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The Index

Accepts every result of science and sound learning, without seeking to harmonize it with the Bible. It recognizes no authority but that of reason and right. It believes in Truth, Freedom, Progress, Equal Rights, and Brotherly Love. The transition from Christianity to Free Religion, through which the civilized world is now passing, but which it very little understands, is even more momentous in itself and in its consequences than the great transition of the Roman Empire from Paganism to Christianity. THE INDEX aims to make the character of this vast change intelligible in at least its leading features, and offers an opportunity for discussions on this subject which find no fitting place in other papers.

N. B. No contributor to THE INDEX, editorial or otherwise, is responsible for anything published in its columns except for his or her own individual contributions. Editorial contributions will in every case be distinguished by the name or initials of the writer.

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The Ascent of Man :

OR THE EVOLUTION THEORY AS APPLIED TO THE HUMAN SPECIES.

A LECTURE BEFORE THE SOCIETY OF NATURAL SCIENCES, TOLEDO, DEC. 21, 1871, AND THE RADICAL CLUB, BOSTON, FEB. 12, 1872.

BY FRANCIS E. ABBOT.

LADIES AND GENTLEMEN :—

From a scientific point of view, the most important book given to the American public within the year 1871 has been Mr. Darwin's work in two volumes on the "Descent of Man." It is the companion and completion of his "Origin of Species," which first appeared in 1859 and has been justly designated as "an epoch-making work." It not only directly applies to the human race the same general theory concerning the origin of species which was advanced in the earlier volume, but it also adds to this theory itself an elaborate exposition of the principle of Sexual Selection,—a principle which had been briefly stated in the former work, but by no means adequately developed. Taken in connection with the author's two volumes on "Animals and Plants under Domestication," in which the phenomena of inheritance are accounted for by the hypothesis of Pangenesis, the public are now in possession of five volumes by Mr. Darwin on the latest and unquestionably ablest form which the "Development Theory" has yet assumed. Although the distinguished author will undoubtedly make new additions to his theory if his life continues (and the scientific world never had greater cause to desire longevity for any of its members), it can hardly be expected that these additions will be more than simple outworks to a fortress that appears to be already impregnable. No one at all acquainted with the history of scientific discoveries can doubt, it is true, that the Development Theory will undergo future changes in some respects; but that its great leading principles have been determined and finally established by Mr. Darwin is to-day the conviction of the great majority of the ablest scientific men. The high significance, therefore, of his most recent work lies in the fact that it directly includes the human race under the operation of biological laws which are seen to be operative throughout the rest of the animated world,—thus effectually and permanently breaking down the barriers of ignorance, prejudice, and pride, by which man has hitherto ungratefully sought to keep at a distance the great Mother-Nature whose child he is. He will henceforth be

ashamed to do such dishonor to her who bore him.

In entitling his book the "Descent of Man," Mr. Darwin took the word *descent* in its purely genealogical sense, and intended to express by it the main thesis he was to advocate; namely, that Man is the *descendant* of earlier and lower species of organized beings, and not, as commonly claimed, a species miraculously created without any earthly parentage. In other words, Man has descended lineally from non-human ancestors, and has acquired his present pre-eminence in the animal kingdom by a long series of slow and gradual changes, wrought in the plastic organization of earlier forms. For the expression of this fundamental idea, no more appropriate title could have been selected. But the moment I first saw the words, it occurred to me that for a book designed for popular reading the title "Ascent of Man" would have been even more appropriate. Considering that a common, though very stupid, objection to the Development Theory is that it "degrades" Man to make him the "descendant" of lower species, I thought that the title chosen might possibly suggest to some minds the idea of "degradation," of "descent" from a higher to a lower place in the scale of being, and thus arouse disagreeable associations that might perhaps tend to increase prejudice or intensify the popular repugnance to embrace a theory not in harmony with popular misconceptions. Whether this has been the case, I do not know. But since it is the very essence of the Development Theory that under changing conditions all species either gradually improve or else gradually perish, and since it teaches that Man has slowly climbed from a lower to a higher place in Nature, I have preferred for this lecture the title "Ascent of Man," as better expressing the real spirit of the Darwinian doctrine and the real influence it must exert on the future of science.

