propositions, Mr. Darwin gives us, in language no less plain, his crucial test.

"If no organic being excepting man had possessed any mental power, or if his powers had been of a wholly different nature from those of the lower animals, then we should never have been able to convince ourselves that our high faculties had been gradually developed." We have thus far on this topic followed Mr. Darwin with intense interest and pleasure, and now with a clear issue before us we await the evidence that is to prove that there is no fundamental difference between man and the higher class of animals, such as apes and monkeys. But before proceeding further we are bound to notice a fallacy of reasoning, so obvious indeed that it scarcely needs exposure. It is in the ambiguous use of the term "mental power," where in the first instance it means *instinct*, and evidently in the second *reason*. The phrase we object to is this, that "there is a much wider interval in mental power between

one of the lowest fishes, as a lamprey or lancelet, and one of the higher apes, than between the mental power of an ape and man; yet this immense interval is filled up by numberless gradations." We admit most readily that there is an "immense interval" between the *instinct* of a lamprey and that of an ape, and that this great interval can be filled up by "numberless gradations," but the question is altogether different when a comparison is made between the "mental power" of an ape and that of a man. If by the phrase "mental power," Mr. Darwin means *reason*, then he is comparing instinct with reason, two decidedly different things; or if he intended it to mean *instinct*, then the interval between man and some of the higher animals is not "immense," for man is surpassed in *instinct* by many of the lower animals: so much so that Cuvier maintains that instinct and reason stand in an inverse ratio to each other, or that animals with most reason have least instinct, and those with most instinct are possessed of the least faculty for reasoning.

We thus leave Mr. Darwin on the horns of this dilemma without feeling bound "to admit" that the "immense interval," between the instinct of an ape and the reason of a man, can be bridged over by a comparison with things so totally different. To have compared the instinct of a fish and an ape, and the reason of a savage with that of a philosopher, would have been just. But to attempt to overleap the immense chasm between

instinct and *reason* by the use of an ambiguous term, could not be passed by without notice, especially, as Mr. Darwin informs us, that his "object in this chapter is solely to show that there is *no fundamental difference* between man and the higher mammals in their mental faculties."

Beginning with the lowest forms of life, we inquire what Mr. Darwin has to say of the development of their "mental powers," when, to our astonishment, we are plainly told that there is no evidence whatever to be obtained, and that it is "as hopeless an inquiry as how life first originated." We begin to feel disappointment when Mr. Darwin says, "it would be superfluous to enter into many details on this head," and that this part of the subject "must here be treated briefly." At least, we might have expected that a well-developed imagination would have constructed as plausible a theory on the "evolution" of the intellectual faculties as that given on the bodily structure, and, still more, that we should have had an accurate and a philosophical analysis of the mental powers, both of man and the higher mammals. Then we ought to have been conducted onwards by cogent reasoning, based on well-ascertained facts, and numerous details to have brought us to a logical and an irresistible conclusion, that "there is no fundamental difference" between the mind of a man and that of an ape.

Mr. Darwin evades the real difficulties of the

question respecting the early development of the mental powers, by telling us that they are "problems for the distant future, if they are ever to be solved by man;" but, at the same time, promises "to give some additional facts under sexual selection, showing that the mental powers of animals very low in the scale are higher than might have been expected." Thus, signally failing to grapple with this important part of the subject, we pass on, over a vast gulf, finding nothing but a few disconnected comparisons between some of the instincts and reasoning powers of the higher and lower class of animals, but in their import and bearing altogether inconclusive. For instance, Mr. Darwin acknowledges that man has fewer instincts than the ape, and the baboon, and other animals high in the scale, and gives an instance of the remarkable instinct displayed by the chimpanzee, which is a native of Africa, and the orang, which inhabits the islands of Eastern Asia. Though widely separated from each other in point of distance, it is a remarkable fact that they build platforms on which they sleep, very similar to each other in shape and construction. As there is no possibility of one set of animals teaching the other, and as they go on from generation to generation building in the same manner, we not unreasonably conclude that both the orang and chimpanzee build their platforms from instinct, just as birds of the same species build similar nests whether they are in England or Australia. But Mr. Darwin "cannot feel sure"

but that it may arise from these "animals having similar wants, and possessing similar powers of reasoning." If, however, any distinction is to be kept up between the power of instinct and that of reason, we must unhesitatingly place such instances under the term instinct. Again, in the case of apes and monkeys which avoid the many poisonous fruits of tropical climates,—a fact we attribute solely to instinct, though, as before, Mr. Darwin "cannot feel sure" that these animals do not learn "from their own experience, or that of their parents."

We are now glad to escape from this "cannot feel sure" mode of reasoning, and to arrive at something positive on the subject of instinct, for Mr. Darwin tells us, "it is *certain* that apes have an instinctive dread of serpents, and probably of other dangerous animals."

But the question of Instinct will be more fully discussed in the following chapter, whilst comparing the reasoning and instinctive powers of man and the lower animals.

CHAPTER V.

ON INSTINCT AND REASON.

AS Mr. Darwin had so fully discussed the question of Instinct in the *Origin of Species*, we could hardly expect so lengthy a disquisition upon that question, except in its relation to the thinking and reasoning powers of man, in the *Descent of Man*. However, the important subject of instinct is far too lightly treated, and, indeed, is so much passed over, that we have to turn to the former work to ascertain precisely what Mr. Darwin's views on instinct are, and here we find a most remarkable admission, strongly opposed to the idea of development. He writes thus:* "It would be the most serious error to suppose that the greater number of instincts have been acquired by habit in one generation, and then transmitted by inheritance to succeeding generations. It can be clearly shown that the most wonderful instincts with which we are acquainted,—namely, those of the hive-bee, and of many ants,—*could not possibly have been acquired.*" Such an admission is, of itself, fatal to the whole theory of evolution.

* *Origin of Species.* Third Edition. P. 229.

