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## THE SOUL AN ENERGY.

BY C. H. REEVE.

IF YOU remember that you are conducting a journal "devoted to the religion of science," you will see that your position and its responsibility is one of the profoundest gravity. You may uproot, and leave desolation in places where hope flourished abundantly and content reigned supreme. You may start men and women to moving in new ways, which they will be unable to follow, while unable to return; and must become Ishmaelites, wandering in the deserts of hopelessness, perhaps despair. For this reason an obligation rests on you to consider the suggestions your own teaching prompts your readers to lay before you. It is in this sense that this paper is sent you. Not for the press, unless you desire to use it, but in response to your article in your issue of September 20 of last year. And it may not be unworthy of print.

In the common comprehension the word "Soul" conveys the idea of a disembodied spirit, having consciousness and immortality. Specifically, it is regarded as ourselves, as individuals, in a spiritual form existing forever. In reality soul is the vital force in an organism that keeps it living and enables it to perform the functions that are the legitimate outgrowths of its organisation. Man as a whole is a "living soul." The real soul in him is the combination of forces that give him life and consciousness and that keep him living and conscious. If he be an idiot he is a mere animal soul. If he is possessed of a superior mental organism and be highly educated he is an intellectual soul. If his perceptions be acutely ethical and his combination of faculties be such as to prompt highly moral impulses he is an intellectual moral soul. When the vital forces that sustain life fail to operate he ceases to be anything but a dead organism, in which, different forces instantly begin processes of disorganisation, and the creation of other combinations of the elements that constituted his organism. In that operation all the soul there is exists in the several forces that are in operation, each of which acts intelligently in creating and maintaining new forms of life in each new combination formed in the processes of dissolution. The soul in each exists so long as each new organism exists and no longer. Every chemical change that takes

place begets a new life in each new combination it forms, to live so long as that action continues, whether it be instantaneous or lasting for long periods, and the *soul*—the *spirit*—is the force—separate or combined—that maintains the action and enables each particle of matter to perform the function necessary to the final end.<sup>1</sup>

Nothing can exist without soul, and that soul is the something that enables it to exist. The human mind cannot conceive of anything that is not substantial. If it thinks of a spirit it gives it a human form and human attributes; because it cannot conceive of a thing without form, nor of a form higher than the human form, nor of attributes higher than human attributes. By way of comparison it exalts those attributes when it tries to conceive of a superior being, as of God, or angels, or spirits, etc., but it is not able to go beyond the boundaries of its own knowledge, even in imagination. Its creations must be combinations of what it has knowledge of through the senses.

No human being can know what mind is, because he cannot rise superior to himself. To know what his mind is he must be superior to himself and that is impossible.<sup>2</sup>

Now I will go to the extreme limit and assert that, everything *within human comprehension* is substantial; has form, originates, exists, operates in and with matter, and cannot originate, exist, or operate without matter. This necessarily includes thoughts, emotions, feeling, sensation, ideas, words, and their meaning, and everything connected with them. They are born of matter, exist in matter, and are never separated from matter. They are as much an outgrowth of matter as are light, caloric, color, aroma, or any other thing; they cannot be separated from it and are substantial; having form and energy as matter has.

You say:

"Soul, like matter, is an abstract denoting certain facts of reality, and there are, indeed, things which are neither energy, nor matter, nor form. Take the *meaning* of the word 'logic.' Is it matter? No! Is it energy? No! Is it form? No! The word

<sup>1</sup>In theology the question is, Whether the intelligence born of the physical organism and its environments during life here, constituting what we call mind, continues to live as an entirety, and finds a place and action in some other form of organism? But that is beyond finding out, and speculation proves nothing.

<sup>2</sup>Mind is the supreme elevation of organic action.

when uttered presupposes material organs which cause a very special air-vibration. The utterance consumes a certain amount of energy, and the pronounced word consists of a peculiar kind of air-vibrations. But analysis of energy, matter, and form, will show no trace of the meaning of the word. The meaning of the word is its soul."

