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JOURNAL OF

# THE TRANSACTIONS

OF

# The Victoria Institute,

OR

## Philosophical Society of Great Britain.

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The CHAIRMAN :—Before the paper to be taken this evening is read, I would venture to remark that attacks in the name of Science upon the truths of the Christian Religion have been fewer of late ; it would seem as though those who sought to drag science to their aid in attacking religion are getting less united, and are beginning to find that their scientific theories are but theories, and that they are irreconcilable one with another ; in fact that their Science is as uncertain as they would make out our Revelation to be. The great strife between Haeckel and Virchow is fresh in our memories, and I fancy the rift that has shown itself there may not be confined to any particular branch of scientific inquiry. Four or five years ago such people spoke of the Scriptures as an old book which intellectual people had agreed to scatter to the four winds, as being unreliable ; they are now beginning to moderate their tone and recognise that those who regard the Scriptures as true are worthy of respect, and may after all not be so entirely in the wrong, or so unscientific ; and in bringing this about I would fain believe that this Institute, which in a few years has grown from a Society of 200 to one of more than 800 members, has borne some part.

The following paper was then read by the Rev. T. M. GORMAN, M.A., the author being unavoidably absent :—

## *PHYSIOLOGICAL METAPHYSICS.* By NOAH PORTER, D.D., PRESIDENT OF YALE COLLEGE, UNITED STATES.

THE phrase Physiological Metaphysics is selected simply for precision, because no other expresses our meaning so well. We do not intend by it any single or special science, as when we speak of the science of mechanics, or optics, or chemistry, or geology, or of any other subject-matter, whether physical or psychical. Nor do we use the word collectively for the systematized or interpreted knowledge of several classes of objects, as when modern science is spoken of, and usually though improperly made to include only those sciences which have matter for their sphere. We believe most fervently in science, in each and all of these senses; we rejoice in its progress ; we confide in its methods, and are not afraid of the direct or indirect results or any of its discoveries concerning man, the universe, or God. We loyally accord to it independence and supreme authority within its sphere.

Nor do we intend by it physiological science, or that science

which has life and living beings for its sphere of inquiry. This science we delight in, most of all the sciences of nature, for the reason that the scientific study of life is the best preparation for and the best introduction to the study of the soul, inasmuch as it effectually disciplines man to do justice to psychical phenomena and all the beliefs and relations which they involve, by first confronting him with the mysteries of life, and then introducing him to those higher phenomena of conscious experience and activity from which these are yet sharply distinguished.

We would not be suspected for a moment, by the use of this phrase, of throwing any discredit upon metaphysics proper; which term and the science which it designates both need all the good words which can be said of them in the evil days of criticism and disesteem on which they have fallen in many so-called scientific circles.

We believe in metaphysics or philosophy, both in the narrow and the enlarged conceptions of the same, whether the words signify the conceptions and principles which must be assumed as the foundations of every special science, or whether they stand for a still more extensive sphere of truths concerning man, nature, space, time, and God, which are partly necessary and partly inductive. We would not therefore be understood as calling in question metaphysics as such, or of availing ourselves of any general disesteem in which the term is often used to the damage of that form of speculation which we have in mind, and which we call metaphysics by eminence.

Our theme is physiological metaphysics. We call this science metaphysics because it proposes a system of ultimate formulæ for the explanation of the origin and history of the universe, which it uses as the clue to our scientific knowledge of the same. We call it physiological, because the special science of physiology has furnished its distinctive conceptions and principles, and fixed its terminology. Its representatives and defenders have stigmatized much of the current metaphysics as theological, on the assumption that in some sense it had illegitimately borrowed its principles and methods from positive or Christian theology. With much greater propriety we may use the phrase physiological metaphysics of a system in which physiological relations are made supreme, and for which to a large extent they have furnished the terminology. We do not object to the recognition of physiological conceptions in the domain of metaphysics. Every science, so far as its subject-matter is unique and furnishes conceptions and relations that are peculiar to itself, must have what we may

relatively call a metaphysics of its own. Accordingly, we speak with entire precision and propriety of a mathematical, a chemical, and a physiological metaphysics. Used in this sense the term has a legitimate signification. Nor do we in the least except against the recognition of development or evolution as a legitimate conception or law in any class or sphere of phenomena, so far as its presence and agency are sustained by observation or verified by experiment. The true philosopher will as rationally and as readily believe in development or evolution, either as a force or a law, as he will believe in mechanical adhesion or chemical combinations, or the laws which govern either. He will not even object to the explication of any number of phenomena by means of evolution, provided the evidence for this application is satisfactory and the experiments are decisive. Nor will he object to relying on analogy as a ground of believing in evolution beyond the range of observation or experiment, provided the data of facts are sufficiently numerous, and the analogies compel to this sole conclusion.

It is only when *evolution* or development is taken out of its definite and legitimate applications within the domain of life, and extended to every description of beings and phenomena, from the inorganic on the one hand to the self-existent on the other, that we question the warrant for applying the relation so widely and to a subject-matter from which it is wholly foreign. That a form of metaphysics is current, which in the sense defined may properly be called physiological, cannot be questioned by any person who is superficially acquainted with the philosophizing of our times. Its growth has been rapid and its development has been, to use its own favourite term, almost as sudden as was the first rushing of star-dust into the first solid orb. The elements of which it is composed are singularly incongruous, and the writers who have contributed to its popularity and its acceptance are strangely unlike. Some of the principles and philosophies which it has contrived to subdue to its own vital power are seemingly irreconcilable, and yet they all have been gathered somehow into a common school of thought, which is regarded by many as mechanical, materialistic, and atheistic on the one hand, while it claims on the other to do full justice to the phenomena of spirit and the mystery of the Infinite. The menstruum which it employs as a solvent for these apparently unrelated and intractable elements is its doctrine of life. Whatever may be the defects or incongruities of this bold and sweeping theory, whatever are the dangers it brings to faith and morals, to social order and religion, it hides in part by the elevated associations which

the mystery of life never fails to suggest. Development and evolution have become terms convenient for the enchanter or juggler to conjure with in the haunted caves of metaphysical subtlety; and it would seem at times as though, whether it be enchantment or jugglery, the first victim of either is usually the operator himself.

The writers who have most effectually contributed to the maturity and exposition of this system are, Mill the father and Mill the son, Alexander Bain, John Tyndall, Thomas H. Huxley, Charles Darwin, Herbert Spencer, George H. Lewes, and John Fiske.

