

THE SCOPE AND PRINCIPLES OF THE EVOLUTION PHILOSOPHY.*

SINCE the interesting biological lectures of our last year's course were delivered, a noteworthy contribution has been made to that department of evolutionary thought, by the publication of Alfred Russel Wallace's "Darwinism: An Exposition of the Theory of Natural Selection, with some of its Applications." A co-discoverer with Charles Darwin of the law of Natural Selection, Mr. Wallace resembles him as a writer in the simplicity and lucidity of his style; and the wealth of facts with which he has illustrated his discussion of the subject, indicating the utmost patience and thoroughness of research, is nowhere equaled save in those epoch-making books which indicated Darwin as the foremost naturalist of his own, or, perhaps it would not be too much to say, of any time.

Writing thirty years after the publication of "The Origin of Species," and in the light of all the objections which have been brought against the theory of Natural Selection, Mr. Wallace declares that Darwin "did his work so well that 'descent with modification' is now universally accepted in the organic world; and the rising generation of naturalists can hardly realize the novelty of this idea, or that their fathers considered it a scientific heresy to be condemned rather than seriously discussed." In the defense of "Natural Selection" as the fundamental law of biological evolution, Mr. Wallace is even more of a Darwinian than Darwin himself—showing, it would seem conclusively, that many of those variations which Darwin attributed to sexual selection, can be explained by natural selection, including nearly all those brilliant colors in the ornamentation of male birds and animals which Darwin assigned to the choice or preference of the female.

Mr. Wallace also trenchantly criticises the supposed law of use and disuse as affecting biological evolution,—the so-called "Lamarckian factor,"—the importance of which

was explicitly admitted by Darwin, though that fact is often ignored by his critics, and has been emphasized by Mr. Spencer in his "Factors of Organic Evolution," as well as by Prof. Cope, Dr. Raymond, and the American School of Evolutionists generally. "There is now much reason," Mr. Wallace declares, "to believe that the supposed inheritance of acquired modifications—that is, of the effects of use and disuse, or of the direct influence of the environment—is not a fact, and if so, the very foundation is taken away from the whole class of objections on which such stress is now laid." Such effects, for example, as the diminished jaw in civilized man, and the diminution of the muscles used in closing the jaw in case of pet dogs which are fed on soft food, are wholly accounted for by the simple fact of the withdrawal of natural selection in keeping up the parts in question to their full dimensions, in connection with Mr. Galton's law of "Regression toward Mediocrity," whereby, it has been proved experimentally, there is a tendency of organs which have been increased by natural selection, to revert to a mean or average size, whenever the stress of circumstances which compelled the operation of this law is removed. Investigating the supposed effects of use and disuse in wild animals, Mr. Wallace notes the circumstance that "the very fact of *use*, in a wild state, implies *utility*, and utility is the constant subject for the action of natural selection; while among domestic animals those parts which are exceptionally used are so used in the service of man, and thus become the subjects of artificial selection." "There are no cases among wild animals," he says, "which may not be better explained by variation and natural selection," than by the law of use or disuse. He quotes Galton, and Prof. Weismann in his recently published "Essays on Heredity,"—two of the most careful students of this subject,—in support of the non-heredity of acquired variations; and on the whole makes an exceedingly strong argument in favor of natural selection as the great and controlling factor in organic evolution. Prof. Cope and the American evolutionists, he says, "have introduced theoretical conceptions which have not yet been tested by experiments or facts, as well as metaphysical conceptions which are incapable of proof. And when they come to illustrate these views by an appeal to palæontology or morphology,

we find that a far simpler and more complete explanation of the facts is afforded by the established principles of variation and natural selection." Mr. Wallace's general conclusion is that all other laws and factors in organic evolution "must have operated in entire subordination to the law of natural selection,"—a conclusion which he supports by logical argument from such a wealth of accumulated facts, that it will be extremely difficult for his opponents successfully to combat his views.

While asserting the continuity of man's progress from the brute, and of the higher animals from the protoplasmic cell, Mr. Wallace believes that at three definite stages in the progress of organic evolution there has been an introduction of new causes, not involved in nor evolved from the forces previously operating. These are, 1st., the change from inorganic to organic life, otherwise involved in the conception of spontaneous generation; 2nd, the introduction of sensation or consciousness, which "is still more marvelous, still more completely beyond all possibility of explanation by matter, its laws and forces"; and, 3rd, the development of certain noble characteristics and faculties in man, as, for example, his moral and intellectual nature, and the mathematical, artistic and musical faculties, which differentiate him from the brute animals, indicate the reality of a spiritual universe, and prophetically assure an immortal life for the spiritual nature of man.

