

May 1882.

A PRESENTATION OF  
*THE DOCTRINE OF THE UNKNOWNABLE,*  
WITH  
A NEW SYNTHESIS,  
BY  
DAVID ECCLES.

A LECTURE DELIVERED BEFORE THE  
KANSAS LIBERAL UNION  
AT THEIR FOURTH ANNUAL SESSION IN  
BISMARCK GROVE, KANSHS. SEPTEMBER 2ND. 1882.

PRICE 10 CENTS.

ECCLES & CO., PRINTERS, 723 Main Street, Kansas City, Mo.  
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## INTRODUCTION.

In compliance with a resolution passed unanimously by the Kansas Liberal Union, at their last session, held in Bismarck Grove, Kansas, I have published the accompanying address—which was delivered before them at that time—in the present cheap pamphlet form, that whatever of truth it contains may be the more widely disseminated. Long years ago, the gentle Nazarene declared that the truth would make us free, and I am persuaded that nothing else can liberate men from mental bondage to hoary superstition. It is not enough to destroy existing beliefs and turn them to ridicule; not enough to deface the systems of thought or religion men have toiled so devotedly to build; we must, to be of service to the race, replace these by a system truer and better.

In the present effort, I have aimed to be as synthetic as my poor ability would allow; and, with all deference to high authority, have deviated from these when my best judgment instructed me that these had deviated from truth. I have endeavored to establish the propositions, that mind is the only real of existence; that the personality of which each individual is conscious is an eternal fact; that matter is a creation of the senses, having no actual existence; and that the current hypothesis of an unknown and unknowable substratum in which mind is supposed to inhere, is a gratuitous and worthless invention. In how far I have succeeded each reader must determine for his or herself.

It is manifest, that whoever accepts the conclusions at which I have arrived, will be compelled to abandon the world's antiquated theological dogma of a material creation, into which God at first infused the "breath of life," with all the kindred doctrines superimposed. Rigorous reasoning on established facts may prove as serviceable in the overthrow of error as a glittering fusillade of

wit, and will be much more beneficial and enduring. I have not trifled with the abiding faith that lies at the root of all religions, viz., a belief in an all-controlling Power, and continued life beyond the grave, but, rather, have fortified this belief against the attacks of a sciolistic materialism. How or what this future life may be, no science, and no indubitable facts help us say; hence, in this unsatisfactory state of knowledge we leave the imagination of each to frame its own elysium. In lieu of actual knowledge, faith in the workings of the Infinite helps to rob death of its terror, and I decry no pleasant shape fancy may here assume.

The subject matter of the present address is of a more recondite character than usually enters into a popular lecture, but I have aimed to simplify matters as much as the abstruse problem would permit, and the favorable manner in which it was first orally received, leads me to believe that I have been in a measure successful. I know of no similar book, pamphlet or discourse that has heretofore treated the subject in such an elementary way, and I am convinced that, to a person of average education, I have made my position, at least, comprehensible.

KANSAS CITY, Mo., Nov. 1st, 1882.

## ADDRESS.

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To clearly understand what we know, and how we know it, is a most important element of knowledge. The pressing need of the present day is a thorough instruction as to the nature and limitations of what we really know. Were this once had there would be much less dogmatism extant, and many who now give themselves out as oracles of much earthly and heavenly wisdom, would begin to perceive occasion to blush for their ignorant presumption.

Paradoxical as it may sound, I unhesitatingly affirm that a knowledge, or, more accurately, a realization of what we don't know, is an indispensable prerequisite to a proper use and appreciation of that which we do know. To be ignorant and not know it, is a grievous misfortune, since it makes the knowledge men have misleading, and "a little learning a dangerous thing." People are quite satisfied with the voluminous list of appearances which they have labeled "facts," not knowing how illusory are the very "facts" on which they pronounce with so much assurance. Superficial appearances in Nature are always misleading, and superficial appearances first speak to the uninstructed with all the force of absolute truth. With this class, appearance and fact are interchangeable.

The accumulated thought and experiences of countless ages have at last taught men the important lesson that "things are not what they seem," either as to outward form and phenomena, or as to what we have been pleased to call their "intrinsic properties." The marvelous conclusion has been reached, after centuries of discussion and brain-splitting thought, that all external Nature AS WE KNOW IT, is but a bundle of our own sensations, existing in the mind, and existing nowhere else. Startling as seems this conclusion, let me assure you that it is now the unanimous verdict of all competent thinkers. Outside of a knowledge of our own conscious states, we can have no absolute assurance, for all our beliefs are but mere probabilities and conjectures whose range of trustworthi-

ness can only be measured by the extent of their uniformity and agreement with observed phenomena.

I can imagine your matter-of-fact man, who prides himself on his unadulterated common sense, will now, not unlikely, impatiently protest against these metaphysical dogmas that so outrage what he conceives to be the solid facts of his observation. If such an one be present I would humbly beg his pardon while suggesting that he has been dealing in metaphysics, and poor metaphysics at that, all the days of his life, and does not know it. The sensations he experiences have been mistaken for actualities and transferred out of himself, and he has thus, unwittingly, endowed physics with the purloined wealth of metaphysics. All theorizing is metaphysical, and all belief respecting external Nature is theorizing. If we theorize from mere appearances our metaphysics are pretty certain to be wrong, but if we compound phenomena with reason, and build on the ascertained correspondence between internal conviction and external things, we will be led into a metaphysical system having a probability of truth great in proportion to the range of this correspondence.

The unfortunate thing about metaphysics is, that when false you cannot demonstrate the fact. It is only known to be false by its infertility in discovery. Good metaphysics tallies with reason and experience. Bad metaphysics intensifies the mystery of things, and leads to no verifiable conclusion. It remains as a ghost to frighten men from a true hypothesis. For thousands of years bad metaphysics has hung over the world of thought like a nightmare, and, to this day, many of the world's brightest minds are slaves to its paralyzing spell. Step by step our enlarged experience has driven it back, but it still contests the ground inch by inch. "You cannot prove me false!" is its perennial cry. No, unfortunately we cannot; but two hundred years ignoring and treating you with the silent disregard your complete sterility deserves, has given us something of civilization, and turned the minds of men into the proper channel for the acquisition of truth. In all the centuries of your supremacy what did humanity gain from your highly sublimated theological systems? Less than nothing. Not one ray of light did you shed into the night of intellectual darkness, but rather intensified mystery and mysticism by dispensing doctrines "too heavenly to be understood," or too puerile to elevate the mind of a savage. Whatever of profit and enlightenment has attached to creed has been drawn from the grand treasury of experimental evidence. To this all true metaphysics must conform, or be summarily shelved with the endless category of musty explanations that explain nothing. We want a theory that will outrage no fact, and shed its light far into the tangled darkness of Nature's arcana.