Besides these we ought not to overlook the crowd of naturalists, both the solid and romantic, who, having accepted the evidence for evolution within certain limits, are ready to extend it indefinitely over all regions of knowledge that are unfamiliar to themselves or in their nature not easily grasped, and are content to make it the substitute for the absolute, the infinite, and the living God. Were we to assign to each of these writers we have named the element which he has contributed to this new metaphysics and the agency which he excited, we must needs write a careful criticism and a philosophical history of the theories of each of these eminent men. It will be enough to say that James Mill's bald and yet half-digested sensationalism; John Stuart Mill's exposition of induction, his Comtian theory of causality, together with his necessitarian and sociological ethics, and his doctrine of associationalism as contained in his criticism of Hamilton; Alexander Bain's gross physiological cerebralism, and his thorough-paced associationalism, in which he surpasses even Stuart Mill himself; Thomas H. Huxley's doctrine of protoplasm as the physical basis of life; Michael Faraday's brilliant suggestion of the correlation of force, confirmed by numerous experiments on the part of careful followers, which has been so brilliantly expounded and so daringly applied by the eloquent John Tyndall; Charles Darwin's doctrine of the origination of species by the law of natural selection under the conditions of a favourable or hostile environment, and his doctrine of heredity as subsequently enounced; Herschel and Laplace's nebular hypothesis; the Kantian doctrine of the relativity of knowledge as interpreted by Hamilton and applied by Mansel —were all more or less distinctly before Mr. Herbert Spencer when he matured the romantic generalization by which he explains the generation of the universe of beings—mechanical, physical, spiritual—under the formula of development or evolution, and assumed for it a steady and continuous progress from the simple to the complex, attended by a constant ten-

dency to integration, which gives relative permanency to its transitory phases. This law he makes to extend to every thing which exists and to every event which occurs; to beings material, vital, spiritual; to every occurrence or change which befalls them; to the gathering of the cosmical masses, and the falling of a sparrow; to the suggestion of every thought, and the inspiration of every emotion: it even holds of the subtle relations which underlie all science, and declares that these are first evolved by manifold experience, then hardened in the brain by the repeated blendings or consentient activities of many brain-cells, and finally transmitted as the necessary forms and regulators of the psychical—*i.e.*, cerebral—activities of subsequent generations. The system thus perfected has been expounded in more or less detail by not a few zealous disciples, who have now and then sought to apply it with greater exactness than their master. It has been accepted in part by some who would hesitate to assent to it as a whole, but who nevertheless confidingly reason as though the formulæ of evolution were the ready solution of many a problem, and find in continuity, heredity, and development the keys which open many a lock. It is not essential to follow it in detail in order to judge of its characteristic peculiarities. We are only concerned to show that the metaphysics which makes such magnificent claims, and in one sense has reached such magnificent proportions, is essentially physiological in its fundamental conceptions. This is distinctly asserted by Mr. Spencer himself.

"And now let me point out that which really *has* exercised a profound influence over my course of thought. The truth which Harvey's embryological inquiries first dimly indicated, which was more clearly perceived by Wolff and Goethe, and which was put into a definite shape by Von Baer—the truth that all organic development is a change from a state of homogeneity to a state of heterogeneity—this it is from which very many conclusions which I now hold have indirectly resulted. In *Social Statics* there is everywhere manifested a dominant belief in the evolution of man and of society. There is also manifested the belief that this evolution is in both cases determined by the incidence of conditions—the actions of circumstances. And there is further, in the sections above referred to, a recognition of the fact that organic and social evolutions conform to the same law. . . . . The extension of it to other kinds of phenomena than those of individual and social organization is traceable through successive stages. . . . . Afterwards there came the recognition of the need for further limitation of this formula; next the inquiry into those general laws of force from which this universal transformation necessarily results; next the deduction of these from the ultimate law of the persistence of force; next the perception that there is everywhere a process of Dissolution complementary to that of Evolution; and, finally, the determinations of the conditions (specified in the foregoing essay) under which Evolution and Dissolution respectively occur. The filiation of these results is, I think, tolerably

manifest. The process has been one of continuous development, set up by the addition of Von Baer's law to a number of ideas that were in harmony with it."*

This distinct avowal would decide the question, if any question were possible, that the relations which are characteristic of Spencer's system are prevailingly physiological.

Whether Spencer's view of what life is, and of its genesis and conditions, may not be seriously defective, we shall not at present inquire; whether he may not have formed an inexact and superficial view of development itself, as held by Goethe and Von Baer, or made an illegitimate and unauthorized application of the term as understood by them, we need not ask,—it is enough for us to know that the conception as at present employed was derived from the processes of life, and was originally limited to the sphere of organic existence. While we take Spencer as the representative of the extremest views, we know that multitudes agree with him in holding the physiological metaphysics who would shrink from making so bold an application of the principles which they involve. But we think it not unjust to subject to the same test the principles which they all hold in common.

This system claims to be the apotheosis of science and of philosophy, in that it has brought it to its final culmination and its ultimate possible perfection. As such it asserts that it has invested the universe with the radiance of a single interpreting formula, and has penetrated its darkest abysses with scientific light. It resolves all the phases of its past, tracing them in order from the beginning when star-dust was found to be moving out of chaos from a rarer to a denser medium, on to the end when all the possible cycles of development having been completed, and every stadium of progressive integration and differentiation having been accomplished, the ultimate particles shall be released from these bonds, when the scene is to shift, and star-dust somehow shall reappear on the arena passing from a rarer to a denser medium, and the cycle of development shall again be renewed.

We do not propose to enter into an extended discussion of this system. We are well aware that the public, for several reasons, are weary of these minute and extended criticisms. Prominent among them is this: that few persons are so familiar with each of the several lines of argument in which lies its strength if it be true, and its weakness if it be false, as to be

* Essay on Reasons for Dissenting from the Philosophy of Comte, appended to an Essay on the Classification of the Sciences. Pp. 46, 47.