His peculiar views on these topics will probably appear more or less reasonable to different persons according to their temperamental tendencies and educational bias; but no one, I think, can lay down this book without a conviction of the great ability and transparent sincerity of its author, of its pre-eminent value as a contribution to the general literature of evolution, and of the weight of its arguments in defense of Natural Selection as a controlling factor in organic development.*

Evolution may be true, in the field of biology, it may yet be said, but what of it? Man may be the descendant of an anthropoid ape, "probably arboreal in its habits,"

* Note should also be made of Prof. Angelo Heilprin's recently published book on "The Bermuda Islands," which contains a careful study of the formation of coral reefs, confirming Darwin's theories on this subject, which some recent writers have brought in question. The tendency of the most recent studies has unquestionably been to strengthen the high regard in which Darwin has been justly held as a careful, conscientious investigator and safe theorizer in the field of evolutionary research.

though of this we are not convinced; but why is it necessary to announce the fact? Any one who traces his ancestry back far enough, will probably discover relationships of which he will not be particularly proud—but he does not therefore find it necessary to bruit the matter abroad, so to speak,—to publish it upon the housetops. Truth is a good thing, indeed, but there are times when silence is golden and speech is leaden—when discretion in speech is the better part of intellectual valor. What moral or religious end can possibly be attained by the public proclamation of a belief in Evolution? Such are the comments, no doubt, of some of the self-constituted critics of the work of this Association. Another sort of criticism of certain phases of evolutionary thought is often heard from those who are quite ready to declare themselves converts to the doctrine in its purely physical and biological aspects: Evolution is only a method, these critics declare; it is not a philosophy, it is not a religion;—the great problems of ethics, of metaphysics, of life, what have these to do with the nebular hypothesis, the origin of species by natural selection, or the descent of man from lower forms of life?

It should be sufficient, perhaps, to remind intelligent people that if evolution is “only a method,” it is, so far as we are able to discover, a *universal* method, penetrating into all the phenomenal activities of nature; explaining not only the processes whereby suns and worlds have come into being, and the varied and bountiful forms of life have successively appeared upon the earth, but also how the several faculties of the mind have grown out of the simplest form of conscious apprehension, how the special senses have been developed, how individuals have been impelled to combine, forming the complex organizations into which our civilized societies are divided, how governmental forms have evolved and the institutions of religion have come into being—how religion itself, indeed, and that sense of obligation which constitutes the foundation of man’s moral nature, have arisen by processes entirely orderly and natural, out of the interaction between certain primitive instincts and tendencies of the human mind, and the environing conditions under which they have found expression.

If we are right in assuming, with Spencer and Fiske and other great leaders in this new movement of thought, that evolution is thus practically illimitable in its range

throughout the universe of physical and mental phenomena, then indeed must we confess that it is not merely a method whereby the myriad forms of organic life have come into being—it is a method which searches into the deeper problems of religion and philosophy, compelling a reconsideration of old conclusions—a reconstruction of many of their fundamental conceptions. To speak of “the philosophy of Evolution,” therefore, is not without warrant. We may well term it, with John Fiske, a “cosmic philosophy,” since it is thus universal in its scope and application; or with Mr. Spencer, a “synthetic philosophy,” since, like the founder of Christianity, it comes not to destroy but to fulfill, discovering the measure of truth which resides in each antagonistic system, and by a new and deeper synthesis combining them into a harmonious and perfect whole.

If it should appear to some superficial thinkers that the advocates of this philosophy unnecessarily antagonize the creeds and methods of the prevalent religious faith,—ideas and conceptions that by many are deemed sacred,—the reply must be that the truth is more sacred than any existing institution, or theological or cosmological conception, however venerable. In the language of Emerson, “Nothing at last is sacred but the integrity of your own mind.” There is an ethics of the intellect which imposes upon every reverent thinker the obligation to follow absolutely the dictates of his enlightened reason, and frankly to confess his innermost convictions. In the noble passage with which Mr. Spencer concludes the first part of his “First Principles of Philosophy,” he says:

“Whoever hesitates to utter that which he thinks the highest truth, lest it should be too much in advance of the time, may reassure himself by looking at his acts from an impersonal point of view. Let him duly recognize the fact that opinion is the agency through which character adapts external arrangements to itself—that his opinion rightly forms a part of this agency—is a unit of force, constituting, with other such units, the general power which works out social changes; and he will perceive that he may properly give utterance to his innermost conviction: leaving it to produce what effect it may. . . . He must remember that, while he is a descendant of the past, he is a parent of the future; and that his thoughts are as

children born to him, which he may not carelessly let die. He, like every other man, may properly consider himself as one of the myriad agencies through whom works the Unknown Cause; and when the Unknown Cause produces in him a certain belief, he is thereby authorized to profess and act out that belief. For, to render in their highest sense the words of the poet,—

‘ . . . Nature is made better by no mean,
But Nature makes that mean; over that art
Which you say adds to Nature, is an art
That Nature makes.’

“Not as adventitious, therefore, will the wise man regard the faith that is in him. The highest truth he sees he will fearlessly utter; knowing that, let what may come of it, he is thus playing his right part in the world;—knowing that if he can effect the change he aims at—well: if not,—well also, though not *so* well.”*

This passage is noteworthy not only for the nobility of its thought and the transparent clearness of its diction, but also because it suggests some of the foremost questions involved in the discussion of the evolution philosophy. In naming the Power which works in the thoughts of men as well as in the processes of external Nature, “the Unknown Cause,” Mr. Spencer brings us face to face with the fundamental problem of the nature of our knowledge—and with that mental attitude which is popularly termed Agnosticism, the *bête-noire* of this philosophy in the minds of its orthodox critics, as well as those of the extreme radical or materialistic school of thought. In the misconception and denunciation of the doctrine of the relativity of knowledge which constitutes the philosophical breastwork of the agnostic’s position, extremes meet, and the Catholic Mallock, the anti-Christian realist Francis Ellingwood Abbot, and the materialist, ably represented last season on this platform by Mr. Starr H. Nichols,† clasp hands, and mingle their otherwise inharmonious voices. Leaving the fuller explanation and illustration of the doctrine of the relativity of knowledge to my able successor in this course, I shall endeavor hereafter briefly to define philosophical agnosticism; to show that its attitude is neither idealistic, strictly speaking, nor irreligious; that it is not inconsistent

* First Principles, p. 123.

