

NEW PUBLICATIONS.

SCIENCE AND EVOLUTION.

SCIENCE AND EVOLUTION. By H. W. Henshaw. New York: The Century Company, 1904. Pp. 320. \$1.50. This is a book of essays, written by various authors, on the subject of evolution. The editor is H. W. Henshaw, who has never been thought of as a specialist in evolution. The volume is a collection of articles by various authors, including Henshaw, who has never been thought of as a specialist in evolution. The volume is a collection of articles by various authors, including Henshaw, who has never been thought of as a specialist in evolution. The volume is a collection of articles by various authors, including Henshaw, who has never been thought of as a specialist in evolution.

According to Professor Huxley, Mr. Darwin's theory is not a theory of the origin of life, but a theory of the origin of man. He never considers the origin of the universe, or the origin of matter, or of life. It is simply a scientific, detailed in its description, and of a higher order than is to be found in the works of other writers. The role of the origin of life is to account for the origin of man, and to explain the origin of the human race. The origin of life is to account for the origin of man, and to explain the origin of the human race. The origin of life is to account for the origin of man, and to explain the origin of the human race.

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through the fact of not a complete, but a partial, identification of the ideas as contained in each. Viewing these phenomena from our theory as to their cause, they exhibit some of the features and conditions which indicate a substituting intelligence as well as time and space. The nature of the system of their communication is truly in the objective intelligence. It is a spectacle of the mechanical power, habit, power, pleasure, and identity of a Personal Being now. The more fully we establish the fact of their being in the history of organic forms the more conclusively do we establish the existence of these divine activities.

But, furthermore, the author, against the old doctrine of specific creation by divine volitions, and the doctrine of a succession of organic beings to have taken their place, proposes to establish himself by proving that man is descended from a monkey, an ape, or a bear. The same facts of correlation and correspondence which results, from which man is made to be divine intelligence. The development of organic forms through the operation of secondary causes is no more incompatible with religion, Dr. Woodell maintains, than the ordinary phenomena of birth and death in the human race. Is it less credible, he asks, that man or a species of man have been evolved by secondary causes from all ages, than that by secondary causes from after individuals should be evolved from a new form before a previous one? "It is less more dangerous to have dignity or have been obtained from a period as long time to have been obtained from of more than when we will a human being." If the answer by which the fact has developed into a man to not include the being from the process, no reason can be supplied why the being should be excluded from a subsequent development up from the monkey. Woodell extends his argument from the work of material movement to reason that it has been obtained through physical processes. The extent of

his position is to be established to be derived from nature by an organic being.

The views maintained by Chancellor Woodell are far better an exposure of the objections of many persons now of the day, who claim of Christian Holiness perhaps to be superior to a religious, an organization of the world of thought, and that other work is not only derived to the operations of his own special department of study. Dr. Ridge takes a general and abstract view of the general character of physical science. Dr. Woodell's study is the knowledge of religion. There is no reason that they are not equally treated by the organic world, a garden for knowledge, and the best of human progress. Their difference of opinion may be corrected by differences of nature which determine the general course of their respective growth, and the one may be superior to the other. It is not necessary that the differences themselves might determine the course of their growth, but the one may be superior to the other, and the differences themselves may be corrected by differences of nature and the differences themselves to a well informed and progressive personality. The two important works of which we have spoken in separate sections, may be therefore considered as complementary to the complements of each other. They may be read in advantage in connection, and by attending the opposite sides of the same, with the attention the other is by construction that the same may be appreciated. Still it would not be surprising that the author in writing his volume, the study of birth, death, and resurrection of nature, and that of organic beings, is connected with the same progress, in being given a logical and logical introduction with the permission

NEW PUBLICATIONS.

DARWINISM AND EVOLUTION.

1. **WHAT IS DARWINISM?** By CHARLES HODGE. 12mo. pp. 17. Scribner, Armstrong, & Co.
2. **THE DOCTRINE OF EVOLUTION.** By ALEXANDER WINCHELL, J. D. 12mo. pp. 148. Harper & Brothers.