Let us, to-day, attempt anew a synthesis of our knowledge, aiming to bring it into a harmonious and unified system. Experience has taught us the futility of reasoning without facts, and the worthlessness of facts without reason. We must accept unflinchingly the logical laws of parsimony and uniformity, and consider every theory that does not pay homage to these, mental piracy and a mis-

leading ignis fatuus.

The first, and absolute point of my knowledge is that I exist, and experience certain variable sensations. These sensations give me the impression of an external world, whose leading features are light, color, form, weight, resistance, motion, &c. Are these phenomena dependent or independent of me? Do they exist by virtue of my existence, or are they outer actualities wholly independent of me? What can experience teach us concerning this matter? I apply the point of a needle forcibly against the hand, and experience a sensation I call a sharp pain. I try another needle and the same pain results. Is this peculiar pain, then, a property of needles, or is it simply a sentient state of my own? Whatever may have been the reaction between myself and the needle, I am assured that the pain I experience is within me and not a property of anything. It can only be conceived as a sentient state. This illustration is so simple and undisputed that, perhaps, many of you commence to think I am seeking to masquerade very small ideas in philosophic dress. But let us go a step further. I approach a stove, and experience something I call heat. The stove is hot, I say. You who smiled at the odd conceit of a pain residing in a needle remain perfectly placid when I speak of heat residing in the stove. That is one of your undeniable "facts." And yet these last words react as viciously on the truth as would the statement "the needle is sore," if literally accepted. Heat is a sensation, and can no more abide in the stove than can a pain in a needle. The cause of the sensation heat we explain as being simply a vibratory motion of a certain amplitude and rapidity of beat. Even this explanation is but the translation of one sensation into that of another, as will hereafter appear. Heat, like pain, is a sensation, and abides within. Here is a flower. By application to the nostrils I experience an odor. Is the odor within or without? People say the flower has a sweet smell, and so ingrained has become the habit of thinking of the odor as residing in the flower, that when an accurate statement of the case is made, viz., that odor, like heat and pain, is a sensation, and, as such, can abide in nothing but a sentient thing, and hence is not in the flower, but in ourselves, they begin to feel as if there was some intellectual jugglery being imposed upon them, and laugh at the statement of a plain matter of fact. Not one of you would claim that the tickle you feel when a straw is drawn lightly over the back of your hand is a property of straws, and yet you have the same reason to do so that you have to claim odor as a property of flowers. For what is odor but a tickle of the olfactory nerves. The visible contact of the straw or needle helps you to distinguish between cause and effect, but when, as in the case of heat and odor, no visible action is perceived, cause and effect are illogically blended together. I have here some iodide of mercury. It impresses me with a beautiful color—a bright scarlet or red. Is the color a permanent property of the thing, existing out of me, or is it like pain, heat and odor a subjective state of my own consciousness? If without, and independent, it should be permanent. Apply a moderate degree of heat to it, and right before our eyes it immediately

begins to turn into a bright yellow. Heated still more and it is transformed into a colorless gas. Red, yellow, colorless! Which is it? It cannot be all of these, and we have no reason to think it any of them. Color, like pain, heat and odor is a sensation, having no external existence as such. This chair impresses me with weight. If I seize it by the rounds and hold it at arms length, a great muscular effort is required; but if I lift it perpendicular very little exertion is necessary. What, then, is weight? Does it reside in the thing? If so, why should it vary with position? Why should it appear so heavy at arms length and so light when lifted straight up? Should it be objected that it still has a real weight notwithstanding its variable impressions, and that our balances and spring scales can determine this, my reply is, that even here weight is conditional, and varies, as in the first illustration, with position. For an object brought nearer the earth's centre of gravity becomes heavier; removed therefrom it grows lighter, till taken completely beyond its influence it loses all weight. The conclusion is inevitable, that weight is simply a conditional phenomenon, and, as found in consciousness, is, like pain, heat, odor, color, etc., but a sensation. Here is a round, hard object we call a marble. Do we see it as it is? Is sight absolute? Let us test it. If I look at it through a magnifying glass it appears three, four, or five times its present size, depending on the shape and focal range of the lense. Or it may be made to appear smaller from the same cause. How is this? The thing itself has surely not increased or diminished in size, and yet, my senses instruct me in every instance that it is the same marble I am looking at, as real under one size as another. As it cannot be all of these sizes, what reason have we to conclude that it is any of them? We are compelled to admit that what we see, as viewed through lenses, at least, is not the thing in itself, for that cannot be supposed to change so suddenly. But we may confide, you think, in the natural eye, to give us the true size. Even here disappointment awaits us. For what is the eye but a lense, whose varying convexity determines the size and shape of all objects. No two men see the same thing with precisely the same shape, size and color. Some people, you know, are color blind, and there is all gradations between. Certain birds of prey are known to have a nervous power of control over the shape of the cornea of the eye so as to render their vision microscopic or telescopic at will. They can thus see very small objects a great distance off. As size is simply a matter of relation the inequalities of people's vision are never discovered. For it is obvious, if everything we perceive were enlarged a thousand fold we would all be totally oblivious of change. The old relations would still exist, and we measure size by relation. It is quite certain if the surface of the cornea were cylindrical everything would present a totally different appearance from what it now does, and this marble would no longer appear round. So too, if our muscular force was sufficiently increased what now impresses us as being hard would then appear soft. Light, with all its varied splendor, and all the world of matter and motion it reveals, is but a sensation, like sound, heat, odor, pain

and weight, and thus all so-called external things are proved to be merely internal states. But however we may strip objective actuality of the forms under which it is presented in consciousness, it is forever beyond us to believe that there is no objective reality. One after another we abolish these sentient forms but we cannot abolish the thing. Mysterious as seems the conviction of something out of consciousness which we are unable to define, we find ourselves compelled to believe in it. The hypothesis of external existence is necessary to collate our experiences in a practical way. Mass and motion are our final symbols of outward being, but these are no more the thing *per se* than is a tickle. Our knowledge is a knowledge of what is within, not what is without us. We seem to have arrived at the terminal line of knowledge, and an appalling gulf of mystery intervenes. Here the brightest minds have hopelessly abandoned thought, and retraced their weary steps back to old beliefs. For want of knowledge men have called this outer existence the UNKNOWNABLE. Prof. Huxley, after an extended presentation of similar facts to those I have just sketched, sadly remarks: "This is all that just metaphysical criticism leaves of the idols set up by the spurious metaphysics of vulgar common sense. \* \* \* Make a desert of the Unknowable and the divine Astræa of philosophic peace will commence her blessed reign." It was Prof. Tyndall, I believe, who said we all might purchase peace at the price of intellectual death, and these are the precise terms on which Prof. Huxley offers peace to the world. "Make a desert of the Unknowable!" It is not the province of philosophy to make mental deserts even to purchase peace. If we find a region a desert, we should aim to fertilize it, although we may disagree as to the mode. If inaccessible, why, there is an end of it, and there need be no quarantine instituted. But, is it unquestionably true that no part of this great intellectual desert can ever be reclaimed? Are we so hopelessly enshrouded with darkness that not one ray can penetrate from the mystic beyond? Despite the weighty authority of the eminent men who have thus concluded, my mind instinctively refuses to believe that there is no room for substantial inferential knowledge.