To enter into the details of the subject would not only be wearisome but profitless; there is no way to master these details but the way of hard, long-continued and patient work. Even were I competent to attempt it, I could not in an hour give even a glimpse of the vast array of observations, the intricate and perplexing reasonings, the utter labyrinth of facts, inferences, objections, answers, arguments and counter-arguments, errors and corrections, which he must wander through who really means to comprehend the subject in all its bearings. In fact, the Development Theory has created already a vast literature of its own in many languages; and all the leisure I have been able to devote to it for several years past has only shown me how much there is that I should be glad to read. To-night, therefore, I shall only undertake to give a general view of the subject in one or two of its most important aspects, trusting that some of you, at least, may be prompted to test my conclusions by your own independent investigations. I shall not scruple to express my own convictions with entire plainness, though I hope also with entire courtesy towards those who do not share them. Since you have kindly invited me to discuss this subject, I should be wanting in respect both to you and to myself, were I to discuss it otherwise than frankly.

To begin, then, with a proposition which no one will dispute: *The Universe has had a History.* Reaching backwards into the regions of a by-gone eternity, where even the keen eye of speculation can discern nothing save mist and darkness, stretches an interminable series of events—an endless procession of phenomena which constitute what is called the course of Nature. The word history is usually limited to the career of nations; to the rise and fall of kingdoms, empires, and republics; to the doings of men or communities of men. But the few thousand years of human history are as nothing compared with the duration of the Universe we inhabit. It too has had a history, of which the annals of mankind are but an utterly insignificant fraction. Millions and millions of years before any being trod the earth that could be dignified with the name of man,—nay, millions and millions of years before this earth was in a condition to be trod by any living foot,—events transpired, and had been transpiring for periods of limitless duration, which were fit themes for more than mortal historian. But no historian was there, unless the Universe was its own histo-

rian, and wrote the diary of an eternal career in the very facts of Nature as they now exist. No contemporaneous witnesses of these vast events survive. Seeing eye, and hearing ear, and recording hand, were absent. What has been must be learned from what is, or not at all.

Now two attempts have been made by man to recover this lost History of the Universe. Filled with awe at the magnitude and sublimity of the existing monuments of an immeasurable past, and baffled in all endeavors to decipher the hieroglyphics of their inscriptions, human IMAGINATION seized the historian's pen, and wrote down in poetic fervor the great myths of the creation which are extant in the sacred books of all religions. It essayed to see where there was no light; and, grand as were many of its guesses, they were but guesses still. To solve the enigma of Nature's creation, it created for itself the Supernatural. It pictured the inscrutable Power which had reared these majestic monuments of sun, moon, and stars,—of earth, sea, and sky, and the vast armies of organic forms that filled them with life,—as a Being in kindred form, sitting above Nature, and creating it by a word. This picture of a Being in the guise of man, but vaster, moulding alien matter as a man moulds clay, and giving it such forms as pleased him best,—this conception of a God external to Nature and superior to it, looking down upon matter as dead substance into which life could come solely by the inbreathing of his own breath,—has been in all ages the popular object of worship; and in the popular belief every event in Nature has been the fiat of his will. Such is the history of the universe, as guessed and written by human Imagination in the sacred name of Religion.

But since those early dreams of poetic fancy became crystallized into the great historical religions of the world, human REASON has seized anew the historian's pen, and essays to interpret Nature in a worthier way. It finds Nature infinite in space; its duration infinite in time; its Cause infinite, immanent, and omnipresent. "Outside of Nature," or "above Nature," or "superior to Nature,"—these are phrases which are mere empty sound, signifying nothing. Nature is the All. What room is there for more than that—for the Supernatural? All events in Nature take place by purely natural causes, in accordance with purely natural laws. What is commonly called "teleology," that is, the assumption of the direction of natural forces to accomplish the ends of a supernatural or extranatural will, is a remnant of the effete conception that a will exists "outside of" or "above" Nature. Nature is all-sufficient, all-comprehensive, all-sustaining, and self-sustaining. All events in the past and the present and the future are bound together indissolubly by the uniformity of changeless law. Throughout their entire course they have been, so far as human Reason can discover, the steps of an endless process which is an endless evolution of the universe. The unity of Nature working by natural laws and natural causes in the direction of gradual development,—that is the history of the universe as written by human Reason in the name of Science.

These two histories, one supernatural, one natural—one written by Imagination, one by Reason—cannot both be true. If it were not that there is a higher Religion than that which thus contradicts modern Science, no resource would be left for a rational mind but to abjure Religion forever. But this is not the case. Although I cannot now pause to consider this point, I must in justice to myself say at least as much as this—that the God of Science is an infinitely nobler object of worship than the Gods of the world's historical religions.