The simultaneous publication of these volumes by writers of eminent authority in their respective branches of learning may be regarded as an evidence of the deep hold that the questions to which they are devoted have taken of the minds of thinking men, and will be welcomed as a valuable contribution to the understanding of the subject by those who have little opportunity for profound personal research. The author of the first work at the head of this article is the celebrated Princeton professor, who has devoted a long life to the pursuit of the severest studies, a ripe and thorough scholar, with great logical acumen and skill, whose wide attainments have not impaired the strength of his convictions, who has never been tempted by novelties of speculation to swerve from the strictness of the ancestral faith which he has done so much to illustrate and sustain, and who by general consent, would be placed, in point of learning, acuteness of thought, lucidity of expression, and power of argument among the most accomplished masters in American theology. The second writer whom we have named, the chancellor of Syracuse university in this State, is a much younger man, less addicted to theology than to natural science, not known to so large a public, but held in the highest esteem in scientific and literary circles, the author of several works of excellent fame in his favorite department of study, with a freshness and earnestness of thought which gives promise of future achievements of high

import, and with a mental courage that does not shrink from the sacrifice of custom and tradition for loyalty to truth. A brief comparison of the ideas of two such men on a pregnant subject of inquiry cannot fail to be instructive to the student, and may be of some interest to our readers.

L. According to Professor Hodge, Mr. Darwin does not undertake to set forth a philosophical system. He never speculates on the origin of the universe, on the nature of matter, or of force. He is simply a naturalist, skillful in his descriptions, and of singular candor in regard to the difficulties of his doctrine. His sole problem is to account for the varieties of animal and vegetable life on the earth. In the solution of this problem, he assumes the existence of matter, the efficiency of physical causes, and the existence of life in the form of one or more primordial germs. He does not adopt the theory of spontaneous generation, but accounts for the existence of matter and of life by the agency of the Creator. All living organisms, through all the stages of the history of the globe, have descended from the primordial germs. Growth, organization, and reproduction are the functions of physical life. Hence the primordial germ began to grow and exercise its natural functions as soon as it began to live. The descent of animals and plants from the primordial animalcule is explained by the law of heredity, or the fact that the offspring are like the parent; by the law of variation, or the fact, that while the offspring resemble their immediate progenitor, they also vary within narrow limits from their parent and from each other; by the law of over production, or the fact that all plants and animals tend to overrun the means of support, thus causing a struggle for life, in which only a few of the myriads born can possibly survive; and, finally, by the law of natural selection, or the survival of the fittest, that is, if any individual of a given species of plant or animal has a slight deviation

from the normal type, favorable to its success in the struggle for life, it will survive. This variation is, by the law of heredity, transmitted to its offspring, and by them again to theirs. The favored ones gain the ascendancy, the less favored perish, and thus the modification becomes established in the species. In Mr. Darwin's view, there is no limit to the changes which may be produced by these simple laws in the course of ages. Years are of no account in this process. As astronomers take the diameter of the earth's orbit as the unit of space, Darwinians must take a geological cycle as their unit of duration. *The descent of the human race is explained on the same principles.* "He who denounces these views (as irreligious)," says Mr. Darwin, as quoted by Dr. Hodge, "is bound to explain why it is more irreligious to explain the origin of man as a distinct species by descent from some lower form through the laws of variation and natural selection, than to explain the birth of the individual through the laws of ordinary reproduction."

But in order to get at the heart of Mr. Darwin's theory, Professor Hodge affirms, we must advert to his use of the word "natural," in the two senses, as antithetical to the word artificial, and as antithetical to the supernatural. Natural selection is a selection made by natural laws, working without intention and design. Hence it is opposed not only to artificial selection, which is made by man to accomplish a given purpose, but also to supernatural selection, which means either a selection originally intended by a power higher than nature, or which is carried out by such power. In using the expression natural selection, Mr. Darwin intends to exclude design, or final causes. All the changes in plants or animals, including man, descended from the primordial germ, have been brought about by unintelligent causes. Natural selection is the operation of natural laws, analogous to the action of gravitation and of chemical affinities. It is denied that it is a process

originally designed, or guided by intelligence. Artificial selection is an intelligent process, natural selection is not.

Darwinism, then, under the analysis of Dr. Hodge, includes three distinct elements. First, evolution, or the assumption that all organic forms have been evolved from one or more primordial living germs. Second, that this evolution has been effected by natural selection, or the survival of the fittest. Third, that this natural selection is without design, being conducted by unintelligent physical causes. The last named element is the most important, and the only distinctive element of the theory. Neither the first nor the second of these elements constitutes Darwinism, nor do the two combined. A man, therefore, may be an evolutionist without being a Darwinian. Nor is the theory of natural selection the vital principle of Mr. Darwin's theory unless the word natural be taken in a sense antithetical to supernatural. The essence of his doctrine is the rejection of final causes. It is this feature of his system which brings it into conflict with theology. The denial of design in Nature is virtually the denial of God. Hence Mr. Darwin's theory is virtually atheistic, as he denies all design in Nature.