able to judge of any considerable number. Fewer still are competent to pronounce upon the relation of each part to every other, and the cumulative force of all as they bear upon the grand conclusion. What is within the sphere of each man's specialty he can understand. What is derived from the sphere of another's observation or thought he must take in some sense upon trust. The general similarity between the several relations and facts of the several spheres any man can vaguely appreciate, and hence the generalizations of the theory seem plausible at their first impression, though the impression is vague, and perhaps because it is vague. Meanwhile the confiding student trusts to the brilliant suggestions of the confident theorist and his more confident asseverations. So long as he is in the attitude of a learner, the path is easy; but so soon as he is summoned to the duty of the critic his task is difficult and irksome, because he must of necessity pass judgment upon subject-matters with which he is not familiar, and in respect to which he feels that he is incompetent to act as a judge. That many physiologists should favour a system of philosophy which finds development everywhere is not very surprising. That those who are not physiologists in special should at first hesitate, and know not what to say, and then be dazed by the imposing plausibility of the generalizations which they cannot fully appreciate, and finally relapse into a "silence which is taken for consent," seems at first thought surprising, but on second thought is altogether natural. Explain the fact as we may, the theory takes captive many a general student and otherwise critical thinker simply because he is unable to reply to the reasonings on many points which are out of the range of his studies. And yet the breadth of the generalizations, the confidence with which they are urged, the nonchalance with which difficulties are surmounted, the vast number of facts which the expounder has at his command, the ease with which he marshals them under groups, and, above all, the mysterious fascination with which the phenomena of growth and change are invested to every imaginative mind—all these account, in part, for the unquestioning acceptance of the theory by many quick-minded thinkers who would confess themselves altogether disqualified closely to scrutinize its claims. It is obvious that those who, for the reasons given, cannot understand the arguments for, are disqualified to understand the arguments against, and hence special and minute criticisms of these pretentious and portentous theories attract attention from but few.

There is one line of argument, however, which is accessible to every mind. It concerns itself with the relation of this

theory to the certainty and the trustworthiness of science itself. If it can be clearly proved that the physiological metaphysics by its own showing is fatal to the authority and trustworthiness of knowledge itself in all its forms, and especially in the processes and the conditions which are essential to science, it would seem that a system which had claimed for itself, and had seemed to many to be the apotheosis of science, has committed theoretical suicide. It is our purpose to show this by arguments and illustrations which are open to the understanding of any one who is capable of judging of subjects of this kind, or will be likely to be interested in the question. So far as the teachings of this system are concerned with the authority of and trustworthiness of science, they relate to four distinct topics—viz., *the process of knowledge, the agent in knowledge, the conditions of knowledge, and the sphere of knowledge*—whether this last be the finite universe or the something more, called the infinite, the absolute, or God.

(1.) We begin with the process of knowledge, because science as a process is a form of knowledge which passes into a product. It is also, as process and product, one of the highest and noblest. Any view of the process which is seriously defective in any particular must vitiate our conceptions of the product by weakening or destroying the grounds of our confidence in the structure which it builds for us. A fatally defective or inconsistent theory of knowledge must be suicidal to science. It is then a matter of fundamental interest to know what the physiological view of knowledge must be according to the theory of the evolutionists, and what it is defined to be by themselves.

We ask, first, what it must be according to the theory of the evolutionist? We answer it must be a phenomenon resulting from the differentiation and integration of two preceding phenomena less complex than itself. We may not refer to a knowing agent as its sole originator, because such an agent that exercises the function of certainty and distinguishes it may be the object known from itself, the knowing spirit, is an inadmissible conception. Evolution recognizes no single agent in any process. It requires at least two simpler forms or phenomena, *i.e.*, modes of the unknown and unknowable force. These must interact, as seed and sunshine, as the nucleus and protoplasm, as nerve-cell or stimulant, in such a way as to evolve a *tertium quid* different from and more complex than either. Let us suppose that a phenomenon of this kind, thus evoked by its consenting forces, and sustained in being only

so long as they conspire in energy, has reached so high a position of differentiated integration in a happily-constituted and thoroughly-cultivated brain, as to take the form of a completed theory of evolution. The theory is demonstrated to the mind of an ingenious philosopher. In scientific language, it floats in a delightful equipoise of consilient if not jubilant brain-cells in the roomy head of its forever famous originator. It also finds entrance and makes place for itself in very many other nervous organizations sufficiently differentiated to give it an answering response of favour. As long as these agencies continue in this happy and consentient reaction, the science of evolution is accepted as true. But the progress of development by its own showing can never rest. No more can any process which we commonly call certainty or conviction of truth, the exciting agents which in the vulgar speech men call evidence, but in scientific nomenclature we must call highly differentiated and compactly integrated nerve-cells, which represent the theory to be received and the responsive molecules which in common speech are unphysiologically supposed to represent a conviction of its truth—neither of these agencies can linger long in the happy condition of equilibrium which they have attained. Under the onward and upward pressure of manifest destiny, they must proceed to other integrations and differentiations which, whether they be beings or phenomena, must be unlike those which have preceded them. That phenomenon which may remain for a while—call it certainty, conviction, knowledge, science—long enough to buoy up the magnificent theory of evolution, according to the theory and under the operation of evolution itself, can have no permanent existence, and of course no final and universal authority. Or if certainty is still accorded to the lower rank of agencies just left behind, the knowledge and the truth, the subjective conviction and the objective reality, may both be superseded by some other combination of agencies which is totally unlike that which has previously come into being. This is no caricature of the theory, but the strictly scientific application of its principles. For according to its teachings every thing is phenomenal, even the function of knowledge itself. Every phenomenon is brought into being and sustained in being, and is what it is as a being, by the consentient action of the agencies which are concerned in its production. Behind every act of knowledge and into every act of knowledge the whole universe of force somehow appears. What the phenomenon is must depend on the character of the agencies from which it is evolved. If the agents change in their so-called constitution, the reactions must change with them. This must be

true of all the forms of knowledge from the lowest to the highest. It must be pre-eminently true of the highest as yet attained by man, the knowledge which is science and which gives science.

Should this view of the matter strike any of our readers as singular and strained, it must be because they have not reflected on the reach and import of this theory of evolution when it is applied to the function of knowledge. The function itself, as we know it in our experience, is so totally unlike anything of this sort that we cannot believe that any theory can teach so defective a conception of its nature as the one we have described. Or it may be we carry the convictions which we derive from our conscious exercise of the act of knowledge over into our interpretations of the consequences which any theory would logically involve. It must also be confessed that the language and representations of much if not of most of our English psychology give more or less sanction to those views of knowledge which the physiological metaphysics have only carried to an extreme in one direction, which they somehow have thought to correct in the other by introducing from the world of life the more elevating conceptions of development. It is notorious that the drift of English psychology since the time of Hobbes has set very strongly in the direction of the passivity of the mind. The well-known fact that in sense-perception physical agents or objects must act upon the sense-organs and the sensorium, in order that the material world may be known and the prominence given to the operations of the passive memory and imagination in the cerebral and associational schools, have sanctioned these gross misconceptions of the nature of knowledge itself. These in turn have prepared the way for theories which conceive the act either as an effect produced by the object known upon the knowing mind—in this reversing the order of nature and of experience, or represent it as a function in which the object and mind coact, the result being the outcome of their conspiring energies, as when the ball follows the diagonal between two impulses at right angles to one another, or as oxygen and hydrogen are developed by union into water. The leading evolutionists who venture any opinions on psychology do not hesitate to avow the grossest explanations of the mental processes which are matters of the commonest experience. Both Mr. Spencer and Mr. Huxley go so far as to accept the doctrine of Hume that the processes of knowledge are best expressed by Hume's "impressions and ideas," and seem to be sublimely unconscious that anybody who presumes to be a philosopher can hesitate to accept these as the last words upon the subject. These gross misconcep-