These men, in common with all of us, have made the assumption that something is outside of themselves. Their first metaphysical assumption is that men are; their second, that they have sensations like their own. They admit, however, that they can prove neither assumption. Their experience agrees with their conviction, and this is the sole warrant for their belief. Wherever theory conforms with reason and experience, there theory becomes useful and legitimate. Could we frame a theory touching the Unknowable, that met experience at every point, such theory would fertilize the region Prof. Huxley has given over to be a desert. Even Herbert Spencer, that prince of philosophers, has found himself, for some unaccountable reason, restrained from adopting the monistic conclusion to which his main philosophy tends, and in his Principles of Psychology says: "Mind still continues to us a something without any kinship to other things," thus tacitly accepting dualism. I raise the question, is

there two or more things in existence, or is there only one, whose phenomena varies indefinitely with condition? Nature's safe, in which is deposited this grand secret is locked, and no man knows the combination that will open it. If we make an assumption, and find that assumption agree with all the facts in the case, and conform to reason; if it unfolds an explanation of things hitherto unexplained, if it gives us prevision and illuminates mental darkness, then we may be assured our assumption has a guarantee of truth in direct proportion to these added powers.

Adhering rigidly to the laws of parcimony and uniformity I assume no species of existence unknown to myself. If I accept more than one cause for the common effect SENSATION, then I open the flood-gates for millions of causes and abandon all hope of the possible knowledge of any of these causes. If this is the true condition of things behind the vail of phenomena, then is the Unknowable truly a desert; but if, as I suspect, I am an epitome of the universe then what I know of myself will help me to a knowledge of all else. We all know that sensation exists. Let us not assume the existence of anything else until we are positively sure that everything is not sentient. Sensation we know to be a vera causa. Dead matter is not. We cannot know that being other than ourselves is unconscious. Increase our powers of perception, and we might discover evidence of consciousness in so-called dead matter.

I would have you all remember the truth I have just disclosed, that every thing that reaches us by the five senses is merely symbolic of an outside reality of whose actual nature we know nothing. All science is a study of our sensations in their relation to each other, and are partitioned by elements of likeness and difference. The laws of physical science are the X, Y and Z of an equation. Every sense tells a different story of the real without. The same thing which we feel as motion, we may hear as sound, see as color, taste as sweet, sour or bitter, smell as fragrant or fetid, &c. If a whiff of ammonia enters the eye it will produce a sensation contrasted from its effects when placed in the mouth or applied to the nostrils. Why should we assume it to have any likeness whatever to either of these sensations? Let us look squarely at the problem. Matter and its states we have proved by a psychological analysis to be an illusion,—a dream, a shadow. Outside of the mind it has no existence. The thing itself we think we are looking at has no color, but some state of it produces in us the sensation color. It has no shape, no weight, no ductility, no sound, no taste, no odor, no motion—nothing of any of the phenomenal qualities we know. What, then, is the real that is colorless, tasteless, weightless, motionless, shapeless, size-less, soundless, resistingless, attractiveless, etc., and what condition in it are so completely altered when expressed in sensation? We bundle up these sensations and call them matter. What is the cause of the metamorphosis? Shadows fall on the screen of consciousness as when parents amuse their children in a dark room with a white screen between them and the light. Fingers are put together in such way that the shadows form rabbit heads, dog-

pigs, birds, &c. Problem: Given the shadow and its properties what is the real arrangement of the unseen things producing it? This might prove insolvable, but if we adopt the child's tactics, viz., go behind the screen and see, we may find a ready answer. Here in the brain is matter and its conditions, those shadows that fall upon our consciousness when we examine another's brains. What arrangement lies behind the screen of our consciousness. Let the consciousness behind the screen tell every man. It is thought, feeling, will. Everywhere we go these shadows come up before us. In the brains of our fellow creatures the curtain is partly lifted that we may study. The brain may be the Rosetta stone that will yet enable man to study the mind hieroglyphs of all Nature. We call the brain matter. Trees and soil are the same. Why should one piece of matter in one place possess a power that another piece of matter differently situated does not possess in the most fractional degree? Even as a question of chemistry men have seen reason to conclude that matter is, at bottom, one. Either all matter is sentient, or no matter is sentient, for matter is unity. But, as the arrangement, energy and form of a brain and a plant differ, so must differ their inner sentient states. The hypothesis of spirit distinct and apart from matter is a gratuitous assumption without rational warrant. All these opprobrious terms of "brute" and "coarse" as applied to matter, bespeak the ignorant conception of men who imagine they know more about matter than its sentient effects.

To assume a hypothetic extended substance of being is to put the external symbol for the real. A constant ego feeling persisting forever is all there is of being, as I view it. This feeling is symbolized in the phenomenal by the atom—an abiding centre of force. Feeling is the noumenal and representative feeling the phenomenal. There is no above, nor around, nor beyond, nor beneath, nor within to this; it is the all in all, and knows no unknown nor Unknowable! Persisting feeling is the sum total of being. If we hypothesize an extended substance for a persistence, we only confuse our own logic, and do as Spencer at times unwittingly seems to do, i. e. fall back on the already rejected symbol. It is true, we can by no means dispense with our material symbols, for only by their aid can we reason on objective existence, but we should never forget that we are dealing with symbols. Lines and curves made into letters, and letters arranged into words and sentences are good to represent ideas, but should some one insist that these symbols are the real ideas he would but parallel the logic of those who make matter the real of mind. Symbolic thinking that excludes dimension is no thinking, for a symbol that is dimensionless is nothing. But change your standpoint. Look into your subjective self and the reverse is true. An ego with dimensions is as unthinkable as is a thought composed of lines. You cannot think of your ego feeling as divisible. The true world, the noumenal, has no more to do with material dimensions than dimensions have to do with an oath. I therefore repudiate all material hypotheses of mind substance. Mind needs no explaining, because it is immediately perceived and known as it is. A hypothesis to explain that which is itself the final ex-

planation is the height of folly. We study ourselves symbolically in space, but really in time. Seen in relation to others, that is, in space, physical symbols are necessary, but if we study ourselves as we are within, space has no existence. Time is the relation of mind to itself; space is the relation of mind to mind. I cannot think of myself but as in time, nor of this audience but as in space. Every time change for myself is a space change when viewed by another. Successive ideas in me would be observed as successive space changes or brain motions viewed from the phenomenal. Dimension is only one form of feeling out of many possible modes. Endow us with a different set of sensory organs and a new world would start into being, utterly contrasted from the present. As a partial illustration witness how the bloodhound by a superior delicacy in the olfactory nerves is enabled to trace the fugitive where sight itself is useless, and through the maze of a thousand individual scents. Matter is just such a creation of the senses, and what we now look upon as resistingless vacuous space, might, if we were differently constituted, be made to appear an impenetrable solid.