Referring again to the *Origin of Species*, we find an excellent definition of instinct, as "an action which we ourselves should require experience to enable us to perform, when performed by an animal, more especially by a very young one, without any experience, and when performed by many individuals in the same way, without their knowing for what purpose it is performed, is usually said to be instinctive." We accept this as a fair statement of what is understood by instinct, and we now ask Mr. Darwin on what principle he can bridge over this vast gulf between reason and instinct, or how instinct could have been developed into reason. We find no answer to such a question in the *Descent of Man*. We can make great allowances to Mr. Darwin on account of his intense love of natural history, his close and accurate observation, and above all his admirable style of describing the habits and instincts of animals. His description and explanation of the cell-making instinct of the hive-bee is remarkable. Mr. Darwin thinks the man must be dull indeed who can examine the exquisite structure of a comb without being excited to enthusiastic admiration, and yet but the work of instinct. A matter for still greater wonder is that "bees have practically solved a recondite problem, and have made their cells of the proper shape to hold the greatest possible amount of honey, with the least possible consumption of precious wax in their construction." Yes, by *instinct* the bee has accom-

plished a work that a skilful artizan, with proper tools and appliances, would find it difficult to equal in full daylight, though the comb is made by a crowd of bees in a dark hive. In fact, Mr. Darwin admits that "the comb of the hive-bee, as far as we can see, is absolutely perfect in economising wax." And it is the acquirement of such an instinct as this that cannot be explained by either natural or sexual selection.

Let us now patiently examine what can be said in favour of the lower animals, possessing even in a small degree those intellectual powers which place man so far in advance of all other organised beings. On this point Mr. Darwin remarks, that "of all the faculties of the human mind, it will, I presume, be admitted that *reason* stands at the summit." We are then reminded that few persons doubt that "animals possess some power of reasoning." As proof of this, "animals may constantly be seen to pause, deliberate, and resolve." And further, Mr. Darwin adds, that the more naturalists study the habits of animals, the more they attribute to reason and the less to unlearnt instincts. Several instances are then given as examples or illustrations of the reasoning powers of monkeys and dogs. These stories are well authenticated, as indeed, all Mr. Darwin's are; at the same time, we believe them totally inadequate to substantiate the point at issue. It is stated by Rengger, that when he first gave the monkeys some eggs, they hastily seized them, and thus smashed them,

losing much of their contents; afterwards they learnt to take the eggs more carefully, and to break them by tapping one end gently against some hard body, and then picking off the bits of shell with their fingers. In another instance, when a monkey had cut himself with a sharp-edged tool, he would not touch it again, or, if he did, would handle it most carefully. Lumps of sugar wrapped in pieces of paper were given to the monkeys, which they ate greedily; but when a live wasp was put in with the sugar, the monkeys were stung, after this they were more cautious, and held up the packet to their ears before opening it, to detect any movement in it.

After giving the instances just related, Mr. Darwin, as we think, too suddenly jumps to a conclusion, and thus remarks that "anyone who is not convinced by such facts as these, and by what he may observe with his own dogs, that animals can reason, would not be convinced by anything that I could add." As we are not aware what Mr. Darwin *could have added*, either by way of fact, argument, or illustration, we may reasonably conclude that he has said the best things he could in support of his theory. "Nevertheless," he adds, "I will give one case with respect to dogs, as it rests on two distinct observers, and can hardly depend on the modification of any instinct." As this "case" has been cited, and great stress laid upon it as proving that dogs at least possess reason, we feel bound to narrate the story. It

appears that two wild ducks had been winged and fell on the opposite side of a stream, a retriever tried to bring over both ducks at once, but as she could not succeed, she deliberately killed one and brought over the other, and then returned for the dead bird; and the fact of her killing one was the more remarkable as before she had never been known to ruffle a feather. At first sight this seems a "case" of reasoning, till we remind ourselves of the powerful instincts of dogs not to allow the game to escape; and we see at once that it was a remarkable instance of *natural instinct* prevailing over the influence of the training the dog had received never to ruffle a feather. This view of the case is strongly confirmed by another story, where two partridges were shot, one being killed and the other wounded; the latter ran away and was caught by the retriever, who on her return came across the dead bird. She stopped, evidently greatly puzzled, and after one or two trials, finding she could not take it up without permitting the escape of the winged bird, she considered a moment, then deliberately murdered it by giving it a severe crunch, and afterwards brought away both together. This was the only instance of her ever having wilfully injured any game." Upon this instance Mr. Darwin remarks: "Here we have reason, though not quite perfect, for the retriever might have brought the wounded bird first and then returned for the dead one, as in the case of the two wild ducks." And had there been any play of

reason we say that is exactly what the retriever would have done. But, as in the former case, strong natural *instinct* not to allow the bird to escape prevailed over the *habit* she had of bringing to her master the game uninjured. If such instances as these are the strongest evidences that can be brought to prove the kinship of man to the brutes, we fear that Mr. Darwin will not only fail to gain converts to his theory, but will rather confirm his readers in the belief that there *is* a fundamental difference between the mental powers of man and the lower animals. We should also remember, in considering such cases as the preceding, that *instinct* alone will enable some of the lower animals to do what man could not do without much thought and reasoning. In fact this is the true distinction between *instinct* and *reason* that the lower animals do what to *reasoning man* appears marvellous. A dog tracking his prey by the acute sense of smell will far surpass the utmost exertions of human sagacity.

CHAPTER VI.

ON THE MENTAL POWERS—(*continued*).

IN reference to the higher mental qualities of "abstraction, individuality, and self-consciousness," Mr. Darwin reasons thus: "It would be useless to attempt discussing these higher qualities, which, according to several recent writers, make the sole and complete distinction between man and the brutes, for hardly two authors agree in their definitions." But we see no reason in this, why Mr. Darwin should not have constructed his own theory as he does upon other matters without waiting for all authors to agree in their definitions of those high faculties, upon which all metaphysical writers *are agreed* that man *does possess*, and which place him so far above the brute creation. But he avoids the difficulty on account of "several recent writers, who cannot agree about the definition," and proceeds in his reasoning, by saying, "such faculties could not have been fully developed in man until his mental powers had advanced to a high standard, and this implies the use of a perfect language. No one supposes that one of the lower animals reflects whence he comes or whither

he goes—what is death, or what is life, and so forth." "But," continues Mr. Darwin, reducing his argument to an absurdity, "can we feel sure that an old dog with an excellent memory and some power of imagination, as shown by his dreams, never reflects on his past pleasures in the chase?—and this would be a form of self-consciousness." Such a course of reasoning, from the sublime downwards, needs scarcely a word of comment, for the development of a "perfect language" itself implies the use of those high faculties. For a language *without* being "perfect" is at once the expression and the instrument of thought, and therefore in the use of terms there must be notions in the mind to correspond to those expressions. From considering the development of thought we are thrown back to the development of language, and of necessity we are again thrown on the development of thought. This appears something like arguing in a circle. That so little can be said on this vital link in the chain which connects man with the lower animals, will strike with surprise many who are not believers in the theory of "evolution." And it is on this point that Mr. Darwin elects that his theory shall stand or fall; for if it can be shown that the mental powers of man are "of a wholly different nature from those of the lower animals, then," he says, "we should never have been able to convince ourselves that our high faculties had been gradually developed." A more complete and utter failure we can hardly imagine,

than Mr. Darwin has made in attempting to show that the difference in man's mental power with that of animals was only one of *degree* and not of *kind*.