In connection with Professor Hodge's conclusion that Mr. Darwin's theory is atheism, we must take his statement, first, that Darwin himself is not an atheist, and, second, that atheism is impossible by the constitution of the human mind. The first admission furnishes a method of reconciling the alleged discoveries of science with the interests of religion. No true friend of science or of religion would wish to increase the hostility between the two parties. If Darwin accepts the existence of the Creator as the origin of the universe, it would seem that he accepted the foundation of religion, which is not set aside by his denial of supernatural interference in the development of the universe. In the opinion of many thinkers, the

original divine causality is sufficient to account for the phenomena of Nature, without the necessity of a special divine agency in the successive steps of the progress of Nature. The laws of electricity being given by the divine fiat, the lightning strikes according to natural conditions, without being directly wielded by the divine hand. The religious advocates of Mr. Darwin's theory would maintain that he never denies the divine origin of the laws of heredity, of variation, of over production, of natural selection, but only denies that their development is due to continuous creative acts. The admission of the divine existence would seem to involve the divine agency in the establishment of the laws of Nature. But this apparently is not atheism; or if it be so, it is atheism shorn of its characteristic feature, the denial of a Supreme Being and of Creative Power in the universe. A remarkable conclusion, moreover, may be drawn from these statements of Dr. Hodge. If Dar-

win's doctrine is atheism and Darwin himself is a theist, it follows that Darwin either does not believe in his own doctrine, or does not understand it.

The force of Professor Hodge's reasoning that Darwinism is atheism is still further embarrassed by his assertion that atheism is impossible. The belief in God, he affirms, is grounded in human nature, and cannot be wrested from the human soul. "The man who is trying to be an atheist is trying to free himself from the laws of his being. He might as well try to free himself from liability to hunger or thirst." If then neither Mr. Darwin is an atheist, nor his disciples are atheists, nor can any man be an atheist, the elaborate proof of the atheism of his doctrine would appear to be superfluous, since neither its author, nor its receivers, nor any human being accepts its consequences, and it remains an abstract barren system, in a religious point of view, with no power to damage, and with no interest beyond the sphere of science. It is, however, well both for the cause of religion and the cause of science that any apparent antagonism between the two should be pointed out, and the question fully and fairly discussed on its own merits. Indeed it seems to be the natural condition of scientific progress that every new discovery should be subjected to the ordeal of theological criticism. This has been the case with astronomy, with geology, with chronology, with ethnology, and the new speculations in natural science must now take their turn. The true friends of science should accordingly welcome every criticism that tends to elucidate its relation with religion. They should especially rejoice when the subject falls into such competent hands as those of the author of the present volume. His style is a model of lucid simplicity; his manner is free from passion and effeminate excitement; his arguments are set out with the skill of an experienced controversialist, and their force is not impaired by any greater infusion

their force is not impaired by any
of theological bitterness than may serve as a whole-
some tonic to the reader.

II. In the preface to his volume, Chancellor Win-
chell avows himself a believer in the theory of
evolution, regarding it as the law of universal intel-
ligence under which complex results are brought
into existence. This law is a fact which proclaims
intelligence more clearly than any possible array of
isolated phenomena. The results of evolution could
not have been obtained under any law but the
supreme law of free intelligence. The cause of
evolution, therefore, is a mode or volition of the
incomprehensible Mind. Evolution is the law of
sequence in the succession of phenomena. The type
of the process is the development of the embryo
within the egg. But it is also exemplified
in all progress in the development of life
upon the earth, and in the growth of
society, government, and cultivation. It is
not a force, but a plan in accordance with which
force acts. The popular assumption that evolution
is a device for explaining the phenomena of the
Universe by forces whose origin is not traced to the
Divine Mind, is therefore atheistic in its tendency,
is believed by the author to be unfounded, and a
considerable portion of his book is devoted to the
exposure of the fallacy. He cherishes a profound
conviction that the being and providence of a per-
sonal God are to no extent imperiled by the admis-
sion of any form of evolution which does not ex-
pressly make unintelligence its starting point. He
endeavors to demonstrate that no form of the evolu-
tion theory now current in the scientific world is
incompatible with a devout recognition of the
Divine existence.

In addition to the elaborate arguments which the
author brings in support of this position, he pro-
duces a variety of historical testimony of an inter-
esting character showing the rudiments of the evo-

lution theory among religious thinkers in different ages. St. Augustine, he informs us, held the opinion that God created by conferring on the material world the power to evolve organization. St. Thomas Aquinas quotes with approval the saying of St. Augustine that in the first institution of nature we do not look for miracles, but for the laws of nature, and that the various species of animals and plants *were only created derivatively.* Buchanan, speaking of physical evolution, affirms that *if it were established it would not follow by necessary consequence "that the peculiar evidence of theism would be thereby destroyed or even diminished."* Dr. McCosh declares that "there is nothing irreligious in the idea of development, properly understood." "Similar views," says Dr. Winchell, "are entertained by many orthodox theologians of the present day."