Let us look at this statement a little.<sup>1</sup> Words are combinations of forms, made vital by sound, in vocal utterance, by one individual, used to make impressions upon other individuals. The impressions made on the hearer by the sounds create an impulse in him ending in thought. At no stage are the sounds or words separated from matter. Energy existing in the matter, acting within and through the physical organism, causes vibrations in the medium surrounding and existing in the organism making the sounds; which cause like vibrations of the organs of hearing in another human organism, making impressions on the hearer which put into operation more energy-creating thought. (Air is not a compact body as is commonly supposed; but consists of infinitely minute particles. In comparison with their size, the distance between the particles is as great as that between the planets compared with their size, it has been asserted. Those spaces are filled with some other medium, and the vibrations affect this as well as the air.) Ideas are only thoughts. Perhaps the thought following the impressions made by the word and the sounds prompts in the hearer words in reply; and the same process operates, producing more thoughts in the first speaker. Now, at what stage of the process is matter, energy, and form absent? Every particle of matter—including air and ether—has form in which energy becomes operative, and without which it would not operate. Every vibration of the air has its own shape. Each shade of sound has its own form of wave, its own energy, its own motion, involving just so much of air and ether—unlike any other. The same forms and energy are continued through the mechanism of the ear, the aural nerve, and in the sensorium. Each and all have perfectly defined form, energy, and motion, *in matter*, and no other combination or action could convey the sense for it, or make it the vehicle for the same consciousness. If the word be read and not spoken, substantial vibrations through the eye operate in like manner. I repeat—every vibration has form, is in matter, whether in the vocal organs, the air, the ear, or the sensorium of the brain. Every thought has form and energy, is a part of the brain itself while existing in the sensorium, and the action of the several energies are consuming tissues, and they are undergoing more or less change of form; and with each change there is change of energy and motion. *Motion exists only in substance.* At no stage of action, at no instant of time

are the words, the sounds, the impression made, the idea conveyed, the thought generated, the energy operating, and the responding word, sound, impression, idea, thought, and energy operating, separated from matter; having energy and form, and all in matter.<sup>1</sup>

The conception of the subject or thing to which the word has reference is the idea born of the impression made by the sound of the word, and that idea is the thought the impression creates as the outgrowth of the impulse following action in the organism hearing, caused by the sound. Every particle of matter in the person hearing the word and affected by the sound of it as a part of its function, adapts itself to some form in the reception, gives birth to energy such as that form will permit, and forms an idea—thought—such as *his* specific organism will admit of; and makes such response as that idea will prompt *in him*. Several persons hearing the same word and sound might each have a different idea; and to each that idea would be the meaning of the word; or if not comprehended at all, there would be no meaning. There would only be an idea that they did not comprehend the reference.

The soul of a word is not its meaning, but it is the energy inherent in its use at the time when used, as a means of creating the intended impression on the organism addressed. Take a simple illustration. A horse is taught to back by pressure on his jaw with the bit, and uttering the word "back." In time he comes to associate the motion of backing with the sound of the word and will back without the pressure. (Any other sound will do as well.) Here the matter in the horse is acted on by the sound, and the *meaning* of the word is not the soul at all; but the soul is the office the word performs. The putting in operation in the matter in the horse of such vibrations as will cause the forms and energy that will end in the motions of backing. The impulse it prompts in the horse to act in a specific manner; the energy it rouses in the brain of the horse that causes him to move backward. Everything in the whole process, from the thought that prompts the word to the thought that prompts the motion has matter, form, and energy; energy and form in matter; and at no time is it separated from matter, form, and energy. Energy cannot act in matter without form, adapting itself to the matter or the matter to itself, in or on which it acts.

It is impossible for the human mind to think of an abstraction alone, wholly unconnected with the matter from which it is taken.<sup>2</sup> The word is only a means of comparison; just as concrete is. But both convey

<sup>1</sup> Every thrill of hope and fear, every feeling of joy, sadness, anxiety, etc., every ecstasy, is only brain and nerve-vibration, and each has its own form of wave-motion, and its own peculiar energy, by which the matter in the brain and nerve is adapted and enabled to perform the function of transmitting the feeling or sensation. That is, has form and energy.