We now pass on to consider what can be said of the emotional faculties of the mind, "which are very important as forming the basis for the development of the higher mental powers." It is said that animals enjoy excitement and suffer from *ennui*, as may be seen from dogs and monkeys. All animals feel wonder whilst many exhibit curiosity. The possession of the latter quality often causes them to suffer, as the hunter plays tricks with them, attracts, and catches them. This happens with deer, wild ducks, and even the wary chamois. Monkeys have an instinctive dread of snakes, and yet their curiosity often tempts them to satisfy their horror in a most human fashion. Mr. Darwin was so much surprised at the accounts he heard of their dread of serpents and of their curiosity to inspect them, that he determined to try some experiments on this point. Accordingly, he took a stuffed and coiled up snake into the Monkey-house at the Zoological Gardens, and the excitement thus caused was one of the most curious spectacles which he ever beheld. Some of the monkeys, excited and alarmed, dashed about their cages and uttered sharp signal cries of danger, which were understood by the other monkeys. A few young monkeys and one old baboon alone took no notice of the snake. Mr. Darwin then placed the stuffed specimen on the ground in one of the

larger compartments. After a time all the monkeys collected round it in a large circle, and staring intently, presented a most ludicrous appearance. They became extremely nervous, so that when a wooden ball, with which they were familiar as a plaything, was accidently moved in the straw, under which it was partly hidden, they all instantly started away. These monkeys behaved very differently when a dead fish, a mouse, and some other new objects were placed in their cages; for, though at first frightened, they soon approached, handled, and examined them. He then placed a live snake in a paper bag, with the mouth loosely closed, in one of the larger compartments. One of the monkeys immediately approached, cautiously opened the bag a little, peeped in, and instantly dashed away. Then monkey after monkey, with head raised high and turned on one side, could not resist taking momentary peeps into the upright bag, at the dreadful object lying quiet at the bottom. "It would almost appear," says Mr. Darwin, "as if monkeys had some notion of zoological affinities," for some exhibit a strange, though mistaken, instinctive dread of innocent lizards and frogs. "An orang, also, has been known to be much alarmed at the first sight of a turtle." We have given the foregoing instances almost entire, in order to show the kind of stories on which Mr. Darwin depends to produce conviction that the mental powers of man and the brutes are not so much unlike.

The principle of *Imitation* is strong in man, especially amongst men in a barbarous state. Few of the lower animals voluntarily imitate actions performed by men until in the ascending scale we come to monkeys, which are well-known to be ridiculous mockers. "Birds imitate the songs of their parents, and sometimes those of other birds, and parrots are notorious imitators of any sound which they often hear." Mr. Darwin lays great stress upon the power of *Attention* which some animals manifest; as when a cat watches by the hole of a mouse, and prepares to spring on its prey. Then he remarks that most animals possess good *Memories* for persons and places, and tells us of a baboon that recognised its master, after an absence of nine months. A still stronger instance of the power of memory is given of a savage dog belonging to Mr. Darwin, which recognised him after an interval of five years and two days. Even ants know their fellow-ants after an absence of four months. Then Mr. Darwin makes a remark to which we can furnish an apt illustration. He says that "animals can certainly, by some means, judge of the intervals of time." For four nights in succession, whilst writing this book, a mouse has come and gnawed at the wainscotting, at about a quarter past eleven, and has not varied more than five minutes each evening. On the fourth evening, on hearing the sounds, I exclaimed involuntarily, "It is a quarter past eleven." It was, however, three minutes past that time, and I was

ready to blame the mouse for a want of punctuality, but the next day I ascertained that the clock was a few minutes fast, and therefore I wish to give the mouse full credit for its regularity of habits, and as Mr. Darwin would put it, "judging properly of the intervals of time."

Then, as regards the power of *Imagination*, Mr. Darwin attempts to show that many of the lower animals possess this power, and tells us that it is stated, on good authority, that dogs, cats, horses, and other of the higher animals, have vivid dreams. This, he thinks, "is shown by their movements and voice;" but as there is no evidence whatever of their having the faculty of imagination, we pass the subject by without further remark.

Having thus passed in review the emotional faculties of some of the higher animals, we must confess our surprise that so *little* has been told us that was new, and still more that that little fails to supply the materials for bridging over the chasm of fundamental differences between man and the brutes. If we grant that many animals do possess some emotions similar to man, such as wonder and curiosity, imitation, memory, and attention, what does it all prove, and of what avail to heap together mere stories and anecdotes of the instinct of monkeys, dogs, and birds? We admit most readily that dogs and monkeys do possess most remarkable instincts, but it is not by such instances as these that the views now generally held respecting the difference between the mental

faculties of men and animals can be overthrown. The proofs of such vast theories as that of evolution require infinitely more care and research than Mr. Darwin has bestowed on them to render them convincing; and we can, therefore, readily endorse his own words, when he tells us that those subjects, though of the highest interest, are treated by him in "a most imperfect and fragmentary manner."

It is a fact not to be overlooked, that of all animals, "*Man alone* is capable of progressive improvement." The human mind is capable of almost indefinite expansion, whilst the mental faculties of the lower animals are restricted and definite. The marvellous power of abstraction and generalisation, of which an educated man is capable, takes us far above the region of the highest animal instincts, and forces on the mind a conviction of an *essential difference* between the mind of man and the instinct of animals. Mr. Darwin struggles in vain against this objection by adducing such weak illustrations of the expansive power of brute intellect as that old animals are more difficult to catch or to poison than young ones; yet, as all have not partaken of the poison, or had their own feet in the trap, he thinks that they must learn caution from "their brethren." "Our domestic dogs are descended from wolves and jackals; and though they may not have gained in cunning, and may have lost in wariness and suspicion, yet they have progressed," Mr. Darwin

believes, "in certain moral qualities, such as in affection, trustworthiness, temper, and probably in general intelligence." These instances go far to prove the limit and boundary there is to the intelligence of the lower animals, and, consequently, the impassable gulf between them and man.

