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A table of contents for *Bibliotheca Sacra* can be found here:

https://biblicalstudies.org.uk/articles_bib-sacra_01.php

ARTICLE VIII.

CAUSES AND REASONS.

BY EX-PRESIDENT JOHN BASCOM, D.D., LL.D.

A STRIKING thing in human life is the increasing earnestness with which men pursue truth, and at the same time their increasing doubt concerning it. There is an ebb and flow in thought, like that of the ocean; and the prevalence of any one opinion frequently means that the forces which sustain it are well-nigh spent. There is an equilibrium to which convictions are constantly returning; yet an equilibrium framed each time somewhat differently, and sure to be shortly broken in some new direction. It thus becomes wisdom to map out the current opinions of our own period, and to escape thereby those extreme movements which leave one stranded in some shoal, and so ready to affirm that there is no depth in human knowledge, no solidity in human experience. It is our present purpose to aid sobriety of thought by tracing anew the familiar lines of demarcation between causes and reasons, which have been at so many points confused and effaced by current speculation.

The distinction between causes and reasons arises in connection with the two hemispheres of knowledge which forever lie over against each other, and neither of which, in its union with or in its opposition to the other, can be overlooked without losing the center of knowledge, and breaking into fragments our spiritual life. There have been few systems of thought so barren of comprehension as monism, a la-

borious putting together, in phraseology, of conceptions which forever lie apart in experience. It is an effort to add to our knowledge by revolving one hemisphere till it slides into the other. Much of this formal yet empty philosophy has arisen from confusing causes and reasons.

Causes are the connections between successive physical events: reasons are the connections between successive intellectual states. These definitions, while sufficient rightly to direct our thoughts, may at times leave the mind in doubt, because of the extended interplay of material and intellectual phenomena, due to our physical organization. Causes become reasons at a second remove, and reasons, when we enter on action, complete themselves through causes. The beauty and fertility of a country may give a reason for settling in it, and settlement may lead to labors in furtherance of this beauty and fertility. Yet conclusions may lie in the mind quite apart from surrounding objects, or those objects may expend their energies on each other and awaken no attention in the mind. The interlock, when it arises, may give blended phenomena, but does not alter the essential character of its two terms. Causes and reasons unite in a life which is neither exclusively physical nor spiritual. The two rails of a railroad do not lose their separate identity by becoming one track. We may not be always able to analyze out the physical and spiritual elements in our feelings, and yet the distinction will at times be beyond all doubt. The weight on each of the two rails may not be, at any one moment, equal or distinguishable, yet it is real.

Causes have a physical basis; reasons, an intellectual one. Causes are exactly and inevitably followed by the effects appropriate to them; reasons may not pass into convictions, nor convictions into actions, through inability, indolence or indifference. Their efficiency turns on the character of the mental

activity associated with them. This assertion involves the question of liberty, but may also be looked on from another point of view. If reasons, as a kind of causes, carry with them fixed relations, then all the action or want of action which attends upon them is equally rational, however we may speak of it. One should affirm that convictions and the actions associated with them are rational, with the same certainty that he affirms that all physical effects have sufficient causes. Such an assertion is so absurd as to abolish the very difference under consideration,—that between rational and irrational belief. The man who regards an opinion as rational has the same ground for his convictions as the man who thinks it irrational; both are obedient to sufficient causes. Rationality, as associated with reasons, is in no way different from reality, as associated with causes. I have stated this difficulty more than once, but no more frequently than its character demands. We must in some way distinguish between reasons and causes, or the present discussion and all discussions drop to the ground.

Reasons involve convictions, understood for what they are. Consciousness accompanies them, the mind entertains them, and by means of them frames its intellectual states. The potency of the mind is developed out of this power of thought—the ability to push at pleasure its inquiries in various directions.

Causes are never comprehended. Oxygen and hydrogen unite to make water. This we learn from observation; but why they so unite, or how water arises as the product, we do not know. The nature of elements is disclosed to us by results, not by insight. Herein lies the difference between induction and deduction. Induction is a process by which we give exact statement of our experience, frame from it a general rule, and lay it up as knowledge. In deduction, we analyze

the convictions present to the mind and draw from them the conclusions contained in them. Deduction leads us from reason to reason. We lay down our own path. Induction teaches us how facts are actually united in the world about us.