"God of the granite and the roe!
Soul of the sparrow and the bee!
The mighty tide of being flows
Through countless channels, Lord, from thee.
It leaps to life in grass and flowers,
Through every grade of being runs,
While from creation's radiant towers
Its glory flames in stars and suns."

There are thus two widely unlike ways of looking at the Universe and of interpreting its history—the one natural, the other supernatural. All the great battles between Science and what is called Religion have been, are, and will be fought in the interest of these two conflicting views of Nature. In every such battle Science has always won and will always win: her triumph is only a question of time. But even in science itself the influence

of the supernatural view has made itself felt, and still survives in the obscurer field of investigation. In fact, the progress of science can be measured by the degree of thoroughness with which the natural has superseded the supernatural view in the opinions of scientific men. So fixed a rule has this become that even the conservatives of science more or less plainly admit it; as, for instance, the Duke of Argyll, one of the ablest opponents of the Darwinian doctrine, who says: "It is the Natural which has been casting out the Supernatural—the idea of Natural Law, the universal reign of a fixed Order of things." [Ejgen of Law, p. 3.]

Looked at in a large way, the whole theory of Mr. Darwin concerning the origin of species, and the still more comprehensive theory of a gradual evolution of the universe (of which Mr. Darwin's theory is only a part) are attempts to "cast out the Supernatural" from those regions of science in which it is still lingering, like a ghost surprised by the first faint rays of dawn. In the apt language of Fritz Müller: "As in Christian lands there is a catechism morality which everybody quotes, but nobody feels himself bound to follow or expects to see followed by others, so also zoology has her dogmas, which are just as universally acknowledged as they are practically denied." With quiet humor Dr. Hooker remarks somewhere that naturalists who believe new species to be miraculously created always believe this creation to take place in some region remote from human observation. All postulates of supernatural intervention in the order of Nature are an embarrassment to free investigation of natural causes, since they are a denial of natural causes; they are dead dogmas of the past, the putrescent and unburied superstitions of science, which, as a mere matter of sanitary protection of the human mind, should be interred with as much haste as is consistent with decency. Let us, then, distinctly recognize the fact that the largest and profoundest importance of Mr. Darwin's theory must be found in its substitution of natural causes for supernatural volitions, in the explanation of the origin of species. It lays the dogma of the origin of species by miraculous creation in the "tomb of the Capulets" by the side of similar extinct superstitions, shuts the door, locks it, and then flings away the key. The demonstration that man, like every other species of living forms, is the descendant of still earlier species, cuts off the last refuge of the supernatural idea in the region of biology; and henceforth the universality of natural causation in the production of new species will be regarded as one of the commonest truths of science.

Let me say here that it is enough to make one somewhat impatient to observe the air of judicial doubt with which many English and American men of science affect to receive Mr. Darwin's theory "provisionally." This affectation of caution is an act of deference to popular prejudice which verges on sycophancy. No man, scientific or otherwise, who is thoroughly imbued with the idea of the universality of natural causation can hesitate for one moment to reject absolutely the theory of creation of new species by supernatural volition. No more can he hesitate to accept absolutely the main thesis of Mr. Darwin's theory, that the origin of new species must be accounted for by natural causes alone. And no more can he hesitate to accept absolutely the leading principles of this theory, as revealing at least some of these natural causes. Mr. Darwin himself does not claim to have discovered all of them. Especially he confesses his ignorance of the causes of "spontaneous variations" in organic forms; and he has only an avowedly "provisional hypothesis" to offer in explanation of the fact of transmission of these forms by inheritance. But the great features of his theory are not speculations, but facts—not hypotheses, but discoveries; and it is somewhat ludicrous to a logical mind to notice the gravity with which some modern wiseacres shake their heads and oracularly pronounce sentence: "There is much to be said on both sides of the question!" So there is, if you concede to mere imagination and superstition and ignorance the same right to speak on it that you accord to reason and scientific knowledge. Otherwise not. That the Darwinian theory is the complete explanation of the origin of species, nobody claims; nor do I believe this. But that the theory is true so far as it goes, I venture to affirm that no man of ordinary intelligence and education who fairly examines it can possibly deny. The coyness and timidity with which so many American and English savans have been wont to approach the subject does no honor to their insight or their courage, and contrasts very unfavorably with the reception given to Darwinism in Germany by such men as Prof. Haeckel of Jena, whose *Natürliche Schöpfungsgeschichte* is the best and most systematic work on the subject with which I am acquainted. It needs only sufficient information, strength of intellect, and moral fearlessness, to ensure acceptance of Mr. Darwin's theory in all its essential features. One might as wisely doubt the law of gravitation.