† The Philosophy of Evolution, Evolution Essays, pp. 343-361.

with a realistic conception of the external world, nor with the obligation to use and trust those high faculties of intellect and reason which constitute the distinguishing features of the mind of man—that in every department of scientific, historical and true philosophic investigation, indeed, it is consistent and coincident with the meta-gnosticism of my friend, Mr. Skilton.* In speaking of individual opinion as a unit of that “general power which works out social changes,” Mr. Spencer places uppermost as the goal of intelligent thought and action, a practical rather than a merely speculative purpose—thereby turning our attention to the field of practical ethics which is involved in the discussion of sociological evolution. To a further consideration of the relations of the evolution philosophy to this topic, foremost at the present day in the arena of discussion and of practical statesmanship, I shall ask your thoughtful attention during the concluding portion of my paper.

What, then, let us ask at the outset, is an Agnostic? What is philosophical agnosticism? The word, as is well-known, was first introduced into English usage by Prof. Huxley, and was derived by him from Paul’s designation of the “Agnostic” or unknown God, whose altar was established by the pious Athenians. As Prof. Huxley himself describes its meaning and origin, it arose from a conviction produced by his early reading of Sir William Hamilton’s essay “On the Philosophy of the Unconditioned,” strengthened by subsequent reflection and the study of Hume and Kant. Of the essay of Sir William Hamilton, Prof. Huxley declares: “It stamped upon my mind the strong conviction that, on even the most solemn and important of questions, men are apt to take cunning phrases for answers; and that the limitation of our faculties, in a great number of cases, renders real answers to those questions not merely actually impossible, but theoretically inconceivable.”† As regards the validity of speculative conclusions, he was therefore forced to adopt the conviction thus stated by Kant in his “Critique of Pure Reason”: “The greatest and perhaps the sole use of all philosophy of pure reason is, after all, merely negative, since it serves not as an organon for the enlargement [of

* *The Evolution of Society, Evolution Essays*, pp. 225-227.

† *Christianity and Agnosticism, Huxley-Wace Controversy*.

knowledge,] but as a discipline for its delimitation, and instead of discovering truth, has only the modest merit of preventing error." In other words, the only practical result of metaphysical studies is to convince the unbiased student that the human mind is incapable of grasping ontological facts. In the clearer language of Mr. Spencer, "all our knowledge is relative." We can know nothing of the external universe—nothing even of the nature of our own bodies and of our own minds—save as they are directly related to our knowing faculties. Involved in this phenomenal knowledge, however, and accompanying it at every step, we have the inexpugnable testimony of our reason and consciousness that behind the world of phenomena there exists an Infinite and Eternal Energy which is the source and efficient cause of all phenomena, both physical and mental. As thus stated, the doctrine seems almost a truism. How, indeed, can it be possible that man should know anything which is wholly out of relation to his intellectual faculties? Nay, of what use or interest to him would such knowledge be if it were possible to attain it? And on the other hand, how is it possible for him to view the orderly procession of phenomena—any single phenomenon, indeed—without conceiving it as a manifestation of immanent causal energy? A sense of dependence upon a Power which is greater than our human capacity of comprehension—an apprehension of our own finitude and of that of the phenomenal universe, in the presence of this Power—is indeed as necessary to supply the demands of our intellectual as of our emotional and religious nature. If we think at all, we cannot escape from the implication involved in this belief. It rebukes our intellectual conceits, and touches with an infinite awe and reverence every discovered beauty, every hidden mystery, the existence of which is forced upon us by the contemplation of the world of phenomena. In the very fact that the depths of this mystery can never be sounded by the finite plummets of our thought, lies its capacity to forever satisfy the artistic, the poetic, the religious demands of our nature. "Who by searching can find out God? Who can know the Almighty to perfection?" Greater than any object of our definite knowledge is the human mind itself. The noblest product of evolution, it bows before no mere conception of the phenomenal universe, even

though infinitely extended in time and space. It yields supreme allegiance, reverence and worship only to that efficient Cause which underlies the world of phenomena, both mental and material, which dwells alike in star and flower, in the wonders of the physical organism, in the heights of thought and in the infinite depth of love, touching all that we see and all that we know with a tender halo of unsearchable mystery. Like the purple haze in which twilight robes the distant mountain-summits, fading away into the infinite depths of the stellar spaces, and softening the harsh outlines of rock and forest into lines of perfect beauty,—so the apprehension of the Unknowable Cause of phenomena mellows the sharp boundaries and limitations of the known, softens the crude details of our human picture, and gives it a symmetry and unity which satisfy the æsthetic longing, while it also meets the exigent demands of intellect and reason.