<sup>2</sup> There can be a separation to consider singly, but the part it is separated from enters into the consideration more or less.

<sup>1</sup> How can there be a "thing," without energy, or matter, or form?

ideas relating to matter, the properties of matter, the outgrowths of action in matter. The idea conveyed by the word "abstract," immediately connects itself with a word having an opposite meaning, and must do so before the word can be comprehended; and the opposite deals with substance, forms, and energy, viz., reality.<sup>1</sup>

What, then, is the soul of the word "logic"? It is its power to impress on the hearer the idea of an irresistible force in demonstration. That words are so used in arranging facts as to demonstrate an undeniable conclusion. Or, that events so follow each other as to demonstrate a certain cause. The facts and the cause must be material. A word may mean one thing yet convey an idea of a different thing, or ideas of several things. Several different words may convey the same idea, yet have different meanings. That power is the soul of the word. A look or a motion may do the same thing at certain times and under certain circumstances, while at another time the same look or motion would convey no such idea. The soul of it is in its power to do it when the conditions serve; giving life, vitality, and special function, at that time; when matter, form, and energy will admit of the operation of the function. At other times it has no such soul. The look or motion have form and energy—in matter—and both are substantial: and the idea they convey is substantial and creates energy and form in the subject affected by them. The soul is the power, or faculty, or ability, to convey the meaning, and that exists only in the vitality—the *something* that makes them a living force for the time and the purpose.

Take a plant that gives off an odor. Its soul is in the inherent power to produce that odor. Take the odor. Its soul is in the power to impress itself on the sense of smell. To one without the sense of smell it is soulless. The soul of the olfactory nerve is in its power to make its possessor conscious of the odor. Take music. Its soul is its power to impress the animal organism. Take the word "space." Its soul is in the power to convey the idea of space. Yet space is substantial and is filled with elements that make matter and make the conception of matter possible. Take space itself and its soul is its capacity to contain matter. There can be no conception of space without giving it form and energy. It is only in comparison with matter that we can think of it at all, and that matter is in motion in reality and in our thought. Motion includes energy, and that is in our thought. The space between bodies of matter has form made by the matter, with constant change of form. Nutation made by the planets gives forms. Irregularities in space made by the bodies in it, whether universal space or

finite space. The sky, a room, or the inside of a hair. Space, to the human mind, has matter, form, and energy.

Again quoting you: "Soul, like matter, is an abstract, denoting certain facts of reality."

But the word can be used only as an expression of comparison and it cannot be thought of separate from matter. Reality is only something that is comprehensible in comparison with something, that is unreal. A red wafer lying on a sheet of white paper is real. Gaze at it steadily a short time and there will be a blue wafer beside it. For the time the blue wafer is a reality to the sensorium, but it is unreal in fact, and we conceive of the reality only by comparison with the unreality. (Yet the vibrations of the retina and brain that make the blue wafer apparent, have energy, and form, and matter, and are real.) So of abstract. We conceive of the abstract only by comparison with the concrete. Leverrier, taking note of aberrations in the movements of Uranus, was impressed with an idea that it might be caused by attraction of some planet beyond it. Assuming some things as fact, in connexion with others known, he estimated that an imaginary body (if real) would be in a certain place at a certain time, and wrote to Dr. Galle at Berlin to turn the Observatory telescope to that point at that time. Dr. Galle found Neptune there. This was abstraction on the part of Leverrier, his idea living in thought only, caused by impressions made by the irregular movements of Uranus. His hypotheses and calculations were all in thought, the thought created by energy, form, and matter, in Uranus or in his own organism. He was investigating something that was, as yet, unreal, by a process of abstract reasoning.

But in comparison with known realities it was, possibly, not unreal. Every thought had form, energy, and was an outgrowth of matter and existed in matter. Every figure and character in his calculations were real—having form, energy, and matter—involving form, energy, and matter, internal and external to his physical organism, but in and connected with that organism, and never separated from it. It related to supposed matter an incomprehensible distance away. Development through the telescope made the abstraction a reality, and every stage of movement from Leverrier's thought to Galle's eye at the telescope, and Galle's thought following the impression made by the sight of Neptune, had form, and energy, and matter—being in matter. The soul of Leverrier's thought was in its power to reach the unknown by abstract reasoning, based on and compared with known facts developed in matter, and the soul of the telescope was in its power to reveal the hidden unknown, all being material.