It is plain, on reflection, that the Development Theory of the origin of species, including man, is the only scientific theory on the subject really before us. It is so represented by Prof. Huxley: "There is but one hypothesis regarding the ori-

gin of species of animals in general which has any scientific existence—that propounded by Mr. Darwin." [Man's Place in Nature, p. 125.] The other quasi-scientific theory of special creation is really no theory at all, since it cuts off all inquiry into the origin of species with the bald assertion that they were independently created. How, when, or where, is a question which it does not even pretend to answer. The story of Genesis is seldom appealed to now in scientific circles; and no one who defends the notion of miraculous creation ventures to give any definite description of what he means. I propose, therefore, briefly to sketch the outlines of Mr. Darwin's theory, as the only one in the field; and to state its application to mankind.

First of all, what is a species? Animals and plants, the two great divisions of organic life, are each divided and subdivided into groups, which become smaller and smaller as the process of division goes on. A kingdom is divided into sub-kingdoms; a sub-kingdom into provinces; a province into classes; a class into orders; an order into families; a family into genera; and a genus into species. A species, then, is the smallest of these groups; and it consists of all those individual animals (I pass by the plants now) which are distinguished from all other animals by constantly recurring characteristics, however trivial, and which at the same time, when paired, will produce fertile offspring. The differences, then, between species of animals, are partly structural and partly physiological. Almost every species may be subdivided into varieties which are each distinguished from each other by constant structural peculiarities; but the male of one variety, paired with the female of another variety, will breed fertile offspring, that is, offspring which will reproduce their kind in turn. But if you pair a male of one species with a female of another species, they may have offspring called hybrids, and yet these hybrids cannot reproduce their kind. Mules, for instance, the offspring of the horse and ass, which are distinct species, are sterile; they cannot reproduce their kind. [Huxley, *Origin of Species*, pp. 104–106.]

Let us now take a familiar instance and see what the true question of the origin of species is. You are aware that there is a class of animals commonly called the cat tribe, or, in scientific language, the genus *Felis*. This genus *Felis* comprises several distinct species: for instance, *Felis domestica*, the house-cat; *Felis catus*, the wild-cat; *Felis pardus*, the panther; *Felis onca*, the jaguar; *Felis tigris*, the tiger; *Felis leo*, the lion, and so forth. The tiger and the lion thus belong to the same genus, but to different species; they have common characteristics which mark the genus, and peculiar characteristics which mark the species; and they cannot produce fertile offspring together. The question is, whence did these unlike species come?

The answers to this question, in the nature of things, can be only two.

The first answer is that the tiger and lion have always been just as they are, and were created just as they are by a supernatural act of power, independently of all parents or ancestors: this is the theory of special creation. It maintains the immutability of all species, and the independent origination of each by a special and miraculous exertion of divine power. The mode of this creation it does not venture to state; but it cuts off all further inquiry into the origin of species.

The second answer is that the lion and tiger have not always been what they now are, but have each acquired their specific characters in the course of time by gradual modifications of their structure. They, as well as the other members of the cat-tribe, are divergent lines of offspring from the common ancestors of the whole genus *Felis*. These common ancestors were exactly like neither the tiger nor the lion, but resembled both; and they were themselves the descendants of still earlier species that had gone before. This answer maintains the variability of all species, and the origination of each species by descent with modification from earlier species. If you inquire for the proofs of these assertions, I must refer you to Mr. Darwin and his coadjutors; I am only stating, not proving, the theory. But I must present briefly the leading points of the theory, which are in themselves arguments, and, when taken altogether, very weighty arguments.