“The conviction that human intelligence is incapable of absolute knowledge,” says Mr. Spencer, “is one that has slowly been gaining ground as civilization has advanced. Each new ontological theory, from time to time propounded in lieu of other ones shown to be untenable, has been followed by a new criticism leading to a new scepticism.”* Whether we investigate the product of thought or the process of thought, this conviction is forced anew upon our minds. Analyzing the nature of the simplest product of our knowledge, we find that we know it only by a process of classification with something already known. The botanist who discovers a new flower studies its structure, investigates its method of growth, and finally assigns it to its proper order and class with others which he knows, and thus determines its true character. But the Infinite and Absolute, it is evident, cannot be thus classified. There can be but one Infinite; our knowledge of its essential nature and attributes must be forever negative. The nature of life and of knowledge alike testify to the fact that we can know only relations. “Life in all its manifestations, inclusive of intelligence in its highest forms, consists in the continuous adjustment of inner relations to outer relations.”† “Every act of knowing is the formation of a relation in consciousness parallel to a relation in the environment.” Beneath this vital tissue of sequences

* *First Principles.*† *Ibid.*

and coexistences we cannot penetrate. The very conception of relativity, however, carries with it the knowledge of the Absolute as existing, and as involved in all phenomenal processes. As we cannot have a shadow without light, so we cannot have the relative without the Absolute: the existence of the one is proof positive of the existence of the other. And since the relations which we know are constant, since the law of cause and effect is universally operative throughout the world of phenomena, our knowledge, though relational, is *real*—as real to us as would be our knowledge of the thing in itself, were such knowledge attainable. In knowing phenomena we do know the noumenon *as it is related to us*.

The materialistic critic of the evolution-philosophy comes to us, indeed, with the assumption that the universe is just what we see it to be, and nothing else. As it is in sense-perception, so it is in its essential nature. Mind itself is material. "The brain secretes thought as the liver secretes bile"—thought itself is a material product. We must assume something, he says: why not assume that the testimony of our senses is final and conclusive? It is evident, however, that this position of the materialist is reached not by a process of thought, but by the negation of thought. He is either incapable of duly considering the problems involved in this discussion, or else he deliberately refuses to consider them, denouncing them as futile and unprofitable speculations. The evolutionist, however, assumes nothing, except the actual facts of experience; his ultimate criterion of truth is the inability to conceive the opposite of the proposition under discussion. The "fundamental assumption" of the materialist is neither logical nor scientific—it is essentially a metaphysical assumption, and illustrates a very crude and primitive sort of metaphysics at that. The evolutionist indulges in no assumptions, falls back on no "first principles," or "axiomatic truths," the origin and history of which he cannot trace in the experience of the race. Every conscious experience constitutes a unit of knowledge, and science is simply the orderly classification and interpretation of such experiences. To science, therefore, the evolutionist appeals—not to metaphysics—and by science is the position of the materialist undermined and overthrown.

Consider, for example, what science teaches us of the

nature of sense-perception. That phenomenon which our minds recognize as sound, science declares to be objectively certain vibrations or waves produced in the atmospheric medium. Between the two orders of phenomena, the external fact and the subjective perception of it, there is no relation of identity—only one of concomitance. One is subjective, wholly,—the other objective; one is mental, the other material. Without an ear, a recipient brain and a conscious mind, the atmospheric vibration might go on forever, and there would be no phenomena of sound. The same principle holds good also in sight. That which to our minds appears as color, externally is the inconceivably rapid vibration of the intangible ether which surrounds and penetrates the atmospheric envelope of the globe. Without the eye, the recipient brain, and the subtle synthesis of thought, the phenomenon of vision were impossible.* And so of the other special senses. But what we call matter is inseparable from these sense-perceptions,—it is made up of them. Take away what we know as form and weight and color and extension, and nothing material remains. It does not follow, however, that the Unknown Reality which caused in us these sensations has ceased to exist. As firmly as we believe in our own existence, do we believe in that of a Reality external to ourselves, and by precisely the same warrant—the unthinkableness of the contrary proposition. To beings constituted differently from ourselves, however, this reality might present an appearance totally distinct from that which we know as matter. To the simplest form of organism, for example, whose consciousness is limited to a single undifferentiated mode of sense perception, those affections of matter which we know as color, taste, odor, sound, extension, would be wholly incomprehensible. The limitation of our own senses, both in number and in range, is entirely arbitrary.† It is quite conceivable that there may be beings

* Maxwell's new magnetic theory of light emphasizes still more strongly the principle here laid down.

† The president of the British Association, Professor Flower, indorses Sir John Lubbock's idea that there may be "fifty other senses as different from ours as sound is from sight; and even within the boundaries of our own senses there may be endless sounds which we cannot hear, and colors as different as red from green of which we have no conception. These and a thousand other questions remain for solution. The familiar world which surrounds us may be a totally different place to other animals. To them it may be full of music which we cannot hear, of color which we cannot see, of sensations which we cannot conceive."

on some other planet, like the resident of Saturn imagined in the satire of Voltaire, with seventy senses instead of five—to whom the universe would present an appearance quite unfamiliar and incomprehensible to our understanding. To the old and ingenious play upon words involved in the familiar and brief philosophical catechism: "What is Matter? Never mind. What is Mind? No matter. What is the nature of the soul? It is perfectly immaterial,"—science and evolution, therefore, enter an emphatic protest. Matter, it declares, is the Unknowable Reality as reflected in mind through the mediation of the senses. Mind is that Reality as it appears directly in the operations of consciousness. It is, so far as we know, inseparable from material conditions; but it is a false logic which therefore infers that it is itself material. You can neither see, feel, smell, taste, weigh, measure, nor chemically decompose a thought. It responds to no material tests. Yet in it lies a power greater than that of the Archimedean lever—a power sufficient to move the world. Of a soul distinct from mind and form, science knows absolutely nothing; but since it also knows nothing of the nature of the Absolute Reality of which mind and form are manifestations, no divine possibility is slain by this admission. Materialism and Idealism both err in assuming that knowledge is absolute instead of relative. Both declare that the universe is just what it appears to be to our senses—refusing, like the Electoral Commission, to "go behind the returns" and investigate the actual character of the suffrage. Materialism assumes that matter is the mould of consciousness; Idealism, that consciousness is the mould of matter. The truth lies between the two extremes, including what is true in both.