No, the soul is not in the *meaning* of things, but in

<sup>1</sup> Soul cannot be considered purely by itself without connecting it in thought with the body.

the *power* that makes that meaning known. The soul is the life of the thing. The soul is that which to the mind is reality. The soul of superstition is its power to impress itself as truth—as real and not imaginary. The soul of man is the combining action of forces that maintains the vitality of the whole organism, physical and mental; and when those forces decay, and gradually or suddenly cease to act, the soul begins to disappear or totally disappears.

It is possible that electric and magnetic energy is the soul of the Universe, organising matter, and alternately disorganising and readjusting in new forms, or enabling matter to do so, thus maintaining equilibrium; but it must operate in and with matter, and must have form adapted to the function it performs, whatever may be the time, and place, and conditions.

Whatever can make an impression on an animal organism has existence—is entity—has substance, form, and energy: is manifested in and through matter; its soul is that which makes manifestation possible. This you call materialism, and it is a truth that, human perception can take no note of anything without making it material in thought, and giving it form and energy. All matter and energy has consciousness. The formative vessels to make a hair, the enamel of a tooth, a bone, a nerve and its sheath, and every integument, tissue, and fluid, will select the material and use the energy to make it, shape it, in its proper place, and reject all other material. If obstructed, a new energy will be developed to avoid or dispose of the obstruction in some other formation. We may call the mysteries of action in matter and energy, spirit, supernatural, soul, disembodied, and all that sort of thing; but we can have neither perception or conception of anything without giving it energy, form, and substance, and that is the limitation of our faculties.

### IS THE SOUL AN ENERGY?

#### THE NATURE OF MEANING.

IN going over Mr. Reeve's article I will discuss the problem of mind, using, as much as possible, his own examples. The main difference of view, it seems to me, lies in his habit of imparting to all ideas "energy, form, and substance"; he still reifies ideas, and regards also immaterial features of reality as concrete objects. To him:

"The soul is not in form nor in the *meaning* of form, but in the *power* that makes the meaning known."

We agree with Mr. Reeve that form, matter, and energy are always inseparably connected in reality, and we grant that the brain is material and that its action consumes energy, but the ideas "soul and mind" are abstractions from which the ideas matter and energy are excluded. Matter can be weighed; energy can be

determined in foot-pounds, it is measured by the work that it can perform; but soul cannot be either weighed or measured. Soul is another kind of abstraction.

The nature of the soul lies in the form of its organism. The superiority of a human brain over a horse's brain does not depend upon the greater quantity of either its mass or its activity, but consists in a difference of form. The elementary forms of the psychic constitution of living beings have been impressed upon their sentiency by the surrounding world. These forms have been wonderfully increased and multiplied through the interaction of the various memory-traces, until they built up the human soul, and the preservation of these forms which are transferred from generation to generation by heredity and education constitutes the basis of further progress and all higher evolution.

The soul is a system of sentient forms, and the difference of form constitutes a difference of soul; but not all forms are soul-structures. Soul-structures are sentient forms and a characteristic peculiarity of soul-structures consists in their significance or meaning. The birth of mind is the origin of meaning, for meaning is the purport of mentality and the quintessence of all psychic life.