A striking illustration of the limited mental power of animals is seen in the fact that no instance was ever known that an animal fashioned a tool. This is an important distinction between using a tool, as some animals may be seen to do. The chimpanzee will crack a nut, like a walnut, by using a stone. Some birds will break the shells of snails by dashing them on a large stone. We are then told of a sagacious monkey that hid the stone which he used for cracking nuts. These are mere instances of the power of instinct; but, beyond this, animals do not go. They never shape an implement for any purpose whatever. To fashion an instrument for a particular purpose is absolutely peculiar to man. Mr. Darwin admits that this "is no doubt a very important distinction," and then takes refuge in a "suggestion" of Sir John Lubbock's, "that when primeval man first used flintstones for any purpose, he would have accidentally splintered them, and would have then used the sharp fragments." Granting that this accidental breakage might take place, the essential point is still left unexplained how man came *designedly* to manufacture tools for special purposes; but Mr. Darwin continues, "From this step it would be

a small one to intentionally break the flints, and not a very wide step to rudely fashion them." These small steps are just the points Mr. Darwin fails to substantiate either by fact or argument.

"The art of making fire" is a still greater puzzle to believers in the "evolution" doctrine, for it is a notorious fact that animals have an instinctive dread of fire, and travellers often secure themselves from the attacks of wild beasts by making large fires. How, then, is it probable that any animal progenitors of ours should so overcome their instincts as to discover the use of fire and the art of making it. If we ask *when* this took place, Mr. Darwin replies, "This last discovery, probably the greatest, excepting language, ever made by man, dates from before the dawn of history." "*Before the dawn of history*,"—a safe place in which to relegate all difficult and unsolvable questions is the limbo of untold ages and remote periods. Sir John Lubbock's testimony on this point is very important, as showing the general use of fire among the rudest tribes, and the utter improbability of its being discovered by any mere ape-like creature in the early days of development.

Sir John remarks,* that "it cannot be satisfactorily proved that there is at present, or has been within historical times, any races of men entirely ignorant of fire. It is at least certain that, as far back as the earliest Swiss lake-villages, and Danish

* *Pre-historic Times.* Second Edition. P. 548.

shell-mounds, the use of fire was well-known in Europe."

Taking this testimony, which is unimpeachable, the argument derived from the fact that MAN, in the earliest known ages, used fire; whilst unreasoning animals, that are guided solely by instinct, do not, and never did use fire, tells sadly against the theory of development.

CHAPTER VII.

ON LANGUAGE.

WE now pass to the great and all-important question of language, which we think might fairly have claimed from Mr. Darwin one chapter for its discussion, instead of the subject having been crowded into a few pages in the middle of a chapter on the "Mental Powers;" especially as Mr. Darwin does not underrate its importance and bearing on the great question before us: for, in the opening sentence, we most cordially agree with his view, that "this faculty has justly been considered as one of the chief distinctions between man and the lower animals." And, whatever may be said of the noises made by animals, such as the barking, yelping, howling, and growling of dogs as a kind of language in which they express their ideas of joy or anger, we still see a radical difference between the articulate language of man, and the cries of the lower animals.

Mr. Darwin, however, further states that, "It is not the mere power of *articulation* that distinguishes man from other animals, for, as everyone knows, parrots can talk; but it is his large power

of connecting definite sounds with definite ideas, and this obviously depends on the development of the mental faculties." Here we have another instance of the way in which Mr. Darwin escapes from a difficulty he recognises, by running away to some other difficulty. If, for instance, "articulate language is peculiar to man," of what value is it in solving the difficulty to say that in other respects man and animals are alike. Our cries of fear, pain, and joy, may be similar in some respects to the cries of animals, but that does not in the slightest respect touch the great question of *articulate speech* so eminently characteristic of man. Still further, we would ask, what is the nature of those "mental faculties" which render definite ideas possible? Mr. Darwin tells us that the chief characteristic of language is the power of connecting definite sounds with definite ideas, and this admission renders the whole of his discussion on the growth of the act of giving vent to emotions in sound entirely beside the mark. Of what use to inform us that some monkeys can make as many as six distinct sounds, and dogs four or five, when he admits that such sounds are not articulate language at all, but the mere expression of passing emotions. To follow Mr. Darwin in his reasoning, we find that the essential element in speech is not the mere expression of a single emotion or idea, but the expression of the *relation* one idea bears to another.

It is not the bare utterance of the noun alone, as

he would acknowledge, that constitutes the true characteristic of speech, but the verb accompanying; they form together a sentence, or, in other words, "articulate language." On this ground the talk of parrots cannot be called "language," for no one would argue, that when parrots talk, it is connected with any intelligible idea in the brain, but a mere imitation of sounds they have heard. To reason logically from Mr. Darwin's own definition of articulate language, would totally exclude the cries and noises made by animals from being understood, in the least degree, as speech. Without ideas mere words have but little weight, as in the case of the parrot; and, without speech, knowledge is of little value. The union of these in their highest perfection, we find in man, and in man only. In this strong characteristic we see a "fundamental" difference between man and the lower animals. Respecting the *origin* of language, Mr. Darwin tells us, that he "cannot doubt that language owes its origin to the imitation and modification, aided by signs and gestures, of various natural sounds, the voices of other animals, and man's own instinctive cries." And that, probably, our primeval parents, or some early progenitors of man, in those far-off distant ages before the dawn of history, used their voices largely in singing, or to speak with more exactness, in producing "true musical cadences like the gibbon-apes at the present day." Then the imitation of musical sounds might have given rise to words expressive of various

complex emotions. "As monkeys understand much that is said to them by man, and as in a state of nature they utter signal cries of danger to their fellows, it does not appear altogether incredible, that some unusually wise ape-like animal should have thought of imitating the growl of a beast of prey, so as to indicate to his fellow-monkeys the nature of the expected danger. And this," Mr. Darwin concludes, "would have been a first step in the formation of a language." Then, "as the voice was used more and more in growling, the vocal organs would have become strengthened and perfected through the principle of the inherited effects of use, and this would have re-acted on the power of speech." Then, remembering the importance to be attached to mental development to aid in the perfection of speech, Mr. Darwin suggests that "the mental powers in some early progenitor of man must have been more highly developed than in any existing ape before even the most imperfect form of speech could have come into use." And thus he goes on through a vast labyrinth of guesses, building his great theory upon suppositions, suggestions, and probabilities. One very strong objection we have to accepting Mr. Darwin's idea of the origin of language, is that it is so diametrically opposed to our knowledge and experience. For instance, let any naturalist take the most intelligent ape, baboon, chimpanzee, orang, gorilla, mandrill, or monkey that can be found, and attempt to train him to use articulate

language, and the experiment, like others of a similar kind, will utterly fail. If, then, with all the advantages of training by a highly developed man, this should fail, it seems extremely improbable that a less organised animal, without the advantages of training and example, should rise unaided to the top of the scale of animated existences. To put faith in such vast improbabilities requires a large amount of credence.