Socrates is sometimes spoken of as one whose inquiries were inductive. The exact opposite would seem to be true. His process, that of leading the mind, point by point, through a series of questions, was not inductive. Physical inquiries, whose procedure is inductive, were distasteful to him. He regarded them as leading to frivolous and unprofitable results, as pertaining to matter which the gods had not revealed to us. This opinion, in his time and from his point of view, was correct. Our knowledge of physical things never extends to their real nature—and men had not yet learned the wisdom of making physical phenomena the subject of extended and careful investigation. The need of induction was not felt because its purpose was not clearly conceived. Socrates wished to push inquiries which led to convictions. He regarded the knowledge of men on social, political, and ethical questions as confused and contradictory. It had been acquired in an accidental and conventional way and called for careful reconstruction. This inadequacy and discrepancy of current opinions was brought out by a series of questions, and men were led to see what items of belief were fundamental, and what items must be altered, in order that the whole structure of opinion might become consistent and intelligible. This correction of belief was a deductive process in which the mind came to see the several bearings of statements and so was able at length to harmonize them. Socrates, as an ethical thinker, was deductive in his habits of mind, and interested himself in making the ethical ideas afloat among men more systematic and coherent. It was the relations of ideas that occupied him, and

facts were considered simply as giving to them distinctness and verification. While mathematical processes are not inductive, and call for no proof from facts, yet, when applied to facts, the application comes under the correction of experience. The prediction of an eclipse creates a lively interest in the result; but if there is a failure in time, it is ascribed to some error in the calculation, or to the possible presence of some element not considered. No doubt attends on the mathematical deductions.

A deductive process is purely rational, one of reasons; an inductive process is purely empirical, one of causes. These causes are intelligible and interesting to us because they lie in constructive relations to each other, and because they give us a measure of our power in handling these relations. A search into causes fascinates us because it imparts far-reaching knowledge, workable knowledge. It is in satisfaction also of reason that we inquire into causes, and so come to know the make-up of the world, the dependence of its several parts, and the manner of their combination in one whole. Causes, like those which give position to stones in a disorderly heap, that are arranged under no constructive idea, afford no satisfaction, and are not made an object of pursuit. Causes which subserve purposes, and can be made the means to farther purposes, alone interest us. It is the resolution of them into reasons, mental connections, that makes them the material of thought. The physical world is one of varied, magnificent, and serviceable dependencies, and this fact renders the causes which sustain it and carry it forward, matters of intense interest. If a grand cathedral were to collapse at once into a heap of rubbish, this blind action of causes would open up no field of study. If elements, in their interaction, were at cross-purposes, we should find as little in them to engage us

as in the irregularities of an arctic ice-field. It is the combining, constructive processes of mind, struck through and through with deductions, relations which support each other, that make empirical inquiry a revelation and a training-school. Even an ice-floe may teach us something, but it does it by disclosing the forces in orderly operation through a wide field. If we could conceive of a machine whose many wheels revolved in no relation to each other and rendered no service, it would become at once a foolish curiosity. The purpose which it subserves explains a machine as much as do the mechanical connections of its parts with one another. We may make an effort, in explaining the world, to get rid of reasons, inaptly termed final causes, but we seem to succeed only because they are so constantly and inevitably assumed, that we can move forward without drawing attention to them. As a fact, the world satisfies the mind as fully in its constructive relations as in its causal connections. It is these relations that uniformly inspire us in a laborious pursuit of the agents by which the marvelous work is done. .

The fundamental conception in causation, that of uniformity, is a rational conviction, and not the product of experience. All that induction can tell us is that certain effects have followed certain causes, twice, thrice, as many times as we have observed them. This fact says nothing to us about cases which have not yet arisen. It is our sense of what is rational that leads us to expect uniformity as a law. Any other expectation would carry confusion everywhere, and make empirical knowledge impossible. This conclusion of uniformity we often reach when our opportunities for observation have been very limited. Having one fact of a definite kind, we let it stand for a million similar facts of which we know nothing. There is a physical coherence in the body inducing

habit, and the mental coherence in thought inducing knowledge.

Induction has its logic, but the canons of that logic are deductive. The first canon is given by Mill in this form: If two or more instances of the phenomena under investigation have only one circumstance in common, the circumstance in which alone all the instances agree is the cause (or effect) of the given phenomena. This formula is not established by induction, it precedes induction; it is a self-evident proposition which lights our way in inquiry. If we were destitute of this and similar canons we should be left groping in the dark.