tions are not relieved from their logical consequences by being clothed in the more attractive garb of development or evolution, which is borrowed from the sphere of life. Especially if development itself is conceived as a progress from lower to higher potencies of mechanical aggregation, beginning with a crystal and ending with a spirit. Development suggests associations which are elevated and spiritual. For this reason it can be used more readily to dispute and dignify mechanical relations and laws. It suggests the variety, the resources, the beauty, the intelligence, the joy, and the rapture of living beings. It is invested with the associations of mystery, of independence and of self-reliance, which are connected with living beings, even of lower types. These associations serve very largely to explain the otherwise inexplicable fact that evolution, even when it has become atheistic or agnostic in its philosophy, has entered so easily and been entertained so graciously in scientific circles which are high in moral tone and devout in religious aspiration.

It is more than probable that the construction which we have placed upon the evolutionist theory of knowledge as necessarily suicidal to science, will be regarded as forced and unfair. The *reductio ad absurdum* from the logical consequences or consistencies of a definition or theory, though acknowledged to be theoretically just, is often rejected as practically unfair, especially if it can be urged that the advocate of a theory may perhaps not accept the definition or the construction which the critic imposes upon the doctrine which he assails. The defender or looker-on will not unfrequently interpose in the interest of fair play, and insist that the representative of the theory assailed shall be allowed to define and apply his own conceptions. It is always courteous and usually just to concede this claim. In the present instance the demand can be readily met, and the challenge may be most gratefully accepted. We have in his own language the theory of knowledge which is accepted and expounded by the great advocate of physiological metaphysics.

In Herbert Spencer's *Principles of Psychology* (Introd., c. v., vi., vii., part ii., chap. i.), this theory may be found by any person who will use the patience to search out its fragmentary and loosely-scattered elements, and carefully adjust them into a coherent whole. At first the concession is made, and as it would seem with astonishing *naïveté*, which almost wins the heart of the critic, not only that psychical phenomena are known by conscipusness or introspection alone, but that science can neither discern nor prove any connection between them and any changes in the organism. After this naïve con-

cession of Mr. Spencer, which sends us to consciousness as the sole and final arbiter of what it is to know, he robs it of all its authority by asserting that even in sensation all that we can know of the relation of the changes in the nervous organism to its related conscious activities must be learned through the light which is thrown upon the operations of evolution in other spheres of being. This is at once to set aside the final testimony of consciousness in respect to the lowest form of knowledge in sense-perception, by referring the decision to a metaphysical or physiological theory. It is to set up a theory which professes to be founded on facts that are confessed to have no possible relation to the facts in question, to settle questions of fact and experience which are asserted to be utterly unlike those from which the induction is derived.

What the conclusion is which he reaches from this induction is very clearly though very indirectly stated thus: "Though accumulated observations and experiments have led us by a very indirect series of inferences to the belief that mind and nervous action are the subjective and objective forces of the same thing, we remain utterly incapable of seeing and even of imagining how the two are related" (§ 56, *Principles of Psychology*). This conclusion being reached, the author proceeds to show how they are related in sense-perception, *i.e.*, how knowledge may be developed from or expressed in terms of nervous action. "Knowing implies something acted upon and something acting upon it." "That which in the act of knowing is affected by the thing known, must itself be the substance of the mind. The substance of the mind escapes into some new form in recognising some form under which it has just existed." He then argues that what seem to be the simplest sense-perceptions—*i.e.*, alterations of the substance of the mind or subjective phenomena of nervous activity, as of sound, cannot be simple because we speak of their quality, *timbre*, volume, &c., mistaking here an ultimate or indecomposable experience of consciousness for the several relations which it may have to other experiences or acts. As we cannot find in consciousness the simplest element of this really complex experience we must look for it elsewhere. We finally find, or conclude, or conjecture, that it must be akin to a simple "nervous shock." We next find or infer that many simple nervous shocks are the essential counterpart or objective side to which the simplest experience of consciousness in sensation corresponds. We conclude, then, that "the nerve-pulses and the pulses of feeling clearly answer to one another, and it can scarcely be doubted, that they do so throughout." If next we apply to the teachings of chemistry concerning matter in

order to gain light as to the way in which these complex pulses of feeling may be accounted for, we find that complex and dissimilar material agencies are produced from various combinations of simple particles, and that in the last analysis the so-called simple substances are built up of various combinations of one primordial form of matter. This leads us to conclude by analogy that "the multitudinous forms of mind known as different feelings may be composed of simpler units of feeling, and even of units fundamentally of one kind." To the objection that this would obliterate and set aside the distinction between mind and matter, the author replies that, as we know nothing of the essence of either it is of little consequence whether we define the phenomena of matter in terms of mind or the phenomena of mind in terms of matter. Upon this we make the single comment that whether this be so or not it is of the utmost consequence that that process or operation which we usually call knowledge—the process by which science is built up and upon the trustworthiness and authority of which science depends—should be rightly conceived. If knowledge, when rightly interpreted, is resolved into a series of nervous shocks to which correspond a series of experiences that are felt, we cannot but inquire what meaning or authority is there in the shocks and accompanying feelings that are expressed in the words, "I know by analogy or believe that the doctrine of evolution is true;" or what assurance we have that what we call our present conviction on this subject, which we are informed is rapidly becoming the accepted creed of the present generation, will be retained in the generation that is to come after?