The darkness of mystery that enshrouds the Unknowable loses its intense blackness, when we assume, as I have done, that mind, and mind alone, exists. We can conceive of nothing else that can exist without dimension, color or form as the Unknowable is allowed to be by the very philosophers who still cling to some sort of a substantive thing in which they would have mind to inhere. Long accustomed to symbolic thinking they are not satisfied with the absolute knowledge of self which they possess, but hold fast to the things of sense. They even deny that they possess a knowledge of self, claiming this to be an inference. Thus, Prof. Huxley, following Hume, says: "Strictly speaking, the existence of 'self' is a hypothesis by which we account for the facts of consciousness.". Again, "Neither of the existence of 'self' nor of that of 'not self' have we any such unquestionable and immediate certainty as we have of the states of consciousness which we consider to be their effects." This is but a repetition of the doctrine of Hume, who reduced everything to fugitive impressions and ideas, without any underlying personality. Even Herbert Spencer is so far tainted with this skepticism, that, after admitting the existence of self as certain, he tells us that "knowledge of it is forbidden by the very nature of thought." How can we attach certainty to what can not be known? These statements are mutually destructive. Either "self" is known, or it is not certain. The suicidal nature of the logic that talks of "states of consciousness" being more certain than the "self" of which the states are predicated, can be easily shown. For there is no state of consciousness that does not contain "self" as a necessary element. All consciousness is "self" consciousness, and a recognition of "states" is a recognition of "self." There is no such a thing as detached "states," apart from a permanent individuality, ever realized. The states are known to be states by virtue of a perceiving self. Consciousness is continuous and not fragmentary. At no moment is it unconscious.

This idea, that men have numerically distinct and unblending states of consciousness is a philosophical figment. And it is this figment that has given rise to the opinion that self cannot be known, seeing that if we are ever in a condition in which we have no sensations there can be no self knowledge. We talk of particular sensations, and we talk of a series of sensations, but these expressions only serve to show the finitude of definite thought. For between these defined and pronounced states, every one recognizes an undefined transient state that has passed before we have had time to express it. We stand between two eternities, the past and future, in the immediate now. Before I can tell you about that now it has passed. For the now that my first articulated syllable referred to was not the now contained in the last. A philosophical quibbler might contend that I therefore know nothing about now, seeing that it is never a defined thought. The now I think clearly about is always past. Analogous to this is Spencer's denial of self-knowledge. He says: "If, then, the object perceived is self, what is the subject that perceives? or, if it is the true self which thinks, what other self can it be that is thought of?" The solution to this problem hinges on the question of immediate perception. Have we a knowledge of the immediate? I maintain that we have. Although time enters as an element into all clearly defined thought of self, it does not thus enter as to self-existence, for that is immediately known. Any given thought or feeling is a state of self. Self thinks of past states, but feels present ones. Self is past retrospection, future perspection, and immediate introspection. The immediate feeling is "me" and that feeling sums all past feelings, and anticipates all future ones. In the face, then, of current philosophies, I contend that self must therefore be both subject and object of thought, or it is never either. If never either, then it never exists; and we thus reduce both the external and internal world to a negation. A phantom called mind has conjured up a phantom called matter, neither of which have real existence. Is this the outcome of philosophy? After seeking to prove that we can know nothing of self, these philosophers jump their own conclusions, and crawl back into existence through the loop-hole of "necessary belief." Now I deny that thought must end in an intellectual suicide. The entire chain of reasoning by which self knowledge is denied is a palpable sophism. It ignores the patent fact that the noumenal "me," is an IMMEDIATE feeling that compasses all the past and present. It, alone, needs no substratum of being, for it is that being. It needs no explanation for it is self known. To attempt an explanation of an axiom is sheer nonsense. Sensation is axiomatic; self is axiomatic; known as they are.

In harmony with the doctrine that I have advance is the fact that all our physical scientific theories, prove themselves to be mutually destructive, when pushed to their logical conclusions. This has been shown by Spencer, but more elaborately by Judge Stallo of Cincinnati, in his late work on "The Concepts and Theories of Modern Physics." In that work he completely demolishes all our physical theories, when conceived as more than symbols of things. The

scientific world has, up to recently, been making the stupendous mistake of supposing the apparently outer phenomena to be the true real. As a result, the facts of Nature have pushed their physical theories into a *reductio ad absurdum*. Take an illustration. The phenomena of light has necessitated the hypothesis of a material inter-stellar ether. It is a known fact that the rapidity with which wave motion is transmitted depends on the density and elasticity of the medium. Thus, sound will travel faster through water than through air; faster through wood than through water, faster through iron than through wood, &c. The denser the medium, with equal conditions of elasticity, the greater the speed. Assuming two media to have the same density their elasticities are proportional to the squares of the velocities with which a wave travels. Now, it has been calculated, that were this hypothetic ether as dense as air, the known velocity of light necessitates the conclusion that this ether would resist a pressure of fifteen million million pounds to the square inch. That is, this hypothetic substance over which light travels, must, to meet the requirements of physical theory, be indefinitely more dense and elastic than steel. And yet, worlds traverse this substance without perceptible retardation. We exhaust a receiver of all its material contents, as far as may be accomplished, and when we think there is nothing left, a formless, resistingless, invisible, unsensible something abides, which we are asked to believe as extended without extension, elastic without resistance, and dense without form or quality. It should strike us that there is something essentially wrong with theory, when theory thus conflicts with sense.

We are driven to the conclusion that our material conceptions of being are all illusory. The outside reality possesses all the possibilities of the effect we call matter, and much more. Matter is discrete, but the Universe is a plenum. When we interpret the symbolism of matter as but an index of persisting mind, we then begin to understand Nature. The divisions of spirit, soul and matter no longer perplex us. Not two things, but only one exists. Viewed from the side of the ego it is known as one thing; viewed from the non-ego, or phenomenal, it appears another. The same fact that is motion objectively is consciousness or sensation subjectively, just as the same thing that is sound to the ear is motion to the eye. All motion is rhythmic, and all sensation is rhythmic. The correspondence is complete. My will initiates motion, and motion arouses will. How can will produce motion unless its objective state is motion? How can motion appear as sensation unless its subjective state is sentient? If any motion is sentient then all motion is sentient. If motion is sensation in one place it must be so in all places. To think otherwise, is to hold to a miraculous creation of sensation. Let us cling to the law of uniformity. All matter is sentient or no matter is sentient. All motion is a condition of sensation or motion is never a condition of sensation. There is no logical half-way ground on which we may rest. A miraculous transmutation of a particular mode of motion into sensation is utterly unthinkable, and cannot for a moment be entertained.