Take history, such a history as that of Greece; we cannot bring it into the field of knowledge without reasons as well as causes. The character of the Greeks, their love of city life, their forms of cultivation, their oligarchical and democratic proclivities, the distinctive training of each city, all play an important part in race development. It is not easy to conceive greater folly than an effort to work out history without developing the reasons operative in it, as well as the causes assigning it conditions. Reasons and causes are in constant interaction in history. If physical conditions predetermine history, history begins at once to modify physical conditions.

Even science, when it has to do with any extended series of events, does not escape reasons. Take such an inquiry as that into the glacial period, its causes, duration, and dates. We have no way of restoring the facts. Our conjectures concerning them owe their weight to their probability, and probability is a weighing of reasons. Changes in temperature may have been occasioned by astronomical causes, or by a readjustment of sea and land, or by both. Or were other causes involved in these changes? The simplest, most rational, theory of the causes at work is the one which will find acceptance.

The distinction on which we have dwelt between reasons and causes is so ingrained in the human mind that it is not at once obvious why we should have taken the labor to enforce it. We have now endured for a full generation an empirical philosophy whose effort it has been to efface this distinction, and to render mental phenomena in terms of matter and motion. This is easily done in fields in which causes and reasons so blend with each other as to make the terms of expression interchangeable. When the consideration is of distinctively mental phenomena, such words as "influence," "persuasion," "conclusion," may be made to take on a physical color, and any further discussion may be pushed aside as a renewal of the baffling inquiry into the freedom of the will. When the idea of reason is brought forward under the form of final causes, the fitness of the idea is flatly denied. Spencer, who has been the hierophant of empirical philosophers, slides easily along on suppositions and analyses which imply causes, and, with his unusual explanatory powers, seems to most minds to bring a new and better method to psychological investigation. Few philosophers have ever led disciples farther with less knowledge of where they were going than has Spencer. This philosophy has now had time enough to show its quality, and we are prepared to see something of the confusion into which it has brought us.

The first instance we adduce is that of *evolution*. The notion of development is so consonant with an overruling and guiding thought, so measures the intelligibility of the world and our ability to work our way in it, that it rapidly wins its way with reflective minds. But the evolution of empirical philosophy is a totally distinct conception from development in which causes and reasons are in perpetual interplay. The two conceptions are to be kept apart if we are not to fall into

much confusion of thought, and be unwittingly robbed of spiritual beliefs. The evolution of the empiricist is a strict sequence of causes, and allows no more flexibility of results than attends on the striking of a clock once wound up. The empiricist assumes the clock and diligently follows it as it ticks off the years and strikes off the centuries. The philosophy not called empirical, though grounded in human experience as men have lived it and understood it and enjoyed it; the philosophy that regards causes as perfectly opaque till made translucent and transparent by the disclosure of intellectual insight, looks upon development as a wonderful comingling of causes and reasons, the fact giving permanence and visible form to the idea which accompanies it, and the idea, as a ruling spiritual factor, unfolding the fact into a marvelous universe in which the two dwell together forever. The word "evolution" is the fitting term for the first philosophy; the word "development" for the second philosophy. If we allow the two conceptions to run together, the barren, unworkable notion of evolution will extinguish much of the light and inspiration so native to the idea of development.

Evolution is not merely not proved, it has no plausible basis in experience. Grant the starting-point, the physical elements which make up the world, and it is still unable to surmount its first difficulty, the introduction of life; nor its second difficulty, the assumption by this life of so many forms related to each other, not merely by descent, but by an extended and systematic adjustment to each other and to the world. Grant the germs of life, concede constant fortuitous changes, accept the fact that those forms of life best adapted to the situation will be more likely to survive than those less well adapted, and we still have no rational explanation of the world. Fortuitous variation is absolutely inexhaustible in the direction it may

assume. If these changes have no specific character, no definite direction, no harmonious and considerable modifications, natural selection, acting on such a multitudinous mass of slight transformations, will have no power to distinguish and combine those fitted to make a kingdom. Insensible and insignificant changes are an impracticable term in world-making. There is no reason in the process, and we can get no reason out of it. Natural selection, though it involves a rational relation, does not suffice to help us through. It is overwhelmed and lost in the general reign of accident. One bit of fitness cannot hold a place in universal unfitness. The contention is left to go on forever. The reasonable thing, ever in a hopeless minority, cannot beat down and beat back the overwhelming flow of accidents. There would be a missing link not only between man and animals, but in a thousand other relations. It is not rational to suppose that any length of time would help the world through the confusion of chance, when the same chance stood forever ready to undo what may have been done. There must be some guidance of action and some guarding of results, or a systematic product can never emerge.

