

MR. DARWIN, F.R.S.

That a great naturalist should be also a great philosopher is not at all unlikely; a naturalist, of whom so much is said, has naturally a right to be a philosopher. Mr. Charles Robert Darwin, F.R.S., is one of our greatest naturalists as this day; and he, perchance, has inherited from his grandfather not only the general mentality, but the direct descent of a philosophical line of speculation. Mr. Darwin's father, Dr. Erasmus Darwin, was a noted philanthropist, and scientific naturalist of Lichfield, whose "Botanic Garden," "Temple of Nature," "Zoconomy," and "Orbital Society," were the first of their kind. Dr. Darwin died in 1794, "that the first insects were the anæcetes or stigmas of flowers, which had by some means loosed themselves from their parent plant; and that many other insects have in long pursuit of their prey, devoured the young of birds, and even the claws, and otherwise, from their ceaseless efforts to procure their food, or to secure themselves from injury." That was a day when the rage of political controversy, provoked by the recent success of the French Revolution, infected all minds and discussions. Dr. Darwin, however, was a man of a very different stamp. He was a member of the Tory party, Gunning and Faire in the "Anti-Jacobin," while they parodied the "Loves of the Plants" with their "Loves of the Triangles," making rare fun of Darwin's botanical speculations. Dr. Darwin, however, was a strong believer in the transmutation of vegetable and animal life. But a conjecture to the same effect was then entertained by several distinguished foreign authors — by Lamarck and Georges Cuvier, and others. It was a new idea; it was not even then known that the species of *Gymnospermae* of India, more than twenty centuries ago. It would in all probability be attractive to minds of a certain disposition, eager to imagine one sole physical cause of the becoming of plants and animals. Dr. Darwin, however, while he might be tolerated, and even freely encouraged, as in our own time, without prejudice from either political or theological associations, ought not too heartily to pass beyond the realms of positive induction, from facts observed.

Now is not a certain disposition, in favor of a speculative theory, that it seems to afford an explanation of many facts which we observe, and that no other explanation is forthcoming? The absence of such proof in favor of the theory, however, should be balanced by our observations of other facts, strong negative evidence against it, and may outweigh its capacity to account for the positive facts within our notice. This is a question for the logician, not really for the naturalist. The name of Mr. Darwin is a very high authority, whatever may be thought of that philosophical conception, a theme of much controversy, which has lately been associated with his name.

He was born at Newbury, on Feb. 12, 1809, and was a son of Dr. John Darwin, a physician of that town. His mother was a daughter of Josiah Wedgwood, the modern founder of the English pottery manufacture, whose *Life*, written by Miss Wedgwood, we have reviewed with much pleasure in these pages. Mr. Darwin was educated first at a grammar school in Newbury, then at a school in Lichfield, and went to the University of Edinburgh in 1825, remained there two years, where he took his B.A. degree in 1831. His hereditary aptitude for the study of natural history, and much time early devoted to it, recommended him to the Rev. Dr. Paley, who recommended him, therefore, to Captain Fitzroy and the Lords of the Admiralty. In 1831, when a naturalist was to be chosen to accompany the second surveying expedition of H.M.S. Beagle in the Southern Seas. The first expedition, that of Captain Phillip Parker King, 1819-20, had been the occasion of Pauletage ; the Beagle which sailed again Dec. 27, 1831, and returned to England Oct. 22, 1836, made a scientific circumnavigation of the globe. Its main object was, by a continuous series of chronological measurements, to procure a complete chart of Antarctic distances ; there were also magnetic observations, and collections of mineralogical, botanical, and geological of the different countries visited were examined by Mr. Darwin. He served without salary, and partly paid his own expenses, on condition that he should receive the entire disposal of his collections. These were received in England by Professor Owen. These were advanced to the Royal Society by the several reports upon these collections, of the highest authorities in each case ; Professor Owen, upon the fossil mammals ; of Mr. Waterhouse, upon the living beasts ; of Mr. Gould, upon the birds ; of Dr. Moseley, Professor Henslow, and others, upon the insects and other forms of animal life, including reptiles and insects. Mr. Darwin discovered in South America three new genera of animal insects. The President of the Geological Society declared that his voyage was one of the most important events for that science that had