What reason have you for believing that I am conscious or have sensations? Simply this. You perceive certain motions established by me that you interpret as symbols of consciousness. Why do you interpret a few kinds of motions thus, and not all? Because they are motions common to yourself when you are conscious, and you have learned to interpret the external symbol in terms of your own internal conscious state. If certain facial motions occur in me which you call a smile, you at once realize my internal state of feeling. If the brow contracts in anger, or the hands are clinched and the features distorted with pain, the outer symbol conveys to you the inner emotion. But should a state of feeling arise in me unknown to yourselves, and that state be expressed in an external motion never before witnessed, the symbol would be wholly unintelligible, and awaken in you no consciousness of its having, like the rest, a subjective side. Motion is motion no matter where found, nor what its direction or amount, and if it has a subjective side in one direction it must in all, and, if in one amount, in every amount. We may not be able to interpret its subjective side, and, failing in this conceive it to be divested of such, but if our conclusions are worth anything at all we are compelled to hold that its condition of sensation must abide with it, through all transformations, or it is never at any time a part of it. The motion of my arm is induced by the motion in my brain,—speaking in terms of the visible. That which would be seen as a motion of my brain is felt by me to be a sensation of willing. It is utterly impossible for any one to think out a rational proof of my consciousness except by assuming that motion and sensation go together. What I know as will you know as motion. I know it as it is; you know it symbolically. You can see nor imagine anything but motion as a symbol of mind. Optically and logically only motion appears as the objective equivalent of sensation. Extended body changing and mind are the two sides of the one identity. Seen, we call it matter; felt, we call it mind. Seen, we call it motion; felt, we call it sensation. Seen, we call it form; felt we call it memory. Every condition of form is a condition of memory. Every mode of motion is a mode of sensation. Prof. Tyndall, as also Spencer and Du Bois Reymond, deny this identity on the ground of its inconceivability. No continuity of thought, they claim, can be established between a motion and a sensation. Prof. Tyndall says the effort is like attempting to "soar in a vacuum." While admitting this true, it does not in the least invalidate the conclusion that motion is the symbol of an underlying mind. These men are eternally forgetting their own doctrine that motion is but a sensation, having no actual existence. We "soar" in the same "vacuum" when we attempt to identify light and motion, and yet Prof. Tyndall discovers no incongruity in this, for it is his favorite doctrine. It is as much an impossibility for us to bridge the mental chasm between light and motion as between mind and motion. Both are utterly contrasted, having no element in common. Shall we therefore conclude that light and motion are two distinct things? Just as well do this as to declare that mind and motion are separate

entities for a similar reason. The fact is, had Prof. Tyndall kept clearly before his mind the admitted truth that motion is only a sensation, and hence is no more the real than light, sound or taste, he would not have talked so confusedly. Motion is as much a mode of light, as light is a mode of motion. We simply translate one sensation into terms of another, and sight being the leading sensation, has been the one in which all others are expressed. But we should never forget that the sensations of sight are no more the real than the sensations of sound or taste. The essential error in Prof. Tyndall's objection is that he is looking for a connection in the wrong direction. Assuming motion a reality he cannot think out a transition between that and mind. No more can I. The conception itself is false to Nature. Motion is not metamorphosed into sensation; motion is simply a symbol in consciousness of the external mental state, which can never be known by us save in terms of these symbols. It requires endless repetition to keep this fact in view, for the incongruity between matter, motion and mind is so great, that the average thinker cannot hold the ends of the thought long together.

We come now to test our metaphysical reasoning with our practical experiences. If there is an element in our experience that positively belies the conclusion we have reached, then our conclusion must be set aside. It is not enough that we cannot prove our conclusions true by appeals to unexplained phenomena, but these must be of such character as to positively forbid it.

A certain mass of facts exist relating to life and mind. A number of theories are in the field purporting to explain these facts. All the theories so far advanced are divisible into two classes: First, those which localize the connection between mind and body, and, second, those which diffuse the connection through the whole system. The early past held to diffusion of soul through the entire body, which was an exact counterpart of it; now the educated are divided between diffusion and localization, and of each of these there are two branches, the materialists, and spiritualists. Lewes was the most ardent disciple of diffusion among materialists. Huxley champions localization, while Spencer is non-committal. Bain, is positive in the doctrine of diffusion, and emphatically asserts that the brain works as a whole, and that sensation does not occupy any one point. Huxley makes the body a machine controlled by purely mechanical principles, and makes consciousness a property of this machine, which appears at a single point of the brain when in good working order. As far as I can gather from his language he seems to hold to a mysterious transmutation of motion into thought, under certain conditions.

Let us revert to a few of the facts over which these giant minds have waged war, a war not yet ended. Experiments on human beings, given by disease and accident, have shown that cerebrum, cerebellum, spinal column, nerve, muscle, &c., can each be injured without immediately obliterating consciousness. Every organ, including the heart, can stand a considerable degree of damage without causing death. Large portions of the brain have been torn away by ac-

cident and in battle and yet the sufferers have survived. Only damage to the region near the junction of the Medulla and Pons Varolii at the head of the spinal column, as it terminates in the skull, appears to be instantly fatal on the slightest injury. The prick of a needle will there cause instant death. Post-mortem examinations have shown disease in every part around this region, approaching this region, but never plainly in it. Death takes place in every case of spreading brain lesion before it gets there. What can such a mass of facts, accumulated through a century, mean if not that the seat of sensation has its special location somewhere in here? Here, too, the nerves of sensation have their grand centre according to the discovery of anatomists. Every part of the body has complete division of function. The functions of most other parts of the body and brain are pretty well established, but unless this portion is the special seat of sensation no other function can be assigned it. Why, in such perfect division has sensation not a special seat devoted to itself? So reason the localizers.