CHAPTER VIII.

THE MORAL SENSE, OR CONSCIENCE.

IN still further comparing the mental powers of man and the brute creation, Mr. Darwin tells us that he "fully subscribes to the judgment of those writers who maintain, that of all the differences between man and the lower animals, the moral sense or conscience is by far the most important." But as the moral sense can only exist in connection with human reason, and Mr. Darwin has failed entirely to show that man's mental powers are similar to that of the lower animals, it seems almost superfluous to go on discussing speculations on the development of conscience. Still, in justice to Mr. Darwin, we will state his leading propositions, and hear what can be said in their support. After endorsing the words of Mackintosh that the moral sense "has a rightful supremacy over every other principle of human action," he adds that it may all be summed up in one short but imperious word *ought*, so full of high significance. We then have Mr. Darwin's cardinal proposition on this subject. He thinks that it is highly probable "that any animal what-

ever, endowed with well-marked social instincts, would inevitably acquire a moral sense or conscience as soon as its intellectual powers had become as well developed, or nearly as well developed, as in man." For "the social instincts would lead an animal to take pleasure in the society of its fellows, and to feel a certain amount of sympathy with them." Then, "as soon as the mental faculties had become highly developed, images of all past actions and motives would be incessantly passing through the brain of each individual, and that feeling of dissatisfaction which invariably results from any unsatisfied instinct, would arise." "After the power of language had been acquired, and the wishes of the members of the same community could be distinctly expressed, the common opinion how each member ought to act for the public good, would naturally become, to a large extent, the guide to action."

Added to these, "*habit* in the individual would ultimately play a very important part in guiding the conduct of each member; for the social instincts and impulses, like all other instincts, would be greatly strengthened by habit." Thus it is clear, from these propositions, that Mr. Darwin accounts for the moral sense or conscience by the simple process of animals living together and having their minds educated or developed. Therefore "any animals whatever" that might herd together in social harmony would soon acquire a *conscience*, providing at the same time their mental powers

could be sufficiently expanded. It is somewhat surprising that, with all the social instincts that monkeys possess, not to mention the chimpanzee and the ape, that, no tribe of wild animals should ever have acquired that which above all other things distinguishes man from the brute. If the propositions we have quoted are intended as an exposition of the development of the moral sense in man, the essential peculiarity of that sentiment is left wholly unexplained. What should have been explained is not the sense of dissatisfaction arising when the social instinct has been disregarded, but the dissatisfaction which is wholly different from that which arises from the disappointment of other instincts. The feeling that we have wilfully done wrong is totally different from the feeling that we have fallen into an error, however grievous. That which distinguishes conscience from all other faculties, is its high authority. Conscience sits as a judge, and, without reasoning, determines what is right and wrong. But Mr. Darwin's exposition of conscience is that the social instinct may be developed into feelings of doing that which is *desirable*, and that this moral instinct works mainly by the threat of *dissatisfaction*, aided by habit, experience, and inherited tendencies.

But if conscience be merely an instinct educated into the feeling of doing what is desirable for the good of the community, why does he quote with admiration Kant's words: "Duty! wondrous thought, that workest neither by fond insinuation,

flattery, nor by any threat, but merely by holding up thy naked law in the soul, and so extorting for thyself always reverence, if not always obedience; before whom all appetites are dumb, however secretly they rebel." But Mr. Darwin has described a moral sense or conscience the very reverse of this noble sentiment. He has described a highly-developed appetite, but not a supreme self-asserting authority. The former is conceivable in animals, of the latter there is not a trace among them :—

> "The conscience, that sole monarchy in man,
> Owing allegiance to no earthly prince;
> Made sacred, made above all human laws,
> Holding of Heaven alone; of most divine
> And indefeasible authority."

Such a view of conscience would hardly be accepted by Mr. Darwin, as it would be extremely difficult to reconcile it with the principle of an educated and developed instinct. Mr. Darwin is candid enough to own that it is not without hesitation that he ventures to differ from so profound a thinker as John Stuart Mill, who, in his work on *Utilitarianism*, expresses his belief that "the moral feelings are *not* innate, but acquired; though they are not for that reason less natural." On this Mr. Darwin remarks that "the *social feelings* are instinctive or innate in the lower animals, and why should they not be so in man?" Why not, indeed, if only to favour the evolution theory!

Even Mr. Bain and other writers on mental and

moral science, express their belief that the moral sense is not inherited but acquired by each individual during his lifetime. This testimony is exceedingly unfortunate for Mr. Darwin, as it cannot, under any circumstances, be reconciled with the innate conscience theory.

CHAPTER IX.

ON RELIGION.

UNSATISFACTORY as Mr. Darwin's treatment of the moral sense has proved, his views on religion are still more to be deplored. A mere casual mention of religion as a civilising influence, or a brief reference to the belief in a Supreme Being and the immortality of the soul, is all that these important subjects receive at the hands of Mr. Darwin. Indeed, we ought not to be surprised at this; for, if man is a mere development from some lower animal, what need has he of a soul at all? "It is the atoms of the brain that think," said the Greek philosopher who first invented the development theory. And if man possesses no soul, why talk of its immortality? And if the universe, with all its wondrous organisms of vegetable and animal life, be the mere result of the operation of law without the guiding hand of a Supreme Being, what need of a God or a heaven? And if the development theory, as set forth in *The Descent of Man*, be true, there is but one logical conclusion to the whole matter—that is, that the Bible is a myth, religious faith merely an

"ennobling" fiction, and all our theology and belief in a Divine Being a splendid delusion. Such we repeat is the inevitable sequence of the doctrine of evolution.