All organisms tend to multiply in geometrical ratio. What this means will be made clear by an illustration I borrow from Prof. Huxley [*Origin of Species*, pp. 117–119]. Suppose that the whole surface of the earth (about 51,000,000 square miles) had the same climate and the same soil; that only one organic being, a plant, was in existence; that the plant produced fifty seeds a year; that each one of these seeds produced fifty more each year, and so on; and that each plant thus produced occupied one square foot of ground. In nine years every foot of ground on the earth would be occupied by a plant! That is, the single plant supposed at first would in nine years have stocked the whole available surface of the earth. This illustration shows that organisms tend to multiply with inconceivable rapidity; for less true of all other organisms. It is plain, therefore, that there must be some check to this rapid increase. As a matter of fact, Mr. Darwin

has shown that the number of deaths and births of any species are about equal on the average, and that the number of individuals of any species is nearly stationary.

This result is due to a Struggle for Existence, which must necessarily prevail where a vast number of organisms are every year crowded out of being. Any advantage, however slight, enjoyed by any one of these competing organisms, might turn the scale in its favor, and give it victory over its less favored competitors. Prof. Huxley, for instance, noticed in Florida that all the pigs were black. On inquiry, he was informed that in the Florida woods there grew a root called the Paint Root, which, if eaten by white pigs, had the effect of making their hoofs crack, and they died; while, if eaten by black pigs, no such result followed. This case illustrates the famous principle of Natural Selection, by which the best chance of life is given to organisms in which any favorable variation (in this case the black color) should be developed; and while at the same time a worse chance of life is given to organisms which are thus placed at a disadvantage. It also illustrates the appearance of variations in members of the same species; and as variations tend to be transmitted like other characters to offspring, we see how inheritance, combined with variation, will tend to create a new variety of the species, if the variation is favorable to life, or to prevent its creation, if the variation is unfavorable.

Thus Inheritance, Variation, and Natural Selection are shown to be laws which, operating in a general Struggle for Existence, must necessarily tend to make those organisms survive which are best adapted to their condition. This is what is called the Survival of the Fittest—that is, the victory in the race for life which is won by those organisms which happen to be best adapted by birth or circumstance to enter the lists under favorable auspices. Those organisms which are destitute of the favorable variation will die out by degrees; and those which have it will alone survive. Thus a new variety will become established, which may, by accumulation of such variations, finally appear as a new species. For the conditions of existence (climate, soil, food, and so forth), as geology shows, change in the course of ages; and the change in the conditions of existence, being seconded by a gradual adaptation on the part of organisms, must and does tend gradually to evolve new species out of old ones, without the need of any miraculous creation.

This, in a very condensed form, is the Development Theory as advocated by Mr. Darwin. It accounts for the gradual evolution of new species out of old ones by natural causes now in existence. It thus renders unnecessary any assumption of supernatural volitions to account for it; and whatever is found to be unnecessary soon perishes from science. The question which Mr. Darwin has fairly brought before the general public by his latest work is the question whether man is an exception to the laws which have determined the appearance of all other species, and is to claim an origin which is denied to them; or whether, like all the other species, man must look for ancestors to more ancient and lower forms of being. In a word, what was the origin of man?

This question must be answered from two different points of view—the biological and the historical. His origin must be investigated as a question of biology and as a question of history.

Prof. Huxley, in his *Man's Place in Nature*, declares that "Man is a member of the same order (for which the Linnean term *Primates* ought to be retained) as the Apes and Lemurs. This order is now divisible into seven families, of about equal systematic value; the first, the *Anthropini*, contains man alone; the second, the *Catarrhini*, embraces the old world apes; the third, the *Platyrrhini*, all new world apes except the marmosets, etc., etc." [p. 124.] In another and later work he makes man constitute one of three sub-orders into which he divides the Order of *Primates*, namely, the *Anthropidae* with man alone, the *Simiadae* including monkeys of all kinds, and the *Lemuridae* with the diversified genera of lemurs. On this determination of Man's place in Nature, Mr. Darwin remarks:—"As far as differences in certain important points of structure are concerned, man may no doubt rightly claim the rank of a sub-order; and this rank is too low, if we look chiefly to his mental faculties. Nevertheless, under a genealogical point of view, it appears that this rank is too high, and that man ought to form merely a family, or possibly only a sub-family." [*Descent of Man*, Vol. I, p. 187.]