Our misgivings are increased as we follow Mr. Spencer's analysis of knowledge as experienced in consciousness. "The proximate components of mind," he tells us, "are of two broadly contrasted kinds—feelings and the relations between feelings." We accept this without either questioning or criticism, as being the equivalent of the mind's conviction that Mr. Spencer's doctrine of evolution is true—*i.e.*, it apprehends certain conceptions in certain relations—the conceptions being the subject-matter, the relations being the discovered truth or probability of this subject-matter. We are almost overjoyed by the anticipation that we are to learn at last what he thinks of the operations of the higher intellect in discerning relations. It is a commonplace with other philosophers, and pre-eminently with all modern scientists, that the relations of phenomena are all with which science concerns itself; that the higher intelligence is employed solely in discovering and comparing them. We turn over the leaf with eager if not with agitated curiosity,

to learn what the physiological metaphysics have to say upon this point. We scarcely pause to notice Spencer's definition of the feeling as giving us the materials between which relations are discerned. We observe in passing, however, that "a feeling, as we here define it, is any portion of consciousness which occupies a place sufficiently large to give it a perceivable individuality,"—*i.e.*, in common speech it is the act of apprehending the minutest element or object that can be distinguished. But what is a relation as of likeness, or identity, of causation, or adaptation or end? What and where does the mind find these subtle links of significance by which facts —called feelings by Spencer—are connected together into those combinations and grow into those structures which men call science, chief and noblest of which is the science of sciences, the physiological metaphysics, of which Development is the charmed word? Listen to the answer: "A relation between feelings is, on the contrary, characterized by occupying no appreciable part of consciousness. Take away the terms it unites and it disappears along with them, having no independent place, no individuality of its own. It is true that under an ultimate analysis, *what we call a relation proves to be itself a kind of feeling—the momentary feeling accompanying the transition from one conspicuous feeling to an adjacent conspicuous feeling* (§ 65, *Principles of Psychology*). Here we have the key to the physiological metaphysics! The acts of discerning relations, the related objects, and the relations discerned are feelings. The sublime interpretations of the scientific mind, such as Kepler, and Newton, and Davy, and Faraday, and Kirchhoff have now and then achieved, and which have elevated them to such triumphant joy as only befits a moment of divine inspiration, and the analogies which they have discovered and applied — these, physiologically explained, are brief, inappreciable, and yet faintly appreciated emotions in the transitions from one feeling to another. But what is science if it rests on relations which are conceived after this fashion? Let the student of her history who knows what science has done and is now doing, ask whether this chemico-physiological explanation does justice to those acts of sagacious insight by which science has ascended to that lofty seat from which she dares either proudly to dispense with God or confidently yet humbly to read the thoughts of God? Whatever else may be true of the solutions which the physiological metaphysics give of other problems, they furnish no satisfactory explanation of the processes by which science itself has been evolved into being or of the authority by which she commands the assent of mankind.

(2.) Equally unsatisfactory are their representations of the agent of science, whether it be called the human intelligence or the human soul. It would seem as though any satisfactory metaphysics would of necessity exalt the agent of all these achievements to the highest possible position, and accord to it the noblest endowments and capacities. To do this has been the temptation of scientific thinkers in other ages. It has been reserved for the science of our time to show its extremest daring by its attempts to degrade its activities, and to crown that daring by efforts to dishonour or destroy the agent that performs them. It would seem that none but a modern scientist could be moved to sublime delight in looking back upon his individual self as once floating in the whirl of the original fire-mists, or rise to a feeling of exultation in looking forward to himself as flashing in the azure tints which drape a magnificent sunset. Nor have these conceptions of man's spiritual being been confined to the soarings of the scientific imagination. The reason has also used its utmost refinement of analysis and stretched analogies to the boldest theories in order to reduce the knowing agent to "a physiological expression" or a metaphysical abstraction. It is true that, in order to be successful, it must first avail itself of the mystery and magic which the common mind finds in the processes of life, exalting and magnifying them so high as to make them capable of spiritual functions, and then give both life and spirit a downward plunge by its mechanical theory of nervous shocks. If our readers will assure themselves that this representation is no exaggeration, let them carefully study the representations of the soul as they are reasoned out by Bain, or Spencer, or Lewes, or Fiske. Let them not be imposed on by the apparently candid and considerate admissions which they find in all these writers of the difference between physiological and psychological experiences, nor of the incommensurability of the one with the other. They will find that in the last analysis the so-called psychological experiences are only other names for states of the nervous system which, even in the terms by which they are described, are only removed by the faintest *nuances*, from mechanism and chimism, either in thought or language. As to the mind itself as known to itself, as exercising the authority of judgment or being convinced in certainty, there is not the hint that this is not only essential but conspicuous in the operation of scientific knowledge. The suspicion or conviction that there is or can be an agent that exists or acts in them all, is set aside by the suggestion that mental acts and the agent as known are but fleeting states or phenomena of the unknown force which now

appears as a knowable phase of what we call matter, and now as the knowing act of what we call mind, while of the nature of the two-faced force we can know nothing more than is given in these transient phenomena, while the permanent existence of the subject of either is simply the longer persistence of the force which manifests itself through either aspect of these bi-polar phenomena. To reach any scientific conviction would seem to require a mind to be convinced, but this philosophy knows no mind, but only a state that is correlated to a phase of the nervous system which is but another phase of other agents sublimated to or through higher removes of refinement, from the preceding simpler elements, or the simpler phenomena that went before. No explanation can be given of the plausibility of such a theory except that its theory of the soul is purely physiological. None of these most dexterous word substitutions or subtle interchanges of thought can be accepted as the equivalent for the emphatic assertion of its own being which the soul makes to itself in every step of its knowing, and which it emphasises more positively the higher it rises in scientific achievement.

(3.) We pass next to the conditions of knowledge in the apprehension of which the physiological metaphysics claims special advantages. It has learned, on the one hand, to recognize the necessity of certain categories which must be assumed as unquestioned and primitive in order that science may be possible, but cannot recognize them as either forms of being or forms of mind, because, according to the physiological theory, beings and mind are varying states or phenomena of the unknown force themselves which are more or less persistent, evolving one another by differences that divide and combinations that unite. There are relations, however, ever recurring, which mix with all our knowing and enter into all our experiences, and which accompany all our beliefs, and are especially conspicuous in the high generalizations of scientific thought. It is true that physiologically conceived, as has already been explained, relations are only feelings, more transient than the feelings between which they are said to exist—*i.e.*, are experienced in the mind's transition from one feeling to another. There are relations between complexes of feelings and also between complexes of relations. These relations, like all other mental experiences, involve certain definite activities of the nervous organism, which, if often repeated, tend to perpetuation. Let it now be supposed that certain relations, as of causation, or time and space, both in their specialized and more general forms, should often be