We are aware that Mr. Darwin anticipates that this view will be taken of his theory, and that his conclusions will be deemed "irreligious." Then, by implication, he attributes to his opponents a belief in "blind chance:" one of the very few instances in which Mr. Darwin is wanting in candour to those who do not accept his theory of development. In *The Descent of Man** he says, "The births, both of the species and of the individual, are equally parts of that grand sequence of events, which our minds refuse to accept as the result of *blind chance*. The understanding revolts at such a conclusion." Who are those, we may ask, who believe in "blind chance?" Surely, not the "religious" man, who believes in a stronger sense, perhaps, than even Mr. Darwin, in the presence of an All-wise, Supreme Governor of the universe. It is the "religious" man who best sees and most fully realises that—

> "Not a flower
> But shows some touch, in freckle, streak, or stain,
> Of His unrivalled pencil."
> And "from the broad majestic oak,
> To the green blade that twinkles in the sun,
> Prompts with remembrance of a present God."

But the author of *The Descent of Man* pre-

* Part I., page 33.

dicts that "The time will before long come when it will be thought wonderful, that naturalists, who are well acquainted with the comparative structure and development of man and other mammals, should have believed that each was the work of a separate act of creation." And, if we were inclined to utter a prediction, we should say, in the same strain, "The time will before long come, when it will be thought marvellous that any philosophical naturalist should have believed in the imaginative story of man's evolution from the lowly form of a jelly-fish." But Mr. Darwin is not wanting in apologists for his theory, as may be seen in a recent article in an influential monthly.* This writer, under the signature of A. B., attempts to explain away the great fact that Darwinism is diametrically opposed to revealed religion. Not actively opposed, so much as that it undermines all belief in religion by taking away its foundations. Man is represented as a highly organised monkey or ape, and that again a mere development from a fish. With such a belief, what need of communion with God, and what of all the hopes and fears and the longings of the soul after a future life. And yet this writer, in a spirit of maudlin sensibility, would fain have us believe that the theory of Darwinism will not affect our belief in revelation, and writes an essay "to attempt to show, firstly, that the nobility of our conscience, as a gift from God, and our power of

* *Macmillan's Magazine, May*, 1871. "Darwinism and Religion."

communion with Him, are in no way impugned by this theory." That the conscience is a "gift from God," is an entirely new view of the Darwinian theory, which alike ignores the God of Creation and of Revelation. And yet A. B. tells us "that our hope of immortality stands on precisely the same basis" as before. We turn away from such weak attempts to reconcile what never can be reconciled, and would say with Lord Bacon, "It were better to have no opinion of God at all, than such an opinion as is unworthy of Him; for the one is unbelief, and the other is contumely."

CHAPTER X.

SUMMARY AND CONCLUSION.

AFTER a careful and patient survey of the whole theory of "development," as put forth by Mr. Darwin in his book of *The Descent of Man*, we arrive at but one conclusion—namely, that it is "not proven." We shall now, as briefly as possible, show the steps by which we arrived at this result. In our examination of this great question, we stated, at the outset, what it was that Mr. Darwin was attempting to prove. In the plainest possible language we tried to show that the "development theory" meant that, in the distant ages of the past, an animal like a tadpole grew and increased until it became a fish; then the fish went on developing until it grew into a frog; then the frog, in turn, began *slowly* to increase in size,—not like the ambitious frog in the fable that wanted to make himself all at once as large as the ox he saw grazing in the meadow, and blew and blew till he burst his skin, but slowly; from Mr. Darwin's frog we have developed the backboned animals, such as the kangaroo and the lemur; then the lemur grows into a monkey, and

the monkey into a man. Thus we have given, in brief terms, the pedigree of man, and instantly the questions arise, *where* and *how* and *when* did these great changes take place? "We are naturally led," says Mr. Darwin, "to inquire *where* was the birthplace of man" when he separated from the monkeys, and assumed his present elevated form. There is no doubt but that it was "the Old World," if anywhere; "but not Australia, nor any oceanic island," as that would not harmonise with the theory. Mr. Darwin's opinion is that the most probable place from which we sprung from the monkey tribe was Africa. But he reminds us that "it is useless to speculate on this subject," for a very large ape once lived in Africa which is now extinct; and as great changes have taken place in the geological formations of that continent, and ample time has been given for migrations of animals on a large scale, it will be best to give up the inquiry, and acknowledge that, beyond a *probability*, it cannot be known. It is much to be regretted that we can form but a faint idea of our early birthplace when first we diverged from monkeys. What a deep and lasting interest would have attached to the place, could we but have pointed even to the continent with certainty, and said, "There is the birthplace, the cradle, and the home of man." But, alas! no oracle speaks, and we are left in the dark on this matter, for it is a "scientific" fact that no living species connects man with any ape, baboon, or monkey in any

quarter of the world. With no evidence whatever from living species, let us ask whether geology can supply the missing links. At first view we seem to have some evidence of development, as we mark the successive changes that the surface of the earth has undergone, containing orders and species of animals which are now extinct, and followed by others which, in turn, shared the same fate. From this it appeared not unreasonable to conclude that there had been "progressive development" of animals from each other. But in examining minutely the fossils we find there is no imperfection in their organisation, and no links to connect the various species of even the lowest animals. We are, therefore, not surprised to find Mr. Darwin candidly acknowledging that "the great break in the organic chain, between man and his nearest allies, cannot be bridged over by any extinct or living species." It is evident, therefore, that it would be useless to attempt further to inquire *where* man first severed the tie that bound him to an "old world monkey."

Respecting *how* man became developed from "a hairy animal with a tail and pointed ears," Mr. Darwin accounts for this vast change mainly by *sexual* selection, whilst Mr. Wallace, the co-originator of the theory, thinks that it was owing chiefly to *natural* selection. The greater portion of Mr. Darwin's book is occupied with the courtship of the lower animals, and is highly interesting in itself, but has little bearing on the great ques-

tion at issue. Sexual selection appears to us totally inadequate to account for the great diversities in animal life. Mr. Wallace points out a variety of instances in which this kind of selection, if it had any influence at all, would have produced the very opposite effect. For instance, in reference to colour, Mr. Wallace asks, "How are we to believe that the action of an ever-varying fancy for any slight change of colour could produce and fix the definite colours and markings which actually characterise species. Successive generations of female birds, choosing any little variety of colour that occurred among their suitors, would necessarily lead to a speckled or pie-bald and unstable result, not to the beautifully definite colours and markings we see." Still further, Mr. Wallace attributes many of these variations to natural selection, which would "render sexual selection of colour as unnecessary as it is unsupported by evidence." In short, Mr. Wallace believes that Mr. Darwin "imputes far too much to its operation." And when the principle of sexual selection is applied to man to account for the great varieties of the human race, the arguments seem to rest upon a very insecure foundation.