The error of Materialism is cruder and more easily refuted than that of Idealism; in view of the testimony of science as to the nature of our sense-perception, it has not a foot to stand upon. In declaring that the Reality which is external to our consciousness is identical and coterminous with that which we know as matter, it bases its whole philosophy on an unverified and unverifiable assumption which is contradicted by the entire testimony of science. But in assuming that there is no Absolute Reality external to consciousness, Idealism is equally metaphysical and unscientific. The question in reality is simply one of physi-

ology — of a scientific understanding of the nature of sense-perception; there is nothing speculative or metaphysical about it, whatsoever.

The Materialist's position in philosophy reminds one of certain crude attempts at art, which, ignoring all sense of perspective, and disregarding the beautiful blending of lights and shadows as we see them in the natural landscape, illustrates a sort of sharply-defined wooden realism, which is as distressing to the cultivated eye as it is thoroughly materialistic in its conception and execution.

The Idealist's position, on the contrary, reminds one of an artist who should eschew the use of vulgar material paint, and attempt to dip his pencil in the prismatic hues of the rainbow. Of the two, it must be admitted that the materialistic painter would produce *something*, though it would not resemble anything that we ever see in Nature; while the idealist would produce nothing, external to his own imagination.*

In the language of Professor Fiske :

“Our conclusion is simply this, that no theory of phenomena, external or internal, can be framed without postulating an Absolute Existence of which phenomena are the manifestations. And now let us note carefully what follows. We cannot identify this Absolute Existence with Mind, since what we know as Mind is a series of phenomenal manifestations: it was the irrefragable part of Hume's argument that, in the eye of science as in the eye of common sense, Mind means not the occult reality but the group of phenomena which we know as thoughts and feelings. Nor can we identify this Absolute Existence with Matter, since what we know as Matter is a series of phenomenal manifestations; it was the irrefragable part of Berkeley's argument that, in the eye of science as in the eye of common sense, Matter means not the occult reality but the group of sensations which we know as extension, resistance, color, etc. Absolute Existence, therefore,—the Reality which persists independently of us, and of which Mind and Matter are phenomenal manifestations,—cannot be identified either with Mind or with Matter. Thus is Materialism included in the same condemnation with Idealism.”†

* That which the Idealist would produce *in his imagination*, however, might be infinitely finer than the crude objective production of the Materialist.

† *Cosmic Philosophy*, Vol. I. The Evolutionist is justified in affirming “the eternity and uncreatability of matter,” which is the datum on which the

This, then, is the conclusion of the evolution philosophy, differing as widely from Materialism on the one hand as it does from Idealism on the other: a conclusion, moreover, to which we are compelled by an irresistible logic from no basis of metaphysical assumption, but from data furnished by science itself, reinforced by that ultimate criterion of truth which bases the postulates of our reasoning upon the inconceivability of their opposites. The ultimate data both for the scientific conclusions upon which the doctrine of the Unknowable is based, and for the laws of thought under the operation of which it is logically established, are given in experience, which is the final court to which the evolutionist appeals.

Philosophical agnosticism, it would appear, therefore, is not identical with materialism; it is not a cowardly philosophy which refuses to think; it is by no means to be confounded with that crude liberalism which dogmatically denies God and immortality. It is antagonistic neither to religion nor to reason; it is antagonistic only to those unverifiable assumptions dogmatically asserted as assured truths, which transform religion into superstition, and philosophic reasoning into idle dreaming and unfruitful speculation. The evolution philosophy affirms the duty of thinking out all intellectual problems to their ultimate conclusions, and asserts the competence of reason to deal with the data given in experience, throughout the entire phenomenal universe of matter and of mind. The universe of matter is infinitely knowable; the realm of mind is infinitely knowable. And in knowing mind and matter we know the Infinite and Eternal Energy on which they depend, in all its possible relations to our own consciousness. It is the duty of man to use and trust his intellectual faculties in the investigation of all matters which come within the scope of his intellect and understanding. All knowledge which can possibly come within the range of our faculties is open to us; hence there is no real loss or privation in the conception that the mind cannot penetrate behind the veil of phenomena. The superficial appearances of things,

physical sciences rest,—meaning thereby that “the Reality which persists independently of us” is constant in its relations, and would always manifest itself *as matter* to a being or beings possessed of a consciousness like ours. The idealistic conception that material objects are creations of the individual consciousness, and have no substratum of real existence which endures when that consciousness is no longer active, is of course inconsistent with all forms of scientific realism, and is therefore rejected by the evolutionist.

when tested by scientific methods, are found to be almost always illusory and misleading. The perception of this fact imposes upon us the sacred obligation to penetrate beneath the surface—to discover the causes and the real relations of phenomena, and to apply the knowledge thus gained to the advancement and betterment of human life.