repeated—the molecular condition of the brain must be gradually adjusted accordingly. By the law of heredity the tendencies to these adjustments must pass over into the brains of the succeeding generation. By constant exercise these adjustments would be so fixed as invariably to recur when their appropriate conditions should require, attended by their accompanying psychical experiences, till at last, as the result of the accumulated force of these recurring and inherited experiences, it has become absolutely necessary to the intellectual activity of the human race as we find it to think under them as accepted categories of scientific knowledge. The physiological origin and character of this theory of the conditions of science are sufficiently obvious. Every element in it is purely physiological—the nervous activity as the counterpart of mental activity; tendencies often awakened and fixed in the brain by repetition; heredity by physiological transmission, and unconscious and necessary revival under every possible occasion. We do not assert that the theory, when physiologically viewed, is altogether coherent. Even though we should allow its principal assumptions to pass unquestioned, we do not find that it explains why so few of these relations between complex feelings or complex relations should originally present themselves so frequently as to thrust aside many others—why the relations of time and space or causation should gain any advantage by their frequency, were there not some original necessity that determined them to be frequently and even uniformly present to the discerning mind. But if any such necessity for their frequent occurrence be admitted, then it must have existed before the intermediate action of the physiological agencies that are introduced to explain the permanence and the universality of the categories that have thus become the intellectual outfit of the race. Then again, heredity, while it transmits with strength and certainty, also transmits with tendencies to variation; and the environment which receives the transmitted legacy of the past also fixes it with some discernible change. But this is contrary to the theory which holds the categories to be axiomatic and permanent.

If, on the other hand, we suppose the theory to be true, the consequences must be fatal to the authority of science itself. We see not why, under the operation of the physiological agencies supposed, new categories must not come into existence which may displace or perhaps contradict those already recognised—nor why any species of so-called relations may not come into being; nor why, under the operation of the inevitable tendency to change, the entire structure of axiomatic

relations which are now accepted should not be outgrown; nor why, in short, science itself, as we know it, with its space and time, its number and magnitude, its causation and its adaptations, should not finally be dissipated into intellectual star-dust.

It would seem as though any system of metaphysics ought at least to provide for its own permanence and the solidity of the sciences which rest upon it. But when, instead of this, it supplies the materials and provides for the necessity of its own displacement, we cannot see why it does not commit a deliberate *hari-kari*, with no less certain and dreadful fatality because of the solemn state and heroic dignity with which it inflicts and accepts the final stroke.

One category or axiom is fundamental to the physiological theory which seems especially endangered, and that is, the assumption of the law of evolution itself as necessarily permanent. No man should claim to be a philosopher who has not asked himself the question and attempted to answer it, Why do I believe that the law of development which I observe to exist within a limited sphere of living beings, extends through the universe of being, or why do I assume that a mode of operation which has held good for many ages will continue for all the ages, or even has prevailed from the first? The question is not answered satisfactorily by the physiological explanation of our fundamental beliefs. Mr. Spencer does not phrase it in the form which we have adopted, although he does very often concede that the evidence for our acceptance of the theory as universal and all-enduring is to be found in its universal presence and its capacity to explain all observed phenomena. But where this criterion of truth has originated he does not seem to consider. On his own theory it is a chance brain-growth which has become a fixed growth—an axiom of the mind, broad enough to underlie all forms of scientific research, and deep enough to sustain the structure into which they are wrought; but how a conviction so fundamental should have gained convincing power by the simple repetition of its discerned exemplifications, it is not easy to see. But a metaphysics which does not seek to explain our belief in the fixedness of the course of nature can never satisfy a truly scientific mind. Such a system is not enlightened enough to ask all the questions which should suggest themselves to such a mind. It is not surprising that if it fails to ask them with intelligence it should be unable to answer them satisfactorily. So far as it may be said to ask any questions respecting the foundation of our faith in the physiological relation of evolution, it answers by phenomena

and analogies that are purely physiological, and even resolves these physiological data into forces and laws that are purely mechanical, translating our very faith in evolution into the harmonized movements of the brain-cells of the philosopher, and explains the movements of the brain-cells by the mechanical movements of the particles of which they are composed.

(4.) We notice, last of all, that the physiological metaphysics makes no provision for, or recognition of, the sphere of scientific inquiry in its full extent and completeness. There are certain conceptions and relations for the actual presence of which to the mind it can give no account; much less can it explain our beliefs and reasonings in regard to them. If it be conceded that it is adequate to the demands of the finite universe of matter and spirit in that it can mirror its facts and relations by those processes of responsive intelligence which its physiological theories provide, it fails altogether to explain the presence of our ideas of space, time, and God, and their relations to finite beings. That these conceptions are often present to the minds of men cannot be denied. We do not insist that they believe in them as realities. All that we need to assume is that they can and do think of them. The physiological metaphysics can in some sense explain the presence to the mind of finite objects, and their pictures, and their generalized notions, and, after its fashion, of their relations; but it cannot possibly conjure into being any nervous responses, any combinations or reflex actions which shall explain the notion of time or space as unbounded, or of God as self-existent and everywhere knowing and acting. Indeed, unless we greatly misunderstand Mr. Spencer's avowals, he limits the power of human ideation to the capacity to picture a certain extent of finite material, which must break down under its impotent efforts to grasp more than a limited quantum of combined and expanded objects and their relations. He very naturally attempts to dispose of space and time and the infinite by sending them to the limbo of *pseudo-ideas*, but he does not send them so far from the border-line of those thoughts and ideas which bask in the clear sunlight, that they do not now and then obtrude their dusky shadows along the horizon that bounds our everyday human thinking. He rightly judges that he has no place for these ideas in his system, for if all thinking is but the charging and discharging of so much nervous force, or the *dis*-location and *re*-location of so many brain-cells, then it is evident that there is no apparatus which can picture to man any but finite objects. The physiological

metaphysics furnishes no such apparatus, for by its own showing the highest capacity into which the intellect of man can be developed can never rise beyond the actions and reactions of a definite quantum of nervous matter, as it is acted on by a definite quantum of existing stimuli. How can such a mind know space, or time, or God? How can it even think of them? Or how, with the materials which are furnished for it to work upon, can it construct for itself the conceptions of such entities? We are well aware that Spencer, with a *naïveté* that is charming, often breaks from the logical chain which should bind him to his system, and flies and even soars above it, in speculations concerning the mysterious unknown that is symbolized to men by its perpetual approximations to reality, which are doomed ever to change because they must ever fail to do justice to the unreachable and inexpressible truth. We know very well that he represents it as the crowning glory of his system of development, that it satisfies man's belief that there is an unknowable object of longing and worship, and that his conceptions of its nature must be for ever changing because inadequate. But we cannot see how, upon his own theory, he finds any place even for the conceptions of what he says cannot be known, for the reason that he makes the very conception impossible. It would seem to us that in order to know that we cannot know it, we must know what the something is which we cannot know, and for the power to conceive such an entity his theory literally and figuratively provides no place in the human brain. It is doubtless grateful to him now and then to break from the limits of his own principles to contemplate some of the many things in heaven and earth which are *not* dreamed of in his philosophy; but he should never be permitted to stray beyond the inclosure within which he has confined himself lest he impale himself upon some of the stakes with which he has hedged himself about. A philosophy which cannot even think of time, or space, or God, has already doomed itself to self-destruction, however ambitious it may be to settle questions which it has demonstrated its incompetency to entertain.