Mr. Darwin thinks that "the inferiority of women," in bodily strength, in courage, and in perseverance, may be traced to the "law of battle for wives," which still prevails among savages. The struggling and fighting for the most beautiful wives gave the men the bodily strength and mental

superiority they now possess. From such an opinion we heartily dissent, and question the "inferiority" so much spoken of, believing fully in the old doctrine that—

> "For contemplation he, and valour formed;
> For softness she, and sweet attractive grace."

Considerable space is denoted to prove that savages think much of their personal appearance, and that the selection of husbands and wives had great influence in producing the differences of mankind. But among savages the men ornament themselves as much as the women, and, in some tribes, the men are more proud of their personal appearance than the women. From the evidence given, it appears that the men "admire the peculiar features of their own race, and detest any wide departure from it." The effect of this would be to preserve the race true, and certainly not to favour the production of new races or species. The absence of hair on the human body cannot be accounted for on the principle of *natural* selection, because the loss of it is not considered a beneficial variation. But *sexual* selection will account for it in the fact that our earliest female ancestors "selected" for husbands those who had least hair, and so, after a "long period," man became hairless. The example of monkeys and apes is adduced, many of which have bare skin on their faces; and still more reliance is placed upon the New Zealand proverb, "There is no woman for a

hairy man." It is not surprising that a smooth-skinned race, like the New Zealanders, should prefer smooth-skinned partners; and, for the same reason, we should expect to find hairy animals associating with those most like themselves, and not seeking bald animals for husbands. Mr. Darwin's argument amounts to this, that if all the young ladies in creation were to seek out husbands with bald-heads, after a very, very long period, the human race would be bald-headed—a "development" we hope never to witness. Nor can we put any faith either in the theory of natural or sexual selection to account for the loss of hair on the human body. On the other hand, we think that a good coat of glossy hair would have been highly useful and even ornamental, not only to our rude and savage ancestors, who lived "before the dawn of history," but to the men and women of modern times, when clothing is scarce and dear, and the winters cold and severe. We may well ask, then, for what purpose of utility or beauty did our ancestors get rid of their hairy coats? Again, the argument from analogy is totally opposed to Mr. Darwin's theory, for the animals inhabiting the warmest climates still retain their hair, and in the colder climates, he admits that it would not add to their comfort, and consequently to their chance of survival in the struggle for existence. The other points of physical "development" are equally involved in doubt and mystery. How man became erect, and from being quadrumanous was turned

into a biped, is an unsolved problem. Still more so, how he came to lose that useful and ornamental appendage commonly called a tail. We can hardly suppose that this loss occurred in the same way as Mr. Darwin accounts for the loss of "pointed ears" in man, and the "power of erecting them," which occurred through the habit of not exercising them. In our own day, tails would have proved a source of great pleasure and amusement to the juvenile part of mankind; especially with tails as well developed as those of the spider monkey. Boys might have climbed the loftiest trees with perfect security against falling. Athletic games on the trapeze and the high rope would have been safe and legitimate. Skating excursions would hardly have been deemed dangerous with a good prehensile organ. How many noble lives would have been saved whose courage and daring led them to scale the highest peaks of the Alps. By the use of a well developed tail these accidents might wholly have been prevented. From these considerations we cannot account for its loss through natural selection, or any other selection. It is simply "inexplicable." But granting the truth of Mr. Darwin's theory of development, and assuming these vast changes in the physical structure and mental powers of man to have taken place at some time, however distant, we are tempted to ask, *When* did these transformations take place? So far back in these "pre-historic times," that the strongest imagination can hardly realise the extent of time

required to effect the changes. All we know is, that it was certainly "before the dawn of history;" and any attempt to calculate the time, even by hundreds of millions of years, is like "the vain endeavour to grapple with the idea of eternity." Such a thorough avoidance of anything like a *date* for man's development, strongly reminds us of the famous story which Corporal Trim endeavoured to recite to Uncle Toby. "There was a certain King of Bohemia," said Trim, "but in whose reign except *his own*, I am not able to inform your Honour." Toby, however, was very obliging, and wanted to help him out of his difficulty, "'Leave out the date entirely, Trim,' said my Uncle Toby." In very similar language, Mr. Darwin says, "There was a certain monkey—" Of this he seems quite sure, and often reminds us of it. "There was a certain monkey, but in what period or country, save his own, I am not able to say."

As we are left therefore to imaginary periods and unlimited ages, we are compelled to give up the inquiry as to the date or probable period when man emerged from mere animalism into manhood. And if the last step of man's evolution be so difficult to demonstrate—if the mere change of a monkey into a man be so beset with unexplainable difficulties, what shall we say of his descent from a fish?

In reference to the colour of the skin in the various races of mankind, Mr. Darwin remarks,

"that the best kind of evidence that the colour of the skin has been modified through sexual selection is *wanting* in the case of mankind," and then remarks, that "it seems at first sight a monstrous supposition that the jet blackness of the negro has been gained through sexual selection; but this view is supported by various analogies, and we know that negroes admire their own blackness." Mr. Darwin concludes by stating that it is his opinion that the various tints of the skin were acquired by sexual selection, "subsequently to the removal of the hair, which, as before stated, must have occurred at a very early period." Respecting the colour of the skin, we have but one remark to make—that to suppose all the varieties of colour originated through sexual selection is "a monstrous supposition," and is unsupported by what Mr. Darwin himself calls "the best kind of evidence." In fact, we have no more faith in this solution of the difficulty than we have in the theory held by the black races themselves respecting the origin of the white race. They believe that originally *all men* were jet black, and that one of their race having committed a dreadful crime, was found out, and being overwhelmed with shame he *turned pale*, and never regained his jet black colour, but transmitted his paleness to all his descendants. Hence the white race.