If one wishes to see how much futile ingenuity has been expanded on this process of evolution, how many theories have arisen, how incapable they are of reconciliation, and how inadequate each one is to occupy the entire field, he has only to refer to such a work as "Evolution and Adaptation," by T. H. Morgan.

We do not affirm that these theories are not highly instructive, that they do not often touch on significant facts; we affirm that they are constantly assuming, as in the theory of mutations—distinct and harmonious modifications—elements not covered by simple causation but involving specific reasons.

The controversy between the two philosophies is wrongly conceived. It does not lie between strict causation on the one hand and capricious reasons on the other. If this were our dilemma, we should do well to accept causes and make the most we could of them. It is a feeling of this kind which seems to govern the empirical school. The question is rather whether the world, in its construction, does not show both elements, causes and reasons, plastic facts and shaping power. The Divine Reason working with causes is expressed in them and modified by them. The relation is not a nominal but a real one. Every method, every process, begins at once to put limitations on the mind which employs it. The method and the purpose unite to define results.

Man thinks by means of the neural connections of the brain. We may say that these connections are self-sustaining, and control thought: or we may say that thought makes only a formal use of these relations. Neither assertion expresses the truth. The brain limits thought, and thought presses the brain into its service. In like way we may say that the causation of the world is real and serves to instruct and guide us, and yet affirm that it is constantly transcended by the rational element which permeates and directs it. This interaction is our real problem; one neither of pure causation nor of pure reason. The world is neither perfect in all degrees nor imperfect in all degrees, neither flexible nor inflexible at every stage. It is our wisdom freely to accept the facts as they offer themselves.

A second instance of a similar extreme pushing of causes is *inheritance*. We have here to do with commingled physical and intellectual facts. The explanation of empiricism becomes inadequate and fantastic, and this in the degree in which the phenomena to be explained are spiritual. The empiricist,

with his rigid notion of causation, falls at once into the snare of deductive reasoning, lays down a high, *a priori* road, and finds himself involved, as in the case of Weismann, in a battle of the most speculative form of dogma. The inductions which are possible in inheritance are relatively few. Causes and effects are very complex and, for the most part, beyond our control. The empiricist, instead of uniting definite causes with definite effects, often infers his causes from the effects, and then expands them into a fugacious theory. Gemmules, physiological units, determinants, are not known facts: they are hypothetical facts, which lie entirely beyond observation and are taken on simply as explanatory of known phenomena. Almost any result can be disposed of in this method with no gain of knowledge or of mastery. Unknown facts of inexhaustible flexibility are held in reserve as a means of disposing of whatever may arise. The conception is made equal to the task assigned it.

Our actual experiences receive no new light. Every man of talent strains his inheritance, and every man of genius transcends it. There are no known antecedents to expound him. We are no nearer than hitherto to the interpretation of unusual powers. If this is true of men of genius, it must also be true, in a less conspicuous way, of every man. There are terms in each person, and a combination of terms, that transcend our knowledge. The connection of the mind with the body is such that physical inheritance goes far to expound mental inheritance, but there arise constant distinctions of character in reference to which we have no other resource than to fall back, in a conjectural way, on unknown ancestors—unknown at least in reference to the influence attributed to them. Thus our theory is established by the assumptions of the theory itself.

Nor does this ready and remote reference of qualities correspond with our experience in inheritance. Flowers and fruits, improved varieties in domestic animals, are secured with no reference to remote ancestors, but by a successful handling of tendencies close at hand. Skill here means quickness of observation. A cardinal fact in our experience is the pliancy of lives as immediate products. The law of causation, whatever it is, gives plenty of room for fresh modifications.

When we come to man, training and social inheritance claim a large share in results. A reaction between reasons and causes sets in which prevents the undisputed preponderance of either. While we are impressed with the obstinate character of some of the forces with which we are dealing, as if they had prevailed for a long time, we are also impressed with the modifications which skill and patience put upon them.