This, then, is the fact with regard to man's actual position in the scale of organic life. He is a member of the same order, at least, as the gorilla and the chimpanzee, the orang and the gibbon; and while there seems to be some doubt whether he should be ranked by himself as a sub-order, a family, or only a sub-family, I suppose that he will henceforth be undoubtedly classified in the same order of *Primates* with the apes and monkeys. Prof. Huxley states explicitly (and his rank as a comparative anatomist is among the highest): "Whatever system of organs be studied, the comparison of their modifications in the ape series leads to one and the same result—that the structural differences

which separate man from the gorilla and the chimpanzee are not so great as those which separate the gorilla from the lower apes." [*Man's Place in Nature*, p. 123.] The fact, therefore, of man's close relationship to the animal kingdom, as shown by his existing organization, is in perfect harmony with the theory that he is the direct descendant of lower forms of animal life.

So far, indeed, have these investigations been carried, that an approximate pedigree has been made out for us, tracing back our ancestry so far that it loses itself in the mists of the remotest antiquity. Mr. Darwin himself holds that man in both hemispheres is descended from the same stock whence the present Catyrrhine or Old World monkeys have been derived,—these being one great branch of the *Simiadae*, which were themselves descended from the *Lemuridae*; and so on back to the most ancient ancestors of all the *Vertebrata*—"marine animals resembling the larvae of existing *Ascidians*." [*Descent of Man*, Vol. I, p. 204; Vol. II, p. 372.] Prof. Hückel goes even into greater detail. He gives an elaborate genealogy of the human species, which consists of twenty-two steps or degrees, tracing the present race of men back to men devoid of language (*sprachlose Menschen*), these to men-apes, or tailless Catarrhines, these to tailed Catarrhines, these to half-apes (*Prosimia*), these to marsupials, and so on, back to the *Monera* or "organisms without organs" not even possessing the cell form, but identical with simple *Cytodes*, and having their origin in spontaneous generation out of inorganic matter. [*Natürliche Schöpfungsgeschichte*, pp. 578-592.]

This is only carrying out with rigorous logic the principles of the Development Theory. They involve ultimately this assumption of spontaneous generation, that is, the insensible gradation between unorganized and organized matter. If Prof. Hückel shocks anybody by thus tracing the ancestry of mankind back to the inorganic elements of the earth, I see no reason for such shock, since the Bible does the very same thing. It creates Adam out of the "dust of the ground," and Prof. Hückel does no more.

Thus biology gives her answer in favor of the Development Theory. History, so far as it speaks at all, speaks to the same effect. Primitive man has left no written records, it is true; but flints and rude tools become volumes under the eyes of scientific genius. The famous Engis and Neanderthal skulls tell their own stories, albeit thousands of years have elapsed since living tongue moved in the now decaying jaws. By the labors of such men as Aimé Boué, Buckland, Tournal, de Christol, Schmerling, Boucher de Perthes, Lund, Lubbock, Prestwich, Falconer, Evans, Lartet, Garrigou, and hosts of others, the high antiquity of man, extending far beyond the little limits of Biblical chronology, has been established beyond all reasonable doubt. So much has been done in the way of investigation, that myriads of precious relics have been accumulated in museums, public and private, proving by ocular demonstration the fact of man's existence in a low and degraded condition, scarcely above that of the brutes, long ages before he was formerly known to have existed. The Epoch of the Great Bear and Mammoth, and the Epoch of the Reindeer, animals long since extinct in Southern Europe, beheld savage man living on fruits and roots or raw flesh, clad in skins, sleeping under trees or in caves, and destitute of everything that now makes human life beautiful or even endurable.

Louis Figuier, however, whose work on "Primitive Man" is full of valuable information on the subject, makes his illustrations in singular contrast with his text. He describes man at this early period as I have stated; yet he depicts him in his illustrations as an Apollo, noble, intellectual in face, refined and even poetic in air and attitude. The incongruity is ludicrous. The man of the illustrations ought to live in Paris, go to the opera, libraries, and art museums, and live in the world of fashion or of letters; while the man of the text ought to be an ugly and brutal fellow, rough, fierce, and unkempt. Figuier has transported Fenimore Cooper's idealized Indian to the Stone Age, and with his pencil, at least, made him out to be the "noble savage" that excites the pity or animosity of all who profess to know the savage as he is. The reason of this laughable incongruity is plain. Figuier denies and despises the Development Theory as "degrading;" so he is determined that the confessed savage of the Stone Age shall have the intellectual head and fine physique of the civilized man. Into a similar absurdity is every theorist plunged who maintains that man always was what he is now. If he had been, his condition would always have been what it is now. The very fact of a progress from barbarism to civilization is itself a proof to some extent of the Development Theory of the human species, for it proves a gradual improvement of the human organization, without which man would have been barbarous still.