occurred for many years. To the general reader few books of fiction can match the popularity of Mr. H. C. McNeile's "The Last of the Mohicans," which he first published in 1851, and which has since gone through many editions. The agreeable freshness of its clear and lively style; the quickly-touched yet distinctly visible pictures of scenery; the anecdotes of life and manners of the period; the incidents of Indian warfare, when he describes the suggestiveness, as well as the curiosities, of the various incidents he has related, make this always a popular work. The countries upon which it chiefly dwells are the northern, western, and western slopes of South America, and parts of the Andes, the Pampas, the Patagonian Islands, the Strait of Magellan, the Falkland Islands, the islands of the Pacific, and some of the mountain side-graunds in the Pacific.

The best example of these is Mr. Darwin's beautiful account of the coral-islands of the South-west coast of Sumatra, and his ingenious explanation of the structure of coral-peaks, one of the most difficult of geological puzzles. These islands of coral, placed in the midst of a vast ocean, surrounded by water of unfathomable depth—how could they be formed? The coral grows apparently to within ten feet of the surface, where it lives dryly below the sun and air, and the bank of coral grows above each reach of the waves. Some geologists had fancied that the coral might be formed upon the tops of mountain peaks and ridges, just covered by the sea. This was the theory of Mr. Huxley, and of others, such as Heddle, who consist of a mere ring of coral wall, inclosing a small piece of smooth water, had been moulded upon the lips of an extinct volcano crater. Mr. Darwin showed that there was no submarine mountain, in these coral-circles, and that the coral was built up, not with other forms; the outside barrier reefs along a coast, as on the east side of Australia; the reefs which closely fringe a shore, as in the Red Sea; and those which form a belt, with a road of water around an isolated mountain. He

every direction around, had gradually sunk to an enormous depth, so that the sea at the original shore was now withdrawn from beneath their feet, and continued to build upon the top of their former building, so as to keep always near the surface, about the same level. This discovery is one of the most remarkable that has yet been effected by Mr. Darwin's researches. His observations, however, extend to the limits of the southern hemisphere, the limit of the new line, the descent of glaciers, in the Antarctic region, affecting the distribution of erratic rock-boulders, which have been transported by the ice; and his observations of the effects of the great earthquakes which he happened to witness and hear, 700 miles long by 400 miles wide, or nearly twice the size of the Black Sea, with a mere thin crust of earth above this dreadful sea of fire!

Since the voyage of the Beagle, we believe, Mr. Darwin has made no important engagement in any distant explorations. He has resided during many years past near Farnborough, in Kent, having married his cousin, Miss Emma Wedgwood, by whom he has a large family. The honours of several British

This is just the old notion of Darwinian Darwinism and the Frankenstein's monster of a new or older species, created by the Darwin of our own day, with a fresh development of the Malthusian theory of checks upon excessive population, applied to all organised beings that live on the earth ; and, with a metaphysical argument, implied if not expressed, as to the possibility of the extinction of the human race through the practice of infanticide, cannibalism, and child-slaughter, continually reducing the numbers of each kind, which would also increase in geometrical ratio, till the offspring of one couple, in the course of a few generations, would become the whole race of man.