The facts of inheritance still wait on wide observation, an observation that is neither anticipated nor perverted by an hasty application of a doctrine of causation. While there is a connection between successive generations of men in which causation is deeply involved, there are also ethical and spiritual reasons which bear upon the problem. We are no more in a world of inflexible causes than we are in one of fortuitive events.

The causal conception of inheritance not only leads to imaginative theories, it opens the way to fanciful notions—an evil which it started in controverting. A recent voluminous author regards soul-stuff as exposed, in the progress of events, to a constant liability of loss. The soul-stuff incident to any line of animal life that ultimately disappears ceases to be present, to be built into the later developments of human life. "Much if not most soul-stuff is lost, with every extinct species of animal life a soul type also vanishes irrecoverably from

the world, and, as the dead far outnumber the living varieties, the great body of soul is irrecoverable by physiologists." Human life, therefore, if it has been broadened out by the lives which lie behind it, has also been narrowed in by every loss suffered on the way. Under this inference the world ceases to be a rational product, a steady moving into the light, and has been the fruit of unmeasured vicissitudes. We have occasion to congratulate ourselves that we have gotten out of the scrape as well as we have.

We may regret that some animals are becoming extinct, but to say that human life is impoverished by all expiring lines of development is much like saying that the tree is robbed of life by every dead leaf or twig that appears upon it. Growth always contemplates the falling away of what becomes superfluous. We have no occasion to regret the death of a fool, no matter what soul-stuff he may have contained. Moreover this conception is a very mixed one, even on the basis of causation. Causes are not lost, they simply hold on in their eternal evolution. The point of remark in this opinion is the degree in which it banishes reason from the world, and leaves it to carry or miscarry as diverse chances befall it.

One author, Dr. Lucas, impressed with the great importance of the facts not covered by inheritance, advanced the theory that there are two laws, one of inheritance and one of spontaneity. To this law of spontaneity, Ribot justly objects, as virtually a contradiction in terms. A law means some one form of regularity, while spontaneity stands for constant irregularity. Ribot would rely on the obscurity of the causes involved in inheritance, and on the transformation they undergo, to cover the phenomena. Drunken parents, for example, may give rise, in their posterity, to one evil or to another evil in different cases. The sequence is not a fixed one. We may

readily accept variety in unfavorable results, but not so readily in favorable ones. Destructive and constructive processes do not stand on the same easy terms. Mischief enters in many forms, while good comes only in a method normal to it. The gains of humanity in intellectual and ethical power must be covered by some correspondent force in inheritance.

That which makes the empiricist so unwilling to accept any explanation but that of rigid causation is, that ever other theory seems to imply arbitrary intervention, and thus to break down causation. If this is the alternative involved, we should feel compelled to adopt the view of the empiricist. But there is another explanation open to us. We may affirm that Wisdom lies at the heart of the world in its origin and in its development, as the idea goes with the language which expresses it. Wisdom is not bound to any form of causation, but may incorporate into it changes normal to it. Method does not preclude modifications, nor a machine the skill requisite to run it. Wisdom is not constrained by the plan it adopts, but is as free in using as in accepting it. It is only bound to an orderly, self-consistent procedure.

Facts under this theory are not capricious, and do not exclude inquiry. Each change is involved in existing conditions, and unites itself closely to them. There we may study and understand it precisely as we investigate a series of causes.

Observe the difficulties involved in rigid causation. We accept causes as a means of evading fortuitous events. That is we deny one form of reason, to wit intervention, in behalf of another form of reason, to wit uniformity. We are setting aside reason in favor of reason when we seem to be simply following causation.

Rather than accept Wisdom as constantly present in the

world, we leave causes to do their work inadequately and obscurely in deference to an idea under which we have enthroned them. We assume causes not indicated rather than accept reasons which seem to be plainly involved in the facts before us. This we do in furtherance of what? Knowledge. Thus we start out with a predetermination to exclude Wisdom from a world so saturated with it that we find evasion difficult if not impossible.

A field of inquiry which has especially suffered from this extreme, yet false, empiricism has been sociology. Sociology as a field of systematic inquiry is new, but it is not new as knowledge. The energies operative in society are of long standing, are very varied and are constantly taking on new forms. We are familiar with them, and what now engages our attention is their more complete and harmonious statement. Sociology, like Economics, is primarily a discussion of reasons associated with causes, and is extended and verified by experience. Induction finds little play in it. It deals with phenomena which may be disproportioned and conflicting, but which are, for the most part, well known.