Nor is it to be supposed, he adds, that the advocates of these theories are generally willing to exclude themselves from the fold of believers in God. "It is better to be content with ignorance of a man's religious belief than to assign him a creed which he has not avowed. Whatever be the views of such writers as Vogt, and Büchner, and Haeckel, Mr. Darwin sincerely believes that his theory ought not to 'shock the religious feelings of any one,' and he speaks of life as 'having been originally breathed by the Creator into a few forms or only one.' Mr. Wallace traces all natural phenomena to will, and says: 'The whole universe is not merely dependent on, but actually is, the will of higher intelligences, or of one Supreme Intelligence.' Professor Asa Gray declares 'that the philosophy of efficient cause, and even the whole arguments from design would stand, upon the admission of such a theory of derivation (as Darwin's), precisely where they stand without it.'" In concluding his volume, Dr. Winchell expresses the opinion that should the doctrines of evolution, even in their extreme phases become established as a part of the scientific creed, there will be

no proof of the absence of immediate divine agency from any of the operations of life. In any developments of scientific truth, Christian theism has nothing to fear, but much to gain.

Dr. Winchell is by no means blind to the scientific difficulties which attend the doctrine of evolution, both as interpreted by Mr. Darwin, and as held by its earlier advocates. He makes no attempt to gloss over their force, to evade their application, or to disguise their consequences, but submits them to a rigid analysis, discussing them at all points with freedom, with singular candor, and with great logical effect. He attaches less importance, as we have seen, to the objections that have been made on religious grounds. We are compelled, he argues, to recognize the fact of such a succession of organic forms as constitutes an evolution. Viewing these phenomena apart from any theory as to their cause, they exhibit a scene of harmonies and correlations which indicate a coördinating intelligence as vast as time and space. The unity of the system of facts demonstrates a unity in the directive intelligence. It is a spectacle of the manifested power, intelligence, goodness, and eternity of a Personal Existence. The more firmly we establish the fact of evolution in the history of organic forms, the more conclusively do we establish the existence of these divine attributes.

But, continues the author, suppose the old doctrine of specific creations to become untenable, and the doctrine of a succession of organic beings to have taken its place. Suppose it should hereafter be proved that man is descended from a monkey, an ascidian, or a monad. The same facts of correlation and coadjustment would remain, from which reason impels us to deduce intelligence. The development of organic types through the operation of secondary causes is no more incompatible with religion, Dr. Winchell maintains, than the ordinary phenomena of birth and growth in the human race.

Is it less credible, he asks, that man as a species should have been evolved by secondary causes from an ape, than that by secondary causes man as an individual should be evolved from a new-born babe or a primitive ovum? "It is no more derogatory to man's dignity to have been at some former period an ape than to have been that red lump of mere flesh which we call a human infant." If the means by which the babe has developed into a man do not exclude the Deity from the process, no reason can be assigned why the Deity should be excluded from a similar process in leading man up from the monkey. It does not exclude divine agency from the work of organic advancement to assume that it has been effected through physical processes. The Creator no

less made man if he caused him to be derived from descent by an orang-outang.

The views maintained by Chancellor Winchell may be taken as exponents of the convictions of many scientific men of the day, while those of Professor Hodge may perhaps be regarded, to a certain extent, as representing the interests of theology. Not that either writer is exclusively devoted to the conceptions of his own special department of study. Dr. Hodge takes a generous and enlightened view of the aims and character of physical science. Dr. Winchell is keenly alive to the interests of religion. It may be assumed that they are each equally inspired by the love of truth, a passion for knowledge, and the hope of human progress. Their differences of opinion may be accounted for by differences of original mental structure, the peculiar nature of their respective pursuits, and the confirmed habitudes of many years. It is not to be expected that the consummate theologian and the consummate man of science should be united in the same individual; but each may combine the elements of theology and the elements of science in a well balanced and harmonious personality. The two important works of which we have given an imperfect account, may be therefore considered in some sense as the complements of each other. They may be read to advantage in connection, and by examining the opposite sides of the shield, both the gold and the silver in its construction may be recognized and appreciated. Still it must not be forgotten that whether in religion or science, the attainment of truth results from conflict of opinion, and that an earnest warfare, if conducted with legitimate weapons, is better than a languid and barren peace.