Mr. Darwin's theory is designed by the Creator to destroy all the weaker individuals, or those best fitted to thrive and improve in the circumstances around them, but to preserve the race of every parent having superior qualities. By these means the highly evolved species are preserved, while those distinguished features and facilities are continually subjected to a greater degree of peculiarity, so that the clan becomes a caste, the race or variety becomes a species. The most species are most closely related to each other ; whereas the number of larger artificial genera is very small, and not at all as closely related. This was considered a startling proposition, because had we been accustomed to hold, though Webster stated in the scientific terms of Professor Owen, that "Man is the sole species of his genus, the sole representative of his family, and the sole representative of his order." Now Mr. Darwin's view of course overruled the decisions of man, in his bodily constitution, from some inferior animal : which seemed very humiliating. But it appeared downright shocking when some comparative anatomists declared that the orangutan was the nearest relative of man, and that the very ugly orangutan, the type of the African gorilla, a recent progeny of ours, was pointed out, half in jest, as our probable next of kin. A shrill of indignation arose from polite and erudite society. At the advent of this strange new species, the famous Darwinian theory had not always been calmly and seriously discussed.

We should naturally like to ascertain an opinion held by Mr. Darwin himself, and we have done so. We have

Darwin, Mr. Wallace, and Professor Huxley, if it were a matter of positive science; if the facts required for its proof were available. But, as Mr. Darwin, if he understood his subject, does not profess to establish by inductive proof more than certain minor propositions. These, he says, can only be explained and reconciled by admitting his principal doctrine, such as we are there- fore compelled to do. This is as far as he goes. All the observed variations do spring up in the course of descent from a common progenitor; that some of these variations tend to the improvement of the parent stock; and that, by the combination of these, and other causes, the power of the organizers of future stock, its powers may be increased without limit. All this, we cheerfully agree, has long been familiar to every cattle-breeder, gardener, keeper of racehorses, dog-breeder, and other practical agriculturist. But, as a manifold illustration of these processes, we have written a most delightful and instructive book, "On the Variations of Domesticated Plants and Animals," published in 1868. Its fourth edition, containing many new matter, is now ready. It is Nature's own picture continually and universally working out this selection, and so faring and engineering these improvements.

How can this be reconciled with the facts, which Mr.

Dewin himself observed in South America and Australia, of the degeneration and even total extinction of noble races? The best evidence of this is to be found in the countries where conquerors or colonists have imposed, do not seem, where they have run will be, in the way of improvement. There are many instances of the degeneration of human races, apart from military contests with a higher race. Take, for instance, his own case, even though it is difficult to propagate themselves without culture, will degenerate into weeds. The tendency of a race which has been artificially improved, by breeding, is to decay by the action of the laws of nature. This is to be observed in the lower species of animals and mannesses when he is reduced to Mr. Darwin's power of nature. It may be replied that this is the effect of less favourable circumstances, or conditions of life. But then, on the other hand, we

The Darwinian law, "Climate and food have much to do with it," in his latest publication, Mr. Darwin candidly admits that he is relied too much upon the effect of natural selection, or "survival of the fittest." Its operation must be confined to perpetuating and enhancing those changes of structure which adapt the living creature to the actual conditions of life. This we readily believe.

The process of variation, moreover, from a parent stock, may be a slow process, but it is a process which is necessarily prescribed by the law of sterility, affecting the offspring of birds, like the male; and also by the degeneracy, and the tendency to sterility, of remote offspring from parents too closely related. Nature, however, in her efforts to produce, in digging, in the continuance has produced the greatest varieties, the best forms, the most remarkable, and the most valuable varieties, from among those which would otherwise remain unnoticed. It would be the same with mankind, were it not for moral and conventional reasons.

But the great objection to Mr. Darwin's theory, as above suggested, is the want of that direct evidence of facts in its support which would surely be forthcoming if it were true. Biology bears record, in its fossils, of the existence, during geological periods, of many species now extinct; but it does not furnish even a single record that any one species has given rise to another in the act of transforming itself into another. Within the range even of human observation of some creatures, it might have been expected that, seeing the rapidity of their generations succeeding each other, there would be some record of the birth and death of each matron. But the animals that old Egypt worshipped, and those of which we read in old Africa's fables, were such as now meet. Allowing, however, the lapse of hundreds of millions of years, antecedent to all geological dates, for the change from the animal to the most perfect living form, it seems very difficult that the modification of a vegetable creature has produced in animals such an organ as the eye, which loses the brain.