No realm of thought is thus too sacred for the human mind to penetrate. Into the nature, origin and historical evolution of religion, into the character and history of man's moral sense, into the realms of psychology and of the physical sciences, the reason must search for material wherewith to broaden and deepen the life of man, and enlarge the area of human happiness. Nor is man even forbidden to enter into the lofty regions of speculative thought: only he is bidden to remember that, in exercising his reason upon ontological problems, he can do no more than to create symbols and imaginative pictures of that which is, from the nature of things, in its absolute essence beyond our human ken. Something of gain in the way of mental discipline there is, doubtless, in climbing occasionally into the thin air of these upper regions of speculative research, if by breathing it we do not become intoxicated with the conceit that we are thereby acquainting ourselves with the actual verities of Absolute and Unconditioned Being. Compared with the results of research into the relations of phenomena, conducted according to the scientific method, metaphysical speculation has proved unproductive, unprogressive, and sterile of practical benefits to man. There is no agreement as to results among speculative thinkers. The schools of metaphysics are as numerous as theological sects, and for a similar reason: there is no criterion of truth which all agree to accept.

It is evident that the content and methods of religion as reconstructed in accordance with the principles of science and the philosophy of evolution, will differ essentially from those which have governed and still largely govern the work of the Christian church. Yet in so differing they will, if we mistake not, come nearer to the essential thought of the founder of Christianity. Instead of urging man to an egoistic strife after personal salvation, religion thus reconstructed will bid him so enlarge and cultivate his own nature that he can render the worthiest and most profitable service to his fellow-men. Instead of basing

salvation on dogmatic belief, it will make it a process of moral and intellectual growth—a process of character-building. Instead of repressing the intellect, disparaging human reason, and discouraging free thought, it will bid man remove all shackles and fetters from the mind, to think deeply, to think beyond the superficial appearances of things—to breathe the keen air of the intellectual life with perfect freedom, finding therein an inspiration to the noblest living and most devoted service. Instead of urging man to an emotional spasm of repentance for wrongdoing, it will bid him carefully ponder upon the results of his actions, note the instant effect of an evil deed in repressing fulness of life—in atrophying the character of the doer. It will show him that the penalty of wrongdoing is intrinsic instead of extrinsic—that heaven and hell are conditions of the mind rather than definite localities in space.

It will regard religion as a life rather than a ceremonial or a creed. It will inculcate justice in place of charity. Instead of accepting poverty, ignorance and wretchedness as ordained of God,—as conditions of life to be accepted with resignation and mitigated in some small degree by alms,—it will endeavor as far as may be to abolish these conditions, by rendering the poor self-helpful, by educating the ignorant, and by removing the causes of disease and vice, thus laying the foundations of a nobler individual manhood, which is the only sure basis for a regenerated society.

If we accept Cicero's derivation of the word "religion," its essential meaning is *faithfulness, thoroughness*. This principle of faithfulness evolution will teach man to carry into every department of his thought and labor. The reply of the servant-girl, who had recently united with the church, to the question of her mistress as to what evidence she had of her conversion: "I know I have got religion, because, now, I sweep under the mats," is suggestive of that conscientious element that a rational religion based upon evolution should introduce into human life. Matthew Arnold's definition of religion is, "Morality touched with emotion": a morality lifted out of mere conventionalisms, a morality which will make the employer recognize the humanity of his employee, striving to render him a just compensation for his labor, instead of treating him as a mere money-making machine; which will make the work-

ingman anxious that his work shall be well done, rather than make him strive to do as little as possible for his wages; which shall abolish shoddy clothes and Buddensiek buildings; which shall do away with the adulteration of foods and drugs; which shall create a divine discontent with the "old clothes" of superstition and unreason with which the average man has been satisfied to array his intellectual and religious nature,—this, if not answering to all that we mean by religion, is the natural and consistent product of a Religion of Life. Go into yonder church—select it almost at random, if you please, from any quarter of these two great cities—these Siamese twins whose common artery is our beautiful Brooklyn bridge—and question its members as to the character and meaning of its creed. How many will you find who really know anything about the dogmas which they are supposed to profess and believe—a belief in which, in many instances, is deemed essential to salvation? How many of our city congregations, of whatever sect, would sit patiently and hear the cold logic of Calvinism brought home to their understandings? Against all these duplicities of thought and life, so prevalent in this transition period, the philosophy of evolution enters an emphatic protest, seeing that that only can promote growth of manly and womanly character which is vitally and really appropriated by the understanding, and allowed its legitimate bearing upon the healthful activities of life.

Evolution recognizes the continuity of thought—the solidarity of the race—the indebtedness of the present to the past. It does not therefore endeavor to establish the new truth or the higher social ideal by violent or revolutionary methods. It seeks for the soul of truth in things false—for the soul of good in things evil—seeing that evils and falsehoods are usually goods and truths out of their proper relations. Evil is mal-adjustment. Its correction should therefore be sought by readjustment, rather than by destruction. Evolution would build on the existing good, rather than seek to lay an entirely new foundation. In the church, Evolution beholds an institution capable of bestowing infinite benefits upon mankind; yet as organized and directed in the past, and to a great degree in the present, it has been and is an institution of doubtful utility. It has repressed the individual reason, teaching

its devotees to accept as authority the commandments of pope, or priest, or ecclesiastical synod, or sacred book. It has made the past a shackle upon the present, instead of a help and an inspiration to a larger and more progressive life. It has fostered a morbid and unhealthy other-worldliness, instead of seeking to better the condition of men here and now. It has cultivated a low pretense of familiarity with the person and attributes of the Deity, as it has assumed to define them, instead of bidding the soul stand in reverent awe in the presence of "the Infinite and Eternal Energy whence all things proceed." All these things must be changed if the church would remain a living and progressive force in the individual life and in the ordering of society.