That is all very well say the believers in diffusion, but our store of facts point to this as only the outlet of a few prominent features of sensation. When we see two or more pieces of matter of like structure, we conclude that it has like properties. In the brain we have gray matter of the same structure and composition as in the spinal column. We see, too, that they perform like functions. Why do you say that one piece of matter, in one place, feels, while denying feeling to another piece that does the same work, possesses the same color, structure and ultimate chemical composition? See, here is a decapitated frog. We put some strong acid on his back. Though without a head, it evidently irritates him, for he raises his leg again and again to rub it off. We put some where he cannot reach it with that leg, and see, the other comes up to rub it off. Cut off the leg that can reach it, and he still strives with the stump. Failing in that he will try the other leg again. After a few frantic efforts he will give up in despair. Now we bring something near his back, where the acid is, and move him against it. Why, he is even teachable, for he voluntarily repeats the movements we taught him. All this without a head. We can multiply such facts by the thousands. What, then, becomes of your special seat of sensation in the brain? All such facts show me, say the diffusionists, that while it takes the whole system to produce distinct sensation, yet every part has a dim sentiency, and the whole nervous system gives the complete ego feeling. If the facts stated do not prove that the frog still feels and wills then it would be difficult to devise proof that any being is ever possessed of these powers.

But, reply the localizers, you permit appearances to deceive you. The actions you exhibit, on the part of the frog are all purely reflex, and performed without sentiency. We will bring a case within the range of direct knowledge. Here is a man who has had his spinal cord broken, and all his members are paralyzed. He has no voluntary powers over his limbs as he will assure you. If you touch him he cannot feel you, and cannot voluntarily move a muscle; yet

if you tickle the soles of his feet, his legs will be thrown into violent and spasmodic action, precisely as if he was conscious of feeling, and endeavoring to withdraw his feet from the irritation. Ask him, and he will assure you that he has no feeling whatever in the matter, and cannot account for the movements of his own legs. We can thus determine the existence of unconsciousness in our own experience of these reflex actions, and are justified in concluding that the movements of the frog are of a similar character. Without connection with the sensorium there can be no consciousness.

We have now before us two apparently contradictory classes of facts, pointing in opposite directions, and leading the best minds to different conclusions. Both classes of facts are strong, and, in presentation, incontrovertible. Both must be right; and no theory that cannot harmonize them is worthy of acceptance. The claim that involved, adapted and persisting motions to a definite end, like those of our headless frog, can be gone through without sentiency, makes a heavy draft on our faith in authority; and yet, this is the current theory among the leading physiologists and physicians.

Let us bring the problem up from another point of view, going lower in the scale of organic being than either man or frog. Let us take the polyp. We cut it in two, and not only does it continue to live, but each part grows out again into a perfect animal, and continues to perform its original function. Still lower in the scale we find our animal but a single cell. Look up the line to man, and all you can discover as difference in the successive steps, is but aggregation of cells, with division of labor, and adaptation to such aggregation. First we have one cell, then two or three. These latter may unite and divide spontaneously, as I have frequently observed them to do under a microscope. Eventually, the division of labor is carried to such an extent, that each cell is dependent on the other for sustenance, and they cannot live apart. They are then born into their places and duties within the system. After millions on millions accumulate, forming immense organisms, and the adaptations become complex, adapting them each to the other, and an ever changing environment, man himself appears. Every cell in his organism, I hold, is conscious. All organisms are societies, and all permanent societies organisms. Just as men in primitive societies little differentiated, are capable of filling all their wants, being carpenters, shoemakers, weavers, farmers, &c., as occasion requires, independent of the general body, and can survive even should a large part of this be cut off, so our primitive cells have the power of filling all their wants, and can survive the destruction or mutilation of the body, as in the case of our polyp. But when function becomes specialized,—when men know only one trade, knowing that well—they become dependent on society for existence, and cannot survive its serious derangement. So, too, with our cells. Their duties become specialized as they ascend the scale of being, and, with every step of ascent their dependency increases. The degree of mutilation an organism can survive, marks its position on the scale of development. Function

varies with degree of intelligence among cells as among men, and the same competition for place prevails. The spinal column of the decapitated frog gives every evidence of consciousness. A thing that can be taught a lesson in adaptation to environment, as our headless frog proves itself capable of doing, has intelligence somewhere. The movements it exhibits are governed by some cell,—or deeper, some atom,—in control of the nerves in the spinal column, I believe, just as the movements of a regiment of soldiers would be governed by the captain, though severed from the main army. In cutting off the head we merely broke connection with the leader of the system. The destruction of the spinal cord, in the case of the man referred to, was a severance of the body from the central ego, but as the body is a colony of conscious beings, its varied functions still continue. We delude ourselves with the supposition that we perform the movements peculiar to our bodies. The will may be the initial and guiding cause, at times, but the great storehouse of power lies beyond us in conscious systems we know not of. The largest part of our bodily functions are involuntary, and purely automatic, so far as we are concerned. Each cell of the brain has its own duties to perform, and each is the depository of its own memories. Destroy certain portions of the brain and their corresponding memories go with them. The central ego, at the end of the vast bundle of nerves terminating near the Pons Varolii beats responsive to all the mental and sentient powers of the system, and when these are impaired, it suffers a corresponding loss. All other egos within the system, are, presumably, limited to a few sentient modes. That we are not directly conscious of their co-operative activities is not at all against our theory. Consider the case of the Christine sisters, exhibited in one of our traveling circuses. These girls are joined together at the pelvis, and, below the point of union, have common nerves of sensation. What one feels the other feels, although possessed of distinct and separate limbs. I have myself, tested them upon this matter. Now, if these girls had no intelligible means of communication, neither would know that the other had sensation at the same moment with herself. Hence, you see, our own unconsciousness of the co-operative egos of our system does not militate against the theory. By this theory we harmonize two contending schools of thought and meet the requirements of every fact. So far, our conclusions seem perfectly safe.

We will now face the formidable problem of spontaneous generation. As far as science has spoken upon this matter, results seem unsatisfactory for our doctrine. Prof. Bastian claims to have had experimental evidence; but Pasteur, Tyndall, and the weight of authority, deny this, claiming that a repetition of Bastian's experiments in their hands, under conditions that exclude air germs, have, invariably, been followed by negative results. In view of this fact, Sir William Thompson, and others, have conceived the hypothesis that life germs were first brought to this earth on aerolites. Are we reduced to this alternative? If we are, then, what I have heretofore said, is a piece of worthless guessing.