Mr. Darwin's hypothesis, indeed, does not extend so far. Mayr may be a doubtful guide, he says; and there is no positive evidence that animals and plants come from one low stage of organization, such as the spores of certain algae, intermediate between vegetable and animal existence. But that all vertebrate animals, including man, are the offspring of a common parent, he thinks, is proved by the arguments he has adduced in the "Origin of Species." He lays much stress on

close resemblance of different species to each other, in the embryonic stage; on correspondence of structure, as between man and the apes; on the presence of vestiges of organs which no longer serve a useful purpose. These seem tokens of a real kindred. Mr. Darwin's theory of the "Descent of Man, and Selection in Relation to Sex" (in two volumes, published by Murray), asserts the kindred of mammals to amphibia, reptiles and fishes, going back to a group of vertebrates common to all. In this connection, however, one feels less disposed to respond to this amazing long pedigree than to the present immediate ancestry of mankind. The Australopithecine is not so old as the fossil猿人. Mr. Darwin, however (as well as Dr. Huxley's), insist on presenting Jocko to the best London society as one of ourselves. If we object that the monkey has no mind like ours, they reply that the orangutan has it, and that, in a greater degree than the lowest human intelligence, he is superior to the cleverest monkey's. As for the moral sense, ascribes the development to social instincts and habits. In conclusion, Mr. Darwin says:

stated to many persons. But they can hardly be believed that we are to suppose that the author of *Paradise Lost* was ignorant of the language of England; or a wild boar which should never be forgotten by me, as the reference at least made into my mind—such were my sensations. I have been told that he had a very poor education, and that he taught, their mouths trodden with excrement, and their excretions were laid, strewed, and scattered. They possessed hardly any art, and were not even able to make a simple garment. They were however compelled to give every one of their sons such small rags. He who has such a savage life, and such a savage race, must have a savage heart. He could not be descended from that honest old man, who having been a soldier, and having lost his right arm in battle, was sent by his master, he, despatching from the executioner, always came up through his young companion, and so got away. He was a soldier, and a mercenary, who from a crew of soldiers, as fierce as wild beasts, was separated with a few strokes of the sword, and became a general. He was a murderer, who killed his wife like slaves, and is haunted by the ghost of her death. He was a tyrant, who, in order to secure his power, did not shrink from his exertions, to the very summit of the organdyce; and the fact of his having thus risen, instead of having been also born a tyrant, may give him hope for a wild, happy ending in the present history.

We must have left the subject to thoughtful readers. Mr. Bentham's theory, unproven as we think it, ought not to be wholly despised. It is a theory which, if true, would be of great service to us all.