Instead of ceremonies and worship based upon the current anthropomorphic conceptions of the deity, there will arise "observances tending to keep alive a consciousness of the true relation in which we stand to the Unknown Cause, and tending to give expression to the sentiment underlying that consciousness." As to the character and attributes of this cause, the religious teacher, accepting the teachings of Evolution, will not arbitrarily dogmatize. In the language of Mr. Spencer, "duty requires us neither to assert nor to deny that it has personality, but to submit ourselves with all humility to the established limits of our intelligence, in the conviction that the choice is not between personality and something lower, but personality and something higher, and that the ultimate reality is no more representative in terms of human consciousness than human consciousness is representative in terms of a plant's functions." The fact that we stand continually in the presence of this Ultimate Reality, that it is involved in every phenomenal activity, whether of mind or of matter, will however, be kept continually before us. The use of the term "Unknowable," as applied to this Reality, is unfortunate if thereby it conveys the idea of that which is practically or actually non-existent,—a superficial interpretation of Mr. Spencer's doctrine with which we are frequently assailed by his self-constituted critics, but against which he everywhere carefully guards himself, to the understanding mind. As he himself declares: "the Ultimate Reality is the sole existence; all things present to consciousness being but shows of it."

In the words of an able popular interpreter of the evo-

lution philosophy: "The agnostic minister will be chiefly a moral educator; but while discussing ethical questions, which must of themselves exert a highly elevating influence on his hearers, he will, at the same time, have ample opportunity of ministering to their spiritual needs by appropriate references to the mysteries of cosmology, either for the purpose of quickening the religious emotions and reinforcing the religious consciousness, or with a view to emphasizing some moral lesson which he may wish to bring home to the hearts of his hearers. Thus will man's conduct be influenced in the right direction. On the one hand, the necessity of leading a moral life will be impressed upon him; on the other hand, he will be led to reflect upon that inscrutable power whose marvelous energy reveals itself in a universe of wonders—a power which, though indefinable, nay inconceivable, is yet as real in its existence as it is unknowable in its attributes."* Though incomprehensible, this power is apprehensible; though unknowable in its essential nature and attributes, it is known as existing, known as infinite and eternal, known as the Energy from whence all things proceed, and known symbolically in its relations to man and to the phenomenal universe. This knowledge satisfies every legitimate hunger of the heart and mind. The attitude of the mind, therefore, in contemplating the Infinite Source of phenomena should be profoundly reverential and worshipful; yet its truest service will be found in no ritual or stated ceremonial of religious worship, but in the active and intelligent service of man. And in and through this service, making life itself seem ever grander, more precious, more beautiful, there may grow up in the mind a rational hope for personal continuance hereafter, to supplant the dogmatic assurance of the old theology, in which, as inculcated by the Christian church, thoughtful minds are everywhere coming to have a less and less confident belief. Evolution teaches the essential goodness and desirability of life; and on this foundation, if on any, a rational hope of immortality must finally be based. In this direction the healthy emotions of a rational mind are entitled to have free play, "so long as they do not trespass upon the domains of the intellect."

*The Moral and Religious Aspects of Herbert Spencer's Philosophy. By Sylvan Drey. (London: Williams & Norgate. Boston: James H. West, Publisher.)

Whether this hope in individuals be vivid or dim will probably be largely a matter of temperament and predisposition; but it will doubtless be even more dependent upon the lively comprehension of this fundamental doctrine of biological evolution—the doctrine of the essential goodness and desirability of life itself.

From what has heretofore been said, it is evident that Evolution, whether regarded in its philosophical or in its religious aspects, will largely interest itself in the practical problems of sociology—in the promotion of more active and more widely extended human sympathies, in the elevation of the poor, the vicious and the down-trodden—thus extending the boundaries and the satisfactions of life not only among the remote and barbarous populations of the earth, but also, primarily and correlatively, in each individual member of society. The word “sociology,” as applied to the science of society,—or its French equivalent,—is, I believe, the invention of Auguste Comte; but the credit of working out this science of society, from strictly scientific data, into a natural and comprehensive system, is due, more than to any one else, to Mr. Herbert Spencer. It is to this study, most vital in interest and importance to every human being, that this series of lectures will direct our attention.

Whether or not society may be properly termed “an organism,” in the strict sense in which the individual products of biological evolution are thus designated, it certainly bears a close relation to them in many important respects, and especially as to the character of its process of growth. As compared with the development of inorganic materials, which grow by simple accretion or addition to their bulk, organic substances grow by intussusception—a process of waste and repair which reaches every particle throughout their internal structure. In this respect the growth of societies resembles that of organic substances; it is a sort of vital chemistry. All actual and permanent enlargement of society proceeds from the voluntary co-operative action of individuals. Affection and self-interest are the attractive forces which weld society together, and these forces operate directly in and upon individual minds, throughout the social structure. The death of individuals, and the birth and growth of others to fill their places in society, proceeds in like manner with the processes of waste and

repair in organic structures. There is such an intimate relationship between biological and social studies, that some knowledge of the laws governing biological growth is necessary to fit one for forming correct judgments on sociological problems. Biology and sociology both treat of the phenomena of life—both involve psychological as well as merely physical conditions—the one leading up to the other by an entirely orderly and natural process of development. Evolution shows that the phenomenal universe is “all of one piece,”—and in its unity of method symbolizes an essential unity of Being, which, if we may not directly affirm it as a demonstrated fact, at least constitutes the most satisfactory and rational theory of the nature of things.