A sociologist of the empirical school seems haunted with the notion of something to be discovered. A new science is to be unearthed, like a mastodon from a peat bed. He searches far and near for self-acting causes which govern society, and has little to say of the opinions and motives which attend on its development. Society stands with him for "an equilibrium of energies between the group and its environment, between group and group, between unequal and conflicting elements within the group." He strives to discover social facts followed by reciprocal facts and so make of the relations a universal law. He is baffled in this pursuit, missing any instructive sequence and hitting only on truisms; and chiefly be-

cause the motives of similar lines of conduct may be different, both reasons and causes being held in a changeable interflow. Social facts often bear the form of a rational sequence and must be so apprehended and presented.

One writing on sociology is spoken of as not dealing with what has been, or what is, or what ought to be, but with what tends to be. Yet what ought to be is the deepest tendency of social events, and what has been records the conflict between this drift of the stream and the shores which hem it in. A professor of Economics in a distinguished university writes, "The basis of economic induction must henceforth be, to a much greater degree than hitherto, quantitative data, amassed as deliberately and laboriously as chemical and physical data are collected by the natural scientist in his laboratory." Quite akin to this is the feeling which prompts a leading sociologist to congratulate social inquiry on the extended use of statistics, as about to give the science, by the introduction of mathematics, a footing in the field of prediction. These views overlook the fact that any knowledge which rests largely for support on reasons cannot be reduced to exact formulae. This process strangles the movement. Take the statistics of crime. We can shape no definitions of crime that make the figures in the several columns equivalent units. Every crime differs from every other in its antecedents, motives, criminal intent, and consequences. What we need to know, and all we can know, are the conditions which occasion crime. The moment a botanist recognizes the species to which a variant specimen belongs, he is satisfied. The exact circumstances which modified its development may have no general importance. The actuary who is dealing with normal and with fortuitous causes may be able to predict the average length of life associated with similar circumstances, but he

gains no knowledge of hygiene. This demands physiology, and the tracing of influences within the circle of life.

Physics and chemistry are greatly aided by the introduction of mathematics, because in these departments definite and identical units can be established. Statistics have their value in Sociology, but they do not transform it into a science, because the things enumerated are not in each case the same. The value of our statistics must depend on the wisdom with which we handle the things capable of comparison. No steady accumulation of facts is possible in Sociology which, in the end, will exactly define and measure the facts under consideration. An extensive inquiry into the specific form of economic and social facts, and a laborious transcription of the results, will lead to confusion if it is not associated with guiding ideas derived from the reasons involved. Having these ideas, we have no occasion to go beyond the demands made by them. In an effort to distinguish races—a distinction much more definite than that of character or conduct or institutions—we should gain nothing by an exact portrait of many individuals. The selection and determination of ruling traits would still remain to be made by us. There is as much skill shown in neglecting immaterial differences and immaterial agreements as in deciding on significant ones. Indeed the two processes are inseparable. He alone prospers who knows what to omit. The act of raking things together, though we call the process induction, does not create science.

This displacement of reasons by causes is not confined to any class of inquiries. It appears in ethical and religious discussions, where it is especially disastrous. Says a current German writer, "History and its phenomena are to be explained on the basis of agencies active in the development of the world, and that, too, without an appeal to the idea of God."

"We must explain the world on the basis of the world itself." These assertions are hardly intelligible unless they are intended to assert that the causes operative within the world are sufficient for its exposition. The reasons and causes are sufficient, but among the reasons are to be found all the phenomena of our spiritual nature, prominent among which are the facts which inspire our belief in God. To discuss the world without its spiritual convictions, is indeed to leave out of "Hamlet" the Prince of Denmark.

The religionist occasionally finds nothing to oppose to causation but chance, and then rules this out as not to be thought of in any world. The spontaneity of mind in thought, the connections of thought, the actions which follow on, go for nothing. They are simply a shadowy deception induced in consciousness by concealed, yet enveloping, causes. If we start with the idea that the connections between intellectual states are so like those between physical states as to be capable of being expressed under the same words, the above conclusion becomes inevitable. Man is so played upon by the physical world as to make his mental experiences a portion of its phenomena. It is the lack of all coincidence between reasons and causes which renders this conclusion invalid. The search for truth is an act of its own order. Truth implies liberty in thought, and liberty in thought means liberty in action. Our standing with the truth is the essence of our manhood.