The mere fact that man cannot duplicate Nature does not argue that she is not competent to her own productions. Before men made matches or had their flint and steel, or even bow and spindle, they used fire, and claimed it came down from heaven from the Gods. Hence the fire worshippers. Then it was they believed there was no fire without fire. God, they claimed, made fire, and man could not imitate its production. So, until lately, has it been in regard to organic products. Men were wont to claim these as peculiarly God-men, until chemists began to imitate them. But the probability that man will ever artificially produce a living organism is infinitely small. Could a savage, by throwing pieces of iron and wood together produce a telephone or sewing machine? No more,—and for analogous reasons,—should we expect decoctions of unorganized matter to suddenly spring into the comparatively highly evolved system of a Moner. Between protoplasm dead, and bioplasm living, there must, in the nature of things, be an immense chemical hiatus. That this should be bridged fortuitously by empirical conditions, seems to me the height of improbability. But, assuming a happy hit to have enabled a decoction of hay or meat to reach bioplasm, it has yet the task to perform of differentiating itself into a protozoon,—a feat next to impossible. Organized life is not an elemental step from the inorganic, but a vast series of complex changes. We know of no animal unpreceded by ova, nor plants that did not grow from spores or seed. The egg and the owl problem is a very old one, and it is likely will be much older before it is solved. Darwin has forced the solution of it away back into that mysterious region where the three kingdoms of Nature converge. Crystals are Nature's earliest effort to approach organization. The polariscope has shown a close kinship in structure. What say the crystallographers? Monsieur De Gernez has probably the largest following among them on this question, and his dictum is: "No crystal without a crystal." They entertain a theory, analogous to the germ theory, viz., that the air is a storehouse of minute crystals of every kind. These dropping into solutions of crystallizable bodies initiate their arrangement. They declare that protected solutions have never in their hands crystallized. If Gernez is correct, the egg and owl problem stretches away into inorganic Nature with a never-ending vista. One kingdom of Nature is evolved into another by essentially the same process. Prof. Grenfell, however, some time ago, reported to the Royal Geological society of Great Britain, that he had succeeded in crystallizing Sodium Sulphate, under test conditions by scratching on the containing glass or copper vessels. Scratching on platinum, silver or other substance had no effect. Here, then, either a removed flake, or a critical vibration caused the change. A mixture of chlorine and hydrogen protected from the critical vibration of light will remain ununited for ever. The whole vegetable world is kept alive by the critical vibrations of the sun beam. Fire is kept up continuously by the critical vibrations of combustible molecules transmitted to one another. Whenever or wherever we fully know any of Nature's processes, we discover it to be dependant upon some crit-

ical vibration. If we allow a crystal to drop into a proper solution as a matrix, it carries with it the critical vibrations necessary to polarize the ready molecules. When a germ, spore or seed is placed among proper conditions for development, it imparts to its surroundings the critical formative vibration. The more complex the conditions and vibrations the more difficult it is for man to artificially reproduce them. If, as I hold, modes of motion are symbols of inner sensations, these critical vibrations are attractive modes of sentiency. Harmonic sensations, like harmonic modes of motion, are attractive. Love would seem to be chemical affinity. All Nature is seeking conditions of harmony. A channel of least resistance,—i. e. harmony—tends to perpetuate itself, and is the cause of subsequent motion in that direction. Hence the persistence of reproductive modes. Nature, in reaching out in every direction, tends to a direction harmonic with the totality of changes. A quasi-sentiency is forever selecting the road. Innumerable failures and readjustments occur; hence, on the surface, Nature appears to be the grand abortionist and murderer of unsophisticated innocence. But these tentative efforts are all disciplinary. Nothing so stupid that it cannot learn to shun the avenues of pain and seek those of pleasure. The harmonic adjustments around us admit of but two explanations. Either they were thus constituted by the intervention of an outside God, or all matter is sentient. It is wholly impossible to conceive how such an organ as the eye could come into being unless a power of sentiency preceded it and selected the way by clinging to every agreeable and beneficial adaptation. This hypothesis is strictly scientific, and meets all the facts in the case, whereas the theological explanation does not account for Nature's failures. Nothing in man's incompetency to duplicate natural processes can be held as an argument against our theory.

Building on our conclusion we will now define evolution as a change from individualism of conscious centres to associationism, with division of function. First, we begin with the single centre or atom. Next we have a centre of centres, then centres of centres of centres, and so on up to the mightiest organism. The initial ego, around which all the rest cluster, and to whose mode of being they have become co-operatively adapted, rules the system. Progress is an adjustment whereby an individual becomes the director of the mass in the line of justice or harmony. Follow the evolution of living beings and what do we discover? Increased complexity of arrangement, increased interdependence, increased specialization of labor performed. Carpenter and Huxley have clearly proven that we are but reflex machines, and that every action we perform can be gone through without our consciousness, and without consciousness at all, if adapted motions are ever executed without consciousness. On this pivot hinges the whole problem. Is spontaneous motion ever unconscious. I contend not. Nothing but the gratuitous figment of dead matter could ever get such minds as Huxley and Carpenter to propound the theory that the definite movements to a desirable end, of a decapitated frog are executed without sen-

tency. What is this so-called reflex action that acts so persistently to a determinate end? If it does not prove sentiency then nothing does or can prove sentiency, and every man may limit his neighbors' sentient states as he sees fit. At one time only the chiefs of tribes had souls. Finally, all men were accorded their possession, but women were still excluded. Eventually it became possible to think of even a woman as having a soul, but the animal creation were yet denied. At last noble animals like the horse, and beautiful birds were permitted to enter the celestial paradise; but pigs and lizards, bugs and fleas, snakes and polecats, are still quarantined and relegated to eternal oblivion. What does all this crude discrimination mean, but that, as Pope says, "hell is built on spite, and heaven on pride," without regard to reason. Away with these senseless and arbitrary partitions of Nature! A comprehensive view of her domain teaches us that she has no boundary lines separating one kingdom from another, or one animal from another, but that all compose a vast chain, bound by indissoluble links, stretching away beyond ear and eye and sense into that undeciphered realm we call inanimate. Nowhere can we point and say, "Here consciousness begins!" Our memories are fading away, but memory does not limit eternal existence. The home of childhood, the scenes of infancy, prenatal pains and prenatal conditions, all shrink to a point, like a uniformly wide road on an immense plain, and at last disappear beyond the horizon. The mineral shades into the vegetable, and the vegetable into the animal, and the animal fills in all gradations up to man. Truly, then, "man hath no pre-eminence over the beast" but the beast hath pre-eminence over man's ignorant conceptions. The beast is but embryotic man, and all that has fallen to our lot, or that may befall, yet awaits it on the eternal march of progress.

Why does inorganic matter present the appearance of death? Because our senses only compass a fragment of its activities. A mineral is a mob, with no division of function, and no co-operative movements. Each atom follows its own sentient modes, and operates so naught but individual ends. Only in the atom is there in reality spontaneous power. All the spontaneous movements of a vegetable, cell or man, are traceable back to the atom. Spontaneous movement in an animal is perceived everywhere, in a plant in the cells, in a mineral, in the molecules. If we saw a crowd of men at so vast a distance that form and feature and individual movements were unrecognizable, it would present the appearance of a dead mass, moved occasionally by extraneous forces. But let some one of that unguided mass gain leadership, and be enabled to direct the movements of all, as in an army, then their concerted action would become visible, and exhibit definite purpose, and we would immediately endow the mass with life. This I believe to be the precise condition that obtains in the mineral world. The individualities are unorganized, and too minute—too far off, as it were—to be cognized by the senses. It is a notable fact, that every increase in the power of the microscope brings new life to light, where all was thought to be the silent shades of death. Increase this power indefinitely, and

eternal, all-pervading life would break upon the vision of man. Aggregation of individualities, with division of function, solves the mystery of our being.