Again, assuming that Mr. Darwin's theory is true, we might reasonably expect that, at least in some instances, evidence would be forthcoming to

give it an air of plausibility. And though geology bears no record in its fossils of the existence, during thousands of past centuries, of any connecting links in the extinct species, we might have hoped to find some slight support for this theory during the history of the last four thousand years. The testimony of Sir John Lubbock on this point is remarkable.* He says: "It must be admitted that the principal varieties of mankind are of great antiquity. We find on the earliest Egyptian monuments, some of which are certainly as ancient as 2,400 B.C., two great distinct types, the Arab on the east and west of Egypt, the Negro on the south, and the Egyptian type occupying a middle place between the two. The representations of the monuments, although conventional, are so extremely characteristic that it is quite impossible to mistake them. These distinct types still predominate in Egypt and the neighbouring countries." "Thus, then," says Sir John, quoting Mr. Poole, "in this immense interval, we do not find the least change in the Negro or the Arab; and even the type which seems to be intermediate between them, is virtually as unaltered. Those who consider that length of time can change a type of man, will do well to consider the fact that three thousand years give no ratio on which a calculation could be founded."

Thus, after the lapse of three or four thousand years, man remains as distinctly man as he was

* *Pre-historic Times*, 2nd Edit., page 575.

before, and in the same manner we find that animals preserve exactly the same characteristics they had forty centuries ago. The animals we read of in Æsop's Fables, and those worshipped in Egypt, are precisely like what we meet at the present day; and had there been that change going on which Mr. Darwin advocates, we might reasonably have expected to have found some recorded instances of mutation of species even in the space of four thousand years. We go a step further than this, for we doubt very much whether the faculties of man have in the least degree improved during the last six thousand years. Of course we do not refer to the influence of the spread of education and the diffusion of knowledge, which have greatly aided in the development of the intellectual powers *generally*, but the influence on the individual has actually been to weaken his natural vigour of body and mind, and therefore the teaching of history is totally opposed to the "development" theory. Individual men in ancient times advanced to the highest perfection ever attained by the human race. Where can we find poetry to surpass in grandeur and sublimity that of Homer, or religious sentiment more deep and sublime than that found in the Book of Genesis and the Psalms of David. No art is more perfect than that of the Greeks; and no specimens of the human form, seen at this day, are more beautiful than the models which the sculptors of Greece have preserved for us. And

none in modern times have surpassed the matchless oratory of Demosthenes. The evidence, therefore, from history would support a theory the very reverse of Mr. Darwin's. And of gradual development, we can find neither proof nor plausibility from the study of history.

Sir John Herschel,* in discussing the "Formatian and Verification of Theories," lays down the absolute rule that a sound theory should "truly represent *all* the facts and include *all* the laws, to which observation and induction lead."

In testing Mr. Darwin's theory of "evolution" by this canon, we not only fail in finding conclusive proofs in its favour, but we know not absolutely where to begin—where to find either fact, argument, or analogy, which would lead us to place reliance on this vast and astounding theory of the *Descent of Man*. Indeed, this feeling of insufficiency of proof is evident throughout the whole book, as may be seen in such phrases as the following. When Mr. Darwin should have arrived at a positive conclusion, he merely says, "finally, it may not be a *logical conclusion*, but to my *imagination* it is far more satisfactory," &c. In the same doubtful language he speaks of the geographical distribution of animals, and goes so far as to say that "we are often wholly unable even to *conjecture* how this could have been effected." Again, Mr. Darwin remarks, that he has "thus far been baffled in all his attempts to account for the

* *Discourse on the Study of Natural History*, page 204.

differences between the races of man," but hopes to account for some of the differences through sexual selection. With such expressions we have no word of complaint, but we do regret the use of such language as this: that "He who is not content to look, like a savage, at the phenomena of nature as disconnected, cannot any longer believe that man is the work of a separate act of creation," though, at the same time, Mr. Darwin is well aware, as he himself states,* that "the most eminent palæontologists—namely, Cuvier, Agassiz, Barraude, Pictet, Falconer, E. Forbes, &c., and all our greatest geologists, as Lyell, Murchison, Sedgwick, &c.—have unanimously, often vehemently, maintained the immutability of species." Thus some of the greatest names in science are opposed to the very groundwork on which Mr. Darwin builds his theory of development.

Having in the earlier part of this book examined in detail the arguments on the physical analogies between man and the lower animals, and found them wanting, it would be needless here to recapitulate them; and in reference to the mental faculties of man and the brute creation, in which Mr. Darwin attempts to explain away the "enormous" difference, his failure is utter and complete. No less so is his effort to evolve "conscience" out of the social instincts of animals, or to find the belief in God and acts of religious worship in the love of a dog for its master. On Mr. Darwin's

* *Origin of Species*, 3rd Edit., page 336.

theory, the origin of language is absolutely inexplicable, unless with him we can believe that "imitating the growl of a wild beast" was the first step by which man acquired the use of language. With all those vast difficulties unexplained, how can we accept such a theory? Surely some greater power than selection would be required to change a hairy, speechless animal, with four hands, a tail, and pointed ears, into a smooth-skinned, erect, large-brained, fire-using, tool-making animal, endowed with speech and reason. Although infinite ages be allowed for the process of development, we have no grounds for believing that it would ever take place, for we are not aware of any innate tendency, either in man or animals, towards continued development in body and mind. Before the appearance of Mr. Darwin's book on *The Origin of Species*, we looked complacently on the old doctrines of epicurean philosophy, which taught that the "fortuitous concurrence of atoms" was the cause of all organised beings. And when Lamarck, the French naturalist, presented the same theory in a modified form to the world, there were but few scientific men who looked upon it other than as a fanciful mode of explaining real difficulties. But now that this old theory has come forth in a new English dress, with all the attractions that Mr. Darwin has been able to throw around it, will doubtless gain for it many more adherents than it has hitherto had. And it is mainly to the fact that this theory has been intro-

duced by a man of such high scientific attainments and eminent genius as Charles Darwin, that it has received such wide consideration and attention. Nevertheless, after most carefully weighing the evidence adduced, and putting aside all fancies and feelings, we have arrived at the inevitable conclusion that, with all his faults and failings,—Man still bears in his bodily frame and mental power the indelible stamp of his lofty origin.

"Our little systems have their day;
They have their day, and cease to be,
They are but broken lights of Thee;
And Thou, O Lord, art more than they.

"We have but faith, we cannot know,
For knowledge is of things we see.

* * * * *

"Let knowledge grow from more to more,
But more of reverence in us dwell,
That mind and soul according well,
May make one music as before,

"But vaster." TENNYSON.

THE END.