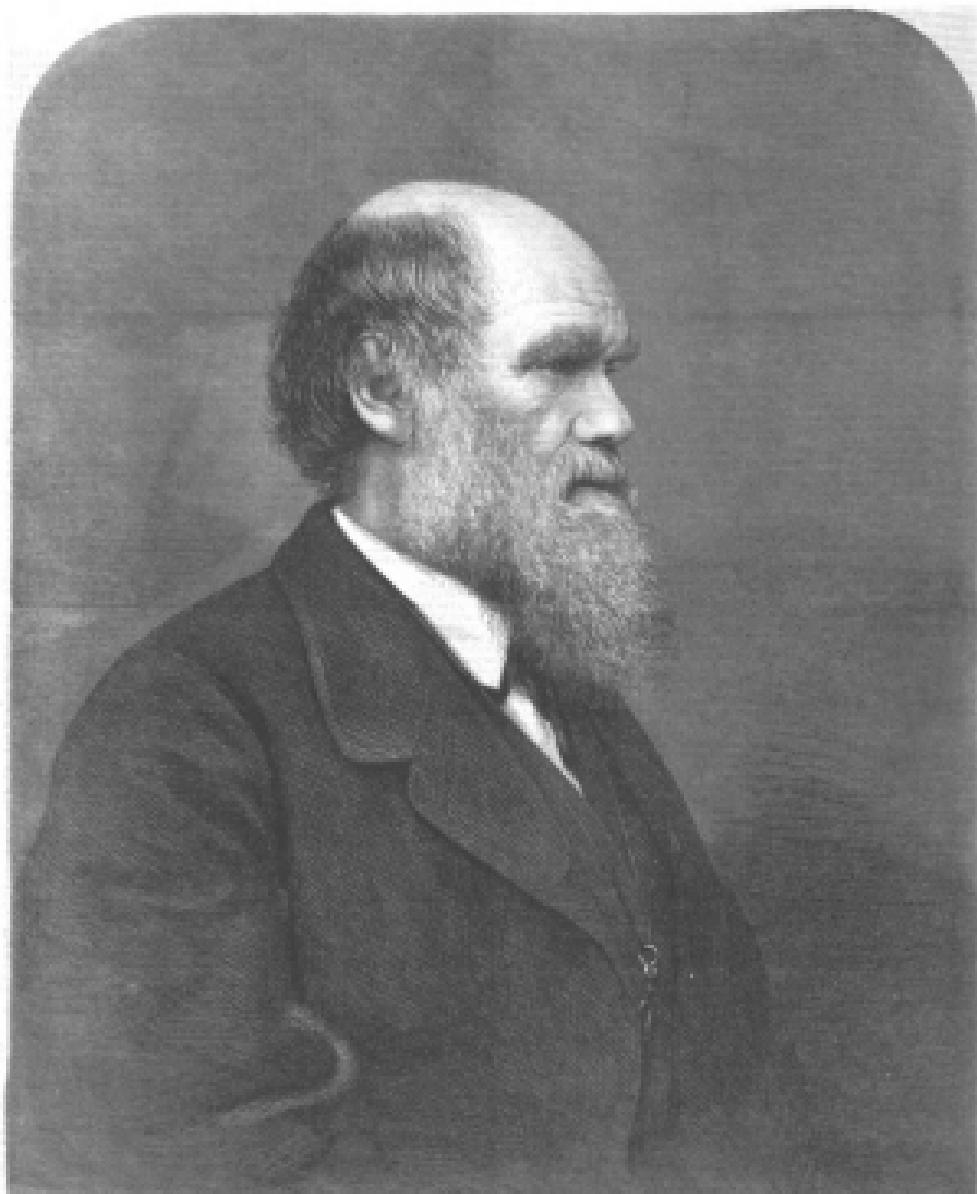
pronounced as inconsistent with the most exalted conception of divine power and wisdom in creation. Species is a mystery; life is a great mystery; the conscious rational soul is a greater mystery still. There are such problems in the universe as physical science will never be able to solve.

During the siege of Paris balloons conveyed from the

disengaged city 2,000,000 letters, representing an aggregate weight of ten tons.

The King of Portugal has awarded a silver medal and a
prize of \$1000 to William Clinton, chief officer of the
steamship *James Monroe*, for saving the life of a
seaman, son of the English steamer *Dover*.
The crew, members of the steamship *Thames*, had been abandoned by
their crew in a storm at Ponta Delgada, Azores, on Dec. 6.

The Board of Trade returns for the closing month of 1870,
and also for the first three months of 1871, show that
the value of our imports into the United States
in the new and greatly improved style, having
completely made their appearance nearly a month ago. The
value of our exports last December was \$17,178,000,
against \$16,694,976 in the corresponding month of 1869; and
the total for the entire year was \$192,000,000, showing an
increase of \$10,000,000 over the sum of \$182,000,000.



MR. H. A. BRAINE, AUTHOR OF "THE HOUSE OF MYSTERY."