There is a disposition on the part of many to recognize this divergence of the two worlds, physical and mental, but to regard it as an eternal discord rather than the only basis of concord. Mallock, in his work "Religion as a Creditable Doctrine," sums up his discussion in this form: "Each of the two worlds, the cosmic world and the moral, is apprehended

and accepted by a similar act of faith, by a sensitive and an instinctive, and not by a cognitive, process; and since each, when we thus accept it, is found to imply propositions which are, for the human intellect, absolutely irreconcilable and contradictory, we are performing no act of a new, unique, rash and unreasonable kind in accepting the doctrines of religion as the principles of the moral world, together with the laws of science, which are the principles of the cosmic world; though it is absolutely impossible for us, by any mental ingenuity, to conceive how the latter are empirically susceptible of any union or cooperation with the former" (p. 283). We accept this view so far as to recognize in all our empirical knowledge an unintelligible residuum. It is precisely by this residuum that it becomes a matter of experience. This is equally true of physical and spiritual facts. The mechanism of both is beyond us. We cannot, however, concede for a moment a contradiction between the two sets of experience. This would imply a much deeper knowledge of each, so deep that the one process is seen to be incapable of association with the other. Reasons and causes cannot both be given the same sequence; neither can two bodies occupy the same space at the same time. Far from there being an insuperable difficulty at this point, the intelligibility of the world is involved in the relation of these two elements. The interplay of reasons and causes is what makes the world a rational product, offering the conditions of the highest discipline and the most enjoyable experience. We do not understand the mechanism by which mind and matter at length touch each other, but this may simply mean that we have gotten beyond mechanism and are now accepting its ultimate conditions. The case is not different in the two forms of experience. We assume the forces involved in physical events and trace the phenomenal sequence. There

is no difficulty in doing a like thing in connection with spiritual acts. It still remains perfectly plain why these relations exist. The ongoing of the world is causal that it may be understood and directed. There are associated spiritual powers that by these we may understand and direct it. We are capable of guidance because of reason, the world submits itself to guidance because of causes. We find no perplexity till we go beyond these phenomenal relations, and strive to construct a world deeper than the one we encounter. We are embarrassed in this construction, because we have nothing but the old phenomena with which to build the new conception. Sensuous facts are always afloat on the surface, and we cannot immerse them without losing them. But we need not deny the deep sea because we can never behold it, nor regard it as a new mystery that we float upon it. The world is not less intelligible because it is made up of causes and reasons, it rather becomes intelligible by virtue of that very fact. A sphere is a sphere because its two halves lie opposite to each other.

Religion must accept the powers of thought marshalled in the intellectual world, and the causes arranged in rank and file in the physical world. It is between the two that the Kingdom of Heaven lies. We can have no sympathy with an effort to enlarge either of these two worlds, thereby ravaging the other. The opaque earth and the transparent sky are not more to each other, more reciprocal and creative facts, than are causes and reasons in the divine kingdom. The silkworm, laying thread upon thread, seems to be building its tomb, but the moth, its hour arrived, sunders every strand that binds it. It emerges into a higher life out of these barren conditions of burial.

The harmony of the world, physical and spiritual, with it—
Vol. LXIII. No. 249. 10

self, is the goal to which all thought is pushing. Any want of harmony is the deepest difficulty, the only difficulty, we have any occasion to fear. In this inquiry, science and religion are both interested; though they push towards its solution from opposite directions, and neither can thoroughly understand its own facts till they are looked at from the other side. Science, having chiefly to do with causes, comes to regard the world as a self-contained product. As its processes are largely inductive, it awakens strongly the sense of reality and of coherent forces. Religion deals chiefly with reasons, the grounds of rational action. Having to do with many, and frequently conflicting, deductions, it deepens the impression of the caprice and waywardness of thought. Yet there can be no scope, no restfulness, in any interpretation of the world which does not embrace it both as a physical and as a spiritual product. Physical relations alone, while they develop the intellectual, crush the emotional life; and spiritual affirmations alone fill the mind with fantastic and unreal notions. These tendencies should find reconciliation in philosophy, apprehending the world both in its purposes and in their method of fulfillment. It is the office of philosophy to harmonize means and ends, first, by a sense of reality in them both, and, second, by disclosing their fitness to each other. The mind is thus brought to rest in a real, and in a rational, world; one with scope enough to satisfy both thought and feeling. That we should move slowly toward this result was inevitable, for we have possessed hitherto neither of the two terms, things and the reason of things, in any completeness. Our reconciliations have issued in a closed circuit, a world locked up in the pre-determination of its own forces; or in an open circuit, a world so out of sorts with itself as to call for constant and violent changes—changes so out of keeping with themselves as to make worthless the liberty they implied.