All consciousness is the resultant of the action of mind on mind. Our ego feeling is the recognition of continuity within all change. It is the sameness that runs through all the difference of sensation. This feeling is unity, and can never be conceived as dwelling in or being the resultant of many parts. Hence, the combined action of the brain cannot be supposed to give the feeling of individuality. The brain, however, is the organ that makes possible by its diverse modes of action, that vast range of thought and sensation which we experience above the lower creations. Quality and magnitude of brain, means quality and magnitude of thought and feeling. The phenomenal brain is the legible symbol of the inward mentality, or the real. Each part of the brain has its own modes of motion or feeling, and the mass of these so called vibrations press upon the central ego where they are all unified. Just as the image from a camera is composed of myriads of selected modes of vibrations that together make the landscape, so the myriads of vibrations from all parts of the brain, make thought in each sentient centre, where all the nerves converge. If the brain is excited unevenly, as at night, we have outlandish dreams. If it is diseased in parts, the modes of sentiency in these parts are altered, and fantasies roll in upon us making us insane or delirious. Release the ego from this diseased brain, and while its mental powers are most likely diminished, it will be in a more rational or normal condition as to Nature. The individual memories that may attach to a man, irrespective of his brain connections we know nothing of, and here speculation becomes useless. It is something for us to know, however, that there is no death, in the sense of annihilation, and the vast possibilities of the great unknown should help us to meet the King of Terrors, with at least a hopeful heart.

We have now fulfilled the logical and experiential conditions of thought, and find practical agreement. A psychological analysis has shown us that matter is but a name for certain sentient states having no outer existence,—or is the effect of an unknown cause. A glance at scientific theory, based on the supposition of external matter, has shown these theories to be contradictory, and mutually destructive. But, by the constitution of our minds which recognizes a "self" and "not self" as essential correlatives, we are compelled to believe that something is. Philosophers have called this something unknowable. Introspection discovers mind to be the only thing capable of being thought of as immaterial, and this negation of matter and its attributes, is admitted as a necessary condition of the outer unknowable, by those philosophers who cannot rid themselves of the concept extended substance, even after proving it illusive. In assuming mind to be the all in all we ignore unknown causes, adhere to the law of parsimony, and maintain an identity of being throughout the Universe. We have discovered no fact irreducible to agreement with this hypothesis, and, on the other hand, find that it illuminates and explains sundry contradictory experiments, which divide some of the ablest thinkers in the field of physiology. Matter and its modes we hold to be symbols of states of mind. Bain's "two-faced unity—the one substance, with two sets of properties—mental

and physical" while an approach to the truth, is not, in my judgment, strictly correct. Mind is not a property of anything. The properties of matter are mind's creation, but it is absolute being. One of its "faces" is a phantom; the other real. There is no conceivable connection between mind and matter save in the manner I have presented. Matter is a symbol—and, to us, an indispensable symbol—yet is none the less unreal. How mind affects mind we will never know save through the symbolism of matter. For this cause, matter will always possess for us a relative reality. Its modes are indices of mental states. Some of these modes in the higher organisms we have learned to interpret, but in the lower world, not knowing the sentient state, the symbol has carried no instruction, and we have thoughtlessly concluded eternal death prevailed. We see molecules go to work, and build crystals of exquisite form and, like men, follow habits peculiar to their own kind. But we deny sentiency. We see vegetables spontaneously contract, like the Venus Fly-Trap, and other sensitive plants, upon contact. But we deny sentiency. We have proof of action to an end by neural centres, with even teachableness, as in the case of the decapitated frog. But we deny sentiency. We have proof of intelligent co-operation in the cell work of every organism, with division of labor and working to remote ends. But we deny sentiency. We watch the incubation of an egg till it breaks upon our sight as a living chick, but we deny sentiency to the egg, and smuggle in something we call a spirit at some indefinable stage of the development; or, if a materialist, make such sinners of our judgments as to credit the monstrous conceit that consciousness springs from nothing, by some unthinkable and mysterious natural alchemy. Such misty notions can never satisfy the healthy judgment. Away beyond the range of our senses dwell the unseen egos of the Universe, and only when they have unitedly constructed and perfected the organism do we perceive their joint activities. All the proof of intelligence we have in anything, is adapted and spontaneous motion, and this proof we can find throughout the entire range of Nature.

Mark, now, the all-embracing scope of our synthesis. All Nature is built up of egos like myself. So-called matter is the symbol of mind. So-called motion is the form of sensation. Sensation and change are co-extensive and co-equal. The primitive element of sensation is a simple shock. Sudden change is the objective form of shock. Rapidity of vibration is intensity of feeling. Quantity of force is volume of feeling. Complexity of vibration is quality of feeling. Rhythm of motion is rhythm of feeling. Form is memory. The act of remembering is the restoration of a former mode of vibration. Pleasure is a harmony of complex vibrations. Pain is a discord tending to separate the ego from its connections. In fact, every mode of matter and motion has its corresponding mode of sentiency, and it only requires knowledge to read the mind hieroglyphs of all Nature. The Universe is an organic whole. Increased life is increased adaptation; perfect life is perfect adaptation; and this can only abide with the Great Central Soul. Oersted's beautiful thought that "the laws of Nature are the thoughts of God" may contain a soul of truth if properly understood. At all events these show finite intelligence as a proximate cause, however they may be related to the ultimate. Peering with prophetic gaze through the dreamy haze of futurity I see the coming man of a far off civilization reading these indelible "thoughts of God" registered all around us, and which we in our ignorance can only stupidly survey, by the aid of a new science of psychology which will sink our present cast-iron mechanics into more comprehensive psychical laws. Banished forever will then be the darkness of the Unknowable, and its desert waste will blossom with all-illuminating mind. A certain lightening of the heart accompanies a contemplation of that glorious future, when the teachers of the race will have realized the poets dream of finding "books in the running brooks, and sermons in stone," and by the aid of a new alphabet become.

Interpreters of Nature's lines,  
And of the symbols and the signs  
In her eternal book.  
They'll read God's Scriptures everywhere—  
In stellar worlds, in sea, and air,  
And in the flowery sod;  
They only, then, the world's divines,  
Through whom the light of Nature shines,—  
The great High Priests of God!