Thus biology and history concur in affirming the essential truth of the Development Theory. So also does the spirit of the age. Man is today conscious as never before of his splendid future, and he rejoices in the slow but sure demonstration by science of a theory which is strong confirmation of his hopes. For this theory

means the continued "Ascent of Man" in the future, as in the past. And when I hear croakers dimly bewailing its evil influence on society or morals or religion, I would fain ask what influence but evil, "and that continually," can proceed from the other theory that we have fallen from a high estate, and now lie grovelling helpless in the mire till some one shall come and pull us out? If anything could quench hope and freeze purpose, will not that do it? No, the Development Theory is the most cheerful and hopeful that could be devised; and, for one, I rejoice on moral, poetical, social, and religious grounds, that Science is to-day making its truth so plain, that none but the prejudiced and ignorant can long withhold assent.

FREE RELIGION AND SCIENCE.

[From the New York Union Advocate, Sept. 26, 1872.]

The advocates of free religion, as it is called, have a great deal to say about science as the main ground of their hope of success. In this they show their folly. The great pioneers of science, including Bacon and Newton, have as a whole been anything but free religionists in their sense. They were firm believers in the religion of the Bible, to which they bowed in reverence, and recognized as the great stimulator of their minds the study of the Word of God. They found the great facts of science to be so many manifestations of the nature and attributes of the Jehovah of prophets and apostles. But the opposite should have been the case, if the position of modern free thinkers be correct. The majority of the leading scientists of the present age are believers in the Bible. The institutions where science is most successfully cultivated owe their origin and fostering support mainly or entirely to Christianity.

It is noticeable how ready free religionists are to seize for their comfort and support any baseless theory or seeming scientific truth that may be broached. Some years ago, when certain scientists advanced the theory of a plurality of origins of the human race, they swallowed that as a sweet morsel; they set it down as solid truth, and therefore the Bible could not be true. When Darwin advances the theory that man had one origin from an extinct species of monkeys in South Africa, they seize that voraciously as the only true theory; and, therefore, the Bible cannot be true. They seem to think and act on the principle—anything to overthrow the Christian religion. Consistency and logical reasoning they seem to have not the slightest regard for. Mr. Abbot of the *Index* writes to Mr. Darwin, and expresses great pleasure and hope in his monkey theory, as sustaining him in his crusade against the Christian religion in America. Darwin replies to him, and says in regard to his atheistic creed: "I have now read 'Truths for the Times,' and I admire them from my inmost soul; and I agree to almost every word."

Free religionists accept as established truth Darwinism, while the majority of leading scientists reject it as contrary to science. The leading scientific society in France a short time since rejected the name of Darwin for membership, when proposed, because his theory was so contrary to the facts of science. Truly, Mr. Abbot and his associates must be in a sad predicament, and exceedingly short of timber to build up their system. True science is against them.

[Passing by the *Union Advocate's* account of our private correspondence, which, as we have never informed the public what we wrote to Mr. Darwin, the writer of the above is obliged to invent freely in order to suit his own purposes, we desire to call especial attention to two of his statements which manifest an even greater tenderness of conscience with regard to the moral obligation of accuracy. "The majority of the leading scientists of the present age are believers in the Bible." "The majority of leading scientists reject it [Darwinism] as contrary to science." Probably some question may arise as to who are the "leading scientists of the present day." We see no way to save the reputation of the *Union Advocate* except by attributing that high honor to Father Hecker, Rev. J. D. Fulton, Elder Miles Grant, Dr. McCosh, the Pope of Rome, and the writer of the article above quoted, who will doubtless endorse the whole list in consideration of the closing name.—ED.]

OF NO PERMANENT BENEFIT.—Dr. Döllinger says that of all the Jesuit missions to Japan, Paragua, the North American Indians, Greece, Persia, China, and Egypt, scarcely the recollection survives, while Spain, upon which they impressed their spirit so completely that they made it one grand monastery, produces nothing in literature, and, excepting Turkey, is the most retrograde country in Europe.—*Union Advocate*.

A minister not long ago preached from the text—"Be ye, therefore, steadfast!" but the printer made him expound from "Be ye there to breakfast."

Voices from the People.