The doctrine of evolution has been a great advance toward cosmic harmony. It has made familiar the idea of a universe developed firmly and coherently. Give this notion the form of development, inclusive both of causes and reasons, and we have the two woven together in a product of ever-increasing strength and beauty. We have no longer lost our own law, hidden under the law of things. We cannot, having put the two forms in unreconcilable antagonism, find our way out by a dogmatic affirmation of each of them. We must see that the two are essential parts of one world.

This reconciliation will be less difficult, if we recognize the two processes of thought, inductive and deductive, for exactly what they are worth, and cease to attach to either of them any scope independent of the other. The inductions of science are as absolute as any human experience, and few have any wish to reduce their value. The world, under this revelation, has become quite another place in its intellectual and spiritual values. But when the scientist passes into philosophy and begins to speculate on how these facts bear on man, his history and hopes, his conclusions have no other authority than that which attaches to their intrinsic reasonableness. There is a feeling that the affirmations of scientists have an advantage over those of religionists. It is a common thing to hear the words "science" and "scientific" used as a club for the ready braining of those who cherish faith.

Induction is, in fact, a narrow form of proof, and the data given by it, when they pass under the process of deduction, must submit to the ordinary tests of correctness. The revelations of the physical world, the growing historic experiences of men, and their enlarging ethical convictions must alike find place in that system of things which incloses men in all lines of development. If we recognize to what portions of the

world our knowledge belongs, we shall not be startled by new results nor expect a momentary collision between our earlier and later convictions, between facts and the spiritual experiences to which those facts have given rise.

Take the higher criticism. Doubtless the results of physical inquiry have made us bolder in entering on this criticism. Some things which we had regarded as facts cease to convince us. But the relations of life are not altered. Science and philosophy and faith have still their data to be treated in familiar ways with new care. Historic criticism must gather its resources from many sides, and suffer many corrections, before it reaches a new equilibrium. This equilibrium is pledged to full recognition of all ways of knowledge, and all forms of life. Science, as an expression of authority, is confined to those careful inductions which disclose physical structure. What we will make of this knowledge, the sort of guidance it will give us in the deepest things of the world, will be determined by the value which we still continue to attach to spiritual data, and the higher processes of thought.

None of us are equally comprehensive in our estimates, on the one hand, of the stubborn, crass conditions of life, and, on the other, of those experiences by which we are constantly rising above them into artistic, spiritual being. There must be many upheavals and profound disturbances, much building-up and much pulling-down, the doing of new things and the undoing of old, before life, as in a reconstructed world, will spread over all and harmonize all.

While we have been busy for a generation with convictions which pertain to matter, our thoughts are now ready to resume their former buoyancy, and restore to its true uses these acquisitions of knowledge. Man will never, for any long time or over any broad surface, fail himself, or his single and his

collective visions of life. Nor should he. If physical forces record themselves in cosmic events, equally do spiritual ones bring to the surface the joy and light and gladness of the creation. If causes bear us up, like a sea or an atmosphere, reasons enable us to swim on it or fly in it, as those who have their own pleasures and can cherish their own purposes.

Horace speaks of the poet whose test of achievement was the number of lines he could compose standing on one foot. We have had his counterpart in our cosmic speculations. While we acknowledge that a good deal of faith has spun, like a spider, a complex web, hanging meantime by its own single thread, we still think that it has been given to the empirical speculators of our time to give the most striking examples of this concentration of one-sided and unproductive labor. They have heaped up inadequate, disproportionate, and fanciful conclusions, as if, by means of them, they could outstretch, overtop, and dwarf this magnificent world of which we are heirs, and bring to confusion the thoughts and sentiments it has hitherto inspired. If they are not, like Job's friends, open to the satire that wisdom will die with them, they are exposed to the counter-thrust of supposing that wisdom was born with them.