But we ought to bring our meditation to a close. No phenomenon of modern thinking is more marvellous than the suddenness with which the physiological metaphysics took form and attracted to itself public attention. It is far more wonderful that it should have been accepted with so little scrutiny, and been assented to with so blind and headlong an allegiance by large classes of men who claim to be little more than laymen in both physiology and philosophy. It is more

wonderful still that the attempt to challenge its assumptions and to scrutinize its evidence, especially by philosophers or theologians, should have been resented as bigoted and ignorant intrusions into the domains of pure science, and have fixed the devotees in a more blind and unquestioning faith in the extremest conclusions, or have even determined the sympathy of some towards the most reckless assertions of principles that are grossly inconsistent with religion, morality, and social order.

The doctrine of development in the sphere of life, whether vegetable or animal, is familiar to the experiences of the most superficial student of natural history. The distinct assertion of it in a wider reach and application, after a fixed order or plan, when propounded by modern naturalists, had a highly poetic and even a religious tinge, such as at first made it suspicious in the judgment of sober analysts. Only devout Theists, or mystic Pantheists, or imaginative naturalists, would favourably regard the theory of germs as containing within themselves the promise and potency of so wondrous a life which was waiting to be developed from within, and which, in its turn held within itself the capacity to produce germs of still greater promise and potency. The extension of development to the production of new species required only a larger faith and a more extensive observation. It was not till the tendency to variation was conceived of as in some sort a mechanical force, and capable of approximative mathematical formulization, of course without warrant, that the theory gained a hearing from the schools. The emphasizing of the influence of environment as coacting rigidly and severely with the tendency to variation, and the addition of the struggle for existence and the survival of the fittest, tended to abate still more of the poetical and religious aspects of simple development. Even then there was no necessary inconsistency with the belief that intelligence originated and controls the operations of life in the individual and the species. Indeed, the theory, rightly viewed, if you take intelligence and spirit out from its domain, supposes a plan and prevision with the amplest resources for combination and selection, and is not inconsistent with the devoutest Theism. The very word development in the minds of most men, and as the unconscious speech of even atheists and naturalists, supposes a plan after which phenomena are evolved to view. Unluckily when the theory and relations were extended across the boundaries of simple life, it was taken up by men who believed that life is only a more complex form of mechanism, and spirit a more complex form of life, who held, moreover, that mechanism rules the universe, and that

all its wondrous phenomena, from attraction to thinking and loving, depend simply on the collocations and motions of particles, that are by themselves inert, and, compared with one another, are indistinguishable. As soon as this construction was accepted, the poetico-religious theory of development became only a stupid game of permutation and combination. The progress of the universe was as uninteresting and as uninstructive as the evolution of logarithmic indices that are never applied, and, what is worst of all, the system which derived all its plausibility and interest from the phenomena of life provided for its own refutation and abandonment by the suicide to which it was self-doomed. It teaches that the ultimate molecules or simplest forms of matter have not only the capacity for, but they are self-moved to, acts of combining into more complex unions, each of which is capable of phenomena higher in the scale of existence. When the highest forms of the inorganic pass, by insensible gradations, into the lowest forms of life, the higher forms of life begin to put on the lower forms of sentiency and intelligence. It follows by strict necessity that all the spirit of which we are cognizant—all finite spirit, is but some highly developed form of matter. It would seem that a universe like this, with germs like these, endowed with such varied capacities of coaction and development, and certain to proceed with advancing steps through an ascending line of higher possibilities, must require as its supplement and explanation a plan—a thought implying a thinker. We have seen that the logic of the system must exclude even the thought, and makes no provision for the belief of such an agent. The contempt and scorn, however, with which this belief has been rejected by so many evolutionists can only be pardoned in view of the profound ignorance that teleological views have been held by some of the profoundest philosophers who have made the most valuable contributions to positive knowledge. It would seem also that, in proportion to the earnestness with which fact and experiment have been insisted on as the only verifications of hypothesis, and the more distinctly mathematical determinations of law have been exacted, the more romantic and gratuitous has been the faith in forces wholly incapable of mathematical promulgation, to which experiments even of the most general character could not possibly be applied. As we follow out the system into other applications, we find that the theories of ethics and politics derived from it are as offensive as the materialism and atheism which it involves or supposes. Perhaps we may say that they are more immediately dangerous and offensive because they are capable of being more directly destructive in their consequences. And yet so generally has

literature accepted this physiological philosophy as alone rational and certain that it is assumed by those who know little of physiology that this science of life, as misunderstood and misapplied, is the foundation for and introduction to ethical and political philosophy. That the science of man in his actual nature and in all his capacities is the proper introduction to ethics and politics is true, but this is quite another thing than that the sense of duty and the recognition of right are the products of social interactions, and are resolved into the conceptions of interest which have been developed by a brutal struggle for supremacy, and wrought into the brain by the manifold repetitions of force, prompted by the selfish and sensual desires which were the only impulses by which man was originally moved.

We must own that it is somewhat surprising that any protest against such a system which is founded on its practical tendencies should be resented so sensitively by a certain and a large class of critics as necessarily proceeding from theological traditions or prejudices.

We are more surprised that the learned presidents of academies of science are sometimes more anxious to avow their adhesion to the doctrine of evolution than to state in which of its many senses they understand and accept it. Or is it possible that they do not understand that there is a theory of development which not only consists with the belief in thought and a plan in the history of the universe, but requires for its beginnings an intelligent and interpreting spirit in man as truly as it does an originating and sustaining spirit in God? Is it possible that they can be so ignorant as not to know that evolution does not necessarily mean a blind force acting by mathematical laws, which of themselves are the products of highly sublimated star-dust, according to a law of progression which is itself prescribed and assented to by other phenomena somewhat more persistent than the rest, and whose attenuated skeleton of materialism is made to seem plethoric and buoyant by fine feathers like heredity, development, differentiation, and integration, some of which are not yet legitimized by definition or verification, and others of which are confessedly borrowed from a philosophy that is as mathematical and analytic on the one hand as it is poetic and devout on the other? We would also express our surprise that these leaders of scientific opinion who happen to have the reputation of believing in such spiritual agencies in the universe as man and God, should deem it necessary so carefully on scientific occasions to affirm that science concerns itself only with the laws of nature and the phenomena which

these laws explain, and never care to inquire whether spirit is not as truly an agent in nature as matter, and whether, both as created and creator, it may not determine phenomena without violating law and order in the universe. We know that theologians and metaphysicians are foolishly sensitive and intermeddling, and that they are alarmed by uncommon phrases, but we see no reason why, because a man is a scientist, he should have so many negative protests for theistic theologians, and so few for atheistic materialists, who in their way are equally blind and romantic in their fondness for high-sounding phraseology.