In this higher field of sociological study, how many and varied are the problems that are presented for our investigation—the profoundest, most deeply interesting of any which the human mind can attempt to solve; for they are problems which concern the origin, the essential character, the temporal and final destiny of man as an individual, and of Man as a race. Without attempting to forestall the solution of any of these problems, I may, in conclusion, state negatively the attitude of the evolution philosophy toward sociological studies.

I. Evolutionists have no special schemes for social reform to urge upon society. They regard all earnest efforts for the amelioration of existing social evils and inequalities, with sympathy and appreciation, but insist that the various “rapid transit” plans for achieving these much desired ends shall be rigidly examined in the light of social science, and not be too hastily accepted for all that their originators claim them to be. Evolutionists realize that “Nature does not advance by leaps,” and they would carefully note the trend of past events, and study the nature of individual man in history and in connection with his present institutional environment, before urging him to a definite, forward step, in a direction contrary to that which he has been pursuing. To the Evolutionist, the *a priori* scheme of the social reformer bears a certain resemblance to the philosophical system of the metaphysician, and, like the latter, he thinks the former should be submitted to the test of the experiential method.

II. In urging the study of Man in his historical relations, however, evolutionists do not claim that society should take no forward step, or that man should simply imitate or repeat the past. An able student of social and economic problems, Prof. Wm. G. Sumner, a gentleman whose abilities I admire and with many of whose conclusions I agree, in an article entitled "What is Civil Liberty?" in a recent number of the *Popular Science Monthly*, makes the remarkable statement that the doctrine of man's natural liberty is a "dogma," of purely metaphysical origin, and asserts, in italicised phrase, that "*that dogma has never had an historical foundation, but is the purest example that could be brought forward of an out and out a priori dogma.*" "The doctrine of evolution," he adds, "instead of supporting the natural equality of all men, would give a demonstration of their inequality; and the doctrine of the struggle for existence would divorce liberty and equality as incompatible with each other." "Civil liberty," he says elsewhere, "is not a scientific fact. It is not in the order of nature"; and all these startling assertions he makes *in defense* of the doctrine, the natural foundations of which he arbitrarily endeavors to undermine.

To the evolutionist it is quite evident that if the learned Professor was as well instructed in biology as he is in theology, metaphysics and the *a priori* discussions of political economy, he would quite otherwise interpret the sociological teachings of Evolution. He is but a poor student of natural science, indeed, who would simply content himself with learning facts, without endeavoring to trace their relations, to study their causal connections, and therefrom to draw prophetic inferences to guide his future investigations, to interpret underlying laws, and thus enable him to push forward to new discoveries.* To say that Evolution "does not point toward civil liberty" because communities of men have never existed completely under its beneficent sway, is to cut away from scientific research that very synthetizing and prophetic quality which is its noblest and

* If the doctrine of man's natural liberty is only a "dogma," as the Professor declares,—a mere speculative ideal, and nothing more,—then it is idle to pursue such a chimæra, or to base upon it a social philosophy. But if it is a condition of social equilibrium, toward the realization of which man has been working throughout all the stages of social development, then, like the moral law, it is discoverable through experience and historical investigation, and is strictly "in the order of nature," though not as a completely realized ideal in society.

most fruitful characteristic, and has been the foundation of all advancement, invention, and discovery, from the birth of modern science throughout the entire history of its magnificent achievements. The history of the past gives us pointers for the future—and they point always away from the crudities, errors and failures of the past, in the direction of an ideal perfection. In all evolutionary progress, Nature moves along the lines of the least resistance, and these lines are not usually discovered by the use of metaphysical divining-rods, but by patient, unbiased, persistent investigation. Myself a firm believer in the advantage and necessity of a larger commercial liberty between nations, I do not believe that the beneficence of this principle will ever be brought home to the convictions of the people by *a priori* theorizing. The sooner our Economic professors and social reformers appeal to the facts and lessons of experience, instead of to metaphysical dogmas, and adopt the method of Evolution in place of that of speculative theory, the better it will be for the reforms which they advocate.

The method of Evolution, as the name indicates, is in its very nature progressive. Evolutionists know that there is no such thing in nature as absolute quiescence: we must have either the activity of progress, or the activity of retrogression. The one leads to a higher and more perfect life—the other to dissolution and death. Let us see to it that *we* choose the way of progress, and of *Life!*

“ The outworn right, the old abuse,
The pious fraud transparent grown,
The good held captive in the use
Of wrong alone—

“ These wait their doom, from that great law
Which makes the past time serve to-day;
And fresher life the world shall draw
From their decay.

“ O backward-looking son of time!
The new is old, the old is new—
The cycle of a change sublime
Still sweeping through.

“ So wisely taught the Indian seer:—
Destroying Siva, forming Brahm,

Who wake by turns earth's love and fear,
Are one — the same.

“As idly as in that old day
Thou mournest, did thy sires repine.
So, in his time, thy son, grown gray,
Shall sigh for thine.

“Yet not the less for them or thou
The eternal step of Progress beats
To that great anthem, calm and slow,
Which God repeats !

“Take heart ! — the waster builds again —
A charmed life old Goodness hath ;
The tares may perish — but the grain
Is not for death.

“God works in all things ; all obey
His first propulsion from the night ;
Ho, wake and watch ! — the world is gray
With morning light !” *

* Whittier, “The Reformer.”