"Your *INDEX* came to me through the P. O. some three months since. I have from that time obtained it through my agent, and I read the same with increased interest. I have long entertained the same sentiments. I think they accord with many of our celebrated English authors—namely, Butler, Pope, and many others; but you have made the subject more plain to ordinary minds. I have lent out all my numbers of *THE INDEX* to my friends, and am now at a loss for a perpetual of the same. I see you advertise a bound volume; please send the same to me and any other numbers for distribution, especially Rev. C. Voysey's Lectures, if you have them separate."

"For more than fifty years I have been seeking for truth, and have long since ceased to expect to find it within the bounds of sectarianism. Your publication appears to come nearer it than any other I have met with. I would gladly do more for you than I have been able to do, but I live in a Presbyterian community and am comparatively poor. I hope yet to be able to take a share in your enterprise, but cannot until some debts are paid. In the meantime I wish all success to the enterprise."

"We all wish you success, and hope soon to send something more substantial than wishes, as we could not well do without it now, and hope that whatever improvements are made, the size of the paper may remain, as it is the most convenient size for reading."

"Please accept my subscription for one share of *THE INDEX* fund, \$100. When rationalists from a nobler motive do for humanity what religionists do as a duty to God, there will be no scarcity of funds to advance such enterprises as the one which is so worthily engaging your attention."

"I am much delighted with your paper, and hope it will continue to flourish and prosper. I hate priestcraft, and would like to see all exercise freedom of thought. A religion which will not bear the strictest investigation is but a rotten prop to trust in; far less can it be called the revealed religion of God."

"I congratulate you on the success of the *Index* Association. Some of us Radicals here feel the deepest interest in the continuance of the paper."

"Though not agreeing with all of your statements I certainly appreciate the glorious little *INDEX*. It is the enlightener of this superstitious world."

LOCAL NOTICES.

FIRST INDEPENDENT SOCIETY.—The regular meetings of this Society are held at ODEON HALL, St. Clair Street, on Sunday mornings, at 10½ o'clock. The public are invited to attend.

PUBLISHER'S NOTICES.

Cash Receipts for the week ending October 5.—John S. Baldwin, \$2.50; N. S. Townsend, 50 cts.; T. A. Heywood, 85 cts.; Jonathan Watson, \$10; Morris Einstein, \$10; Jno. McLaughlin, 10 cts.; George H. Holtzman, \$2.50; A. Fullerton, 50 cts.; H. L. Hall, \$10; C. Robinson, \$12; Mrs. H. L. B. Bostwick, \$10; E. Roosevelt Johnson, 25 cts.; Rev. Arthur M. Knapp, 10 cts.; American Unitarian Ass'n., 10 cts.; Cassie Skean, 25 cts.; Charles Collins, 40 cts.; Jno. C. Rooney, \$20; Jos. H. Wilby, 25 cts.; Mary Shannon, \$0; Mary C. Shannon, \$10; J. C. Murch, 10 cts.; Jno. Shackleton, \$2; Albert B. Brown, \$4; Mrs. A. G. Cook, \$2; Alfred J. Wolf, \$3; A. High, \$2; Rev. J. C. Leonard, \$25; George Lewis, \$1; Mrs. H. L. B. Bostwick, \$1.50; William Dudgeon, \$10; LaRoy Sunderland, \$3; William Chace, \$3; William Tasker, \$3; Dr. J. H. Stevens, 60 cts.; Dave W. DeBeck, \$3; Maurice O'Connell, \$3; Thomas H. Johnson, \$3; Cassie Skean, 75 cts.; Marion Martin, 50 cts.; T. L. Harris, \$3; Geo. T. Moffatt, \$3; Nathan Taylor, \$1; A. W. Hodgekins, \$2; E. G. Burnett, \$5; Walter F. Austin, \$2.50; Esther Tylet, \$2.50; F. W. Cook, \$20.00; Mrs. J. J. Pillsbury, \$10.00; James P. Veatch, \$2; Dr. H. W. Cloud, \$2; Rev. T. B. Forbush, \$2; Dr. T. P. Wilson, \$2; Griswold & Buckingham, \$2; Lyman Little, \$2; George Rose, \$1; Stephen Buhner, \$2; Geo. B. Hicks, \$2; William A. Butler, \$3; N. H. Webster, \$2; Joseph Berles, 50 cts.; Mrs. C. S. Groot, \$2; B. G. Sweet, \$3.

All receipts of cash will be acknowledged as above, and no other receipt unless specially requested. Persons who do not see their remittances acknowledged within three weeks after sending, will please notify us.

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