But what surprises us most of all, is that the logic of the system itself has not oftener been scrutinized and more decidedly rejected by scientists. Surely there is a difference between vague and distant affinities and significant likenesses, between analogies that compel and so-called analogies that exclude conviction. It would seem that science ought to be as sensitive to unlikeness in phenomena as to likeness, and more than all should be foremost to declare that a metaphysics which destroys itself by its own logic, and every science which it ought to sustain and account for, ought by common consent to be relegated at once to the limbo of the many speculations which have died by their own hands.

P.S.—The preceding meditation, if it has served no other purpose, may have made conspicuous the difficulty of treating in a popular manner a subject, the fundamental conceptions of which are liable to vagueness of use and diversity of interpretation. In view of this liability, the writer subjoins a brief sketch of the history of the terms evolution and development in modern science, which, since writing the above, he finds in R. Euckens' *Geschichte und Kritik der Grundbegriffe der Gegenwart*, Leipzig, 1878.

*Explicatio* first appears interchangeably with *evolutio* in Nicolas of Cusa, but used in a real and not simply a logical application. Kepler applies it to the production of thoughts as well as things. Development—Germ., *Entwickelung*, in the modern application or proximately—is used occasionally by Kant in his early writings. Through Herder, with whom it took the modern definite meaning, and was a favourite word, and Tetius, it was adopted into general use, and has now become almost trite. The term development, strictly construed, did not at first correspond to the modern acceptation. Originally it supposed an outfit of properties and powers, which are unfolded in process of time. The modern use supposes the fitting out or providing the subject with

powers to be itself the product of development, carrying us back to certain fundamental powers from which these secondary capacities proceed.

This genetic interpretation was well known to the Greeks, pre-eminently to Aristotle, who, following Plato, makes the whole to precede the parts, the type determining by its presence and agency their formation and working. This view remained current through later antiquity, the early Christian times, and the middle ages, with here and there an exception. It was not, however, till modern philosophy taught us to comprehend being by means of causation that the genetic method of defining and explaining phenomena was introduced. This explained how analysis into elements, conceived as living powers, gives at once the historical progress and the philosophical explanation of events. But the first in time is not necessarily the simplest and the ultimate, and development by tracing the historical order is still obliged to ask what is developed, and how and to what—that is, it must go back to causes and their results.

Nor may we overlook the fact that the genetic method may be applied in every one of the significations which development both as term and conception has assumed in modern philosophy. These are many. On the one side, the universe is made to come from a single ground-force; on the other, several are assumed as necessary. One holds to matter as the beginning, another to spirit; one proceeds from unity to multiplicity, another from the simple to the complex; one makes it a formation from within outwards, another a superposition from without. The one class of tendencies begins with Nicolas of Cusa and culminates with Hegel, who develops all forms of being by the movement of the concept; the other begins, as it were, with Descartes and ends with Darwin, which last theory has in some circles almost appropriated the conception of the word development in his own special interpretation. The term without qualification should be avoided as involving confusion and vagueness of thought. Or if we give to it a definite meaning, we must interpret it in the sense of some special theory.

The Darwinian theory knows nothing of inward dispositions or tendencies. Its strength lies in the definiteness with which it states its elements or forces, and its entire rejection of all inner agencies, but its weakness lies in the obligation which it assumes to explain phenomena in causal as well as in historical relations. To do this successfully it must give the laws of the workings of its cause, and as it only knows mechanical laws it often is unable to do this. The next difficulty is to account

for the permanence of these effects in sustained forms of being, under the coaction of so many counteracting and co-acting causal agencies. To fall back on simple heredity is to fasten to nothing, and to fail to see that this includes all these difficulties within itself. To fail to regard permanent forms as effects to be accounted for is to give up the most important problem of all, and to be content with elements only, and to abandon that with which development has to do by the wonderful complication of the universe as it is at present. All these difficulties gather strength, the wider and more varied is the field which is covered, especially when as now this method is applied to the sphere of spirit. Doubtless it has thrown some light upon some of its phenomena, but to spiritual phenomena it is most misleading when it assumes to judge wholly by material analogies. Especially would it be to assume that all which the spirit has or does comes to it from without. Great ingenuity has been expended in the attempt to show how this is possible—*e.g.*, how customary combinations can be fixed as permanent laws, how the instinct of self-preservation has been transformed into a moral law. Against all these ingenious explanations we should ask whether the method itself were not inconceivable and self-destructive? What conception can we have of a soul with no powers of its own? Can there be an effect without a counter-working? We can escape these difficulties only by simple materialism; but this brings difficulties of its own. If we believe in spirit we cannot escape original tendencies. If we resort to custom we must assume an original capacity for habit as a causal force acting under law. Similarly with judgments of worth. We gain nothing by resorting to the unconscious except to solve a problem by getting rid of it. We gain nothing by analyzing phenomena into minute elements; for the question returns, How are the ultimate elements endowed, and what can they effect? If we deny original activity working according to law to the spiritual life, we must deny all permanent truths, and with it the causal force of the genetic method itself. With these denials goes the denial of science itself. It were ridiculous to concern ourselves with the problems of reason, after reason were banished from the world. The whole force of modern thought has arrayed itself against this materialistic sophistry —prominently, Kant and Goethe: Kant has opposed to false analysis the true by showing that an original spiritual activity must be assumed, to render it possible to hold anything to be simple and ultimate; Goethe in a memorable passage in his correspondence with Schiller, against that class of Frenchmen who think a whole is explained by the division of

its analyzed parts. It follows from all this, that the doctrine of development is full of blessing or of bane, according to the presence or absence of other fundamental conceptions and relations.

A vote of thanks having been accorded to the author, and to the reader of the paper, a discussion of a general character ensued, in which the Rev. Prebendary Row, the Rev. R. W. Ground, the Rev. C. L. Engstrom, the Rev. T. M. Gorman, Mr. Habershon, and the Chairman took part.

The Meeting was then adjourned.