#### WHAT MEANS MEANING?

Meaning is a very subtle relation, a non-entity to the materialist, but all-important in the realm of mind. It is a relation between an object and an analogous feeling. A certain number of light-rays strike the retina and produce a commotion in the layer of rods and cones, the form of which corresponds to the form of the object from which they are reflected. This sensation produces a commotion in various nerve-tracts and rouses in the organism of the human brain the memories of prior sensations—of sensations of sight as well as of touch, perhaps also of hearing, taste, and smell, as the case may be. A white-sensation of an oblong quadrangle rouses a word-combination in the centre of language which makes the organs of speech say, "This is a sheet of paper, and this sheet of paper lies upon the table at a certain distance from the eye." The hands are ready to grasp it; the fingers anticipate a peculiar feeling of touch, and a great number of the memories of former experiences as to its qualities and use are stirred up, which may find expression, one after the other, in appropriate words. What a wealth of different forms of feeling, all of which must be regarded as accompaniments of exactly corresponding nervous actions! And these varying forms of feeling are connected, as it were, with the outer world by invisible threads; they refer to various realities through a contact with which their peculiarities of form are conditioned. As the result of a continued interaction among the memory-images of former experiences which

are constantly stirred by new sense-impressions, a feeling of a certain kind indicates the presence of definite conditions, which, as a whole, are called an object. In a word, various sensations stand for, or represent, various things or qualities of things. It is the representative element of the diverse forms of feeling, which characterises their import in the objective world and implies that they are more than a mere subjective display of sense-images, and this is what we call their significance or meaning. The meaning of sensations and words embodies their relation to the universe and knits the soul to the All, as a product and reflexion of which the soul appears in the history of evolution.

Mr. Reeve speaks of looks and motions which serve as means of imparting meaning. They are in the same predicament as words; they are symbols by which two minds communicate; and this transference of thought through the vehicle of a sign may be called—like the words of deaf and dumb people—a language of gesture.

Language, in the wider sense of the word, comprises such acts as the rider's use of the bridle, the significance of which is understood by the horse. A dog venturing into a room which is forbidden to him, comprehends at once the meaning of the motion of his master's hand which reaches for the whip and he will not fail to obey the command implied.

Mr. Reeve seems to think that I believe in meanings that hover about like ghosts. He asks (p. 4360):

"At what stage of the process [viz., of speaking] is matter, energy, and form absent?"

We reply, matter, energy, and form are *nowhere* absent. We say, when we speak of the words of a letter, we make no reference to the paper and the ink; and when we speak of the meaning of words, we mean their representative value as to the objects which they depict and make no reference to matter, energy, or form. That is all.

#### THE POWER OF MIND.

Mr. Reeve speaks of the power of mind, always maintaining that there is no reality without matter and energy. But we must not forget that the expression "power of mind," is nothing but a figure of speech; the phrase does not mean the diminutive amount of energy consumed in the brain, the nerves and muscles of either speaker or hearer; it means the definite change which a mind is able to work in the minds of others by turning their attention in a special direction, where it is perhaps most needed to avoid danger or to utilise the forces of nature.

Soul is not energy nor does it create force out of nothing, nor, as Mr. Reeve expresses it, "give birth to energy"; its potency consists in directing and marshalling the energies that exist, and this faculty of direction makes mind their master.

Mr. Reeve is unquestionably right if he means to say that mind is a potent (i. e. very important) factor in the world, destined to effect great changes. Words possess (metaphorically speaking) a power, and, indeed, they represent the most formidable power, be it for good or for evil, far greater than the force that is displayed in explosions of dynamite or nitroglycerine.

The Roman poet says "*Mens agitat molem*, mind moves mass," and who will deny that mind appears in the world to govern its affairs, to direct, and to arrange. Mind is the ruler of the world of matter. But Mr. Reeve is mistaken when he seeks the nature of the mind in the energies which it is able to rouse either by stirring other minds, or by using the marvellous storehouse of nature's slumbering forces. The nature of a word is and remains the meaning which its sound-form conveys. Words are symbols which connect with a certain form of sound a certain significance; and the communication of the sound, through a transference of its form, serves as the vehicle of the communication of the meaning, which consists in its reference to some definite reality.

Speaking creatures have acquired the habit of accompanying certain actions with certain sounds and the pronunciation of the sound has come to mean the action. Language (i. e., a system of sound-forms possessing definite meanings) grows more and more perfect, and by and by denominates objects and all the most subtle relations which play an important part in social intercourse. While pronouncing a word, a certain amount of muscular energy is consumed which causes the air to vibrate and finally throws a sense-irritation into the auditive nerve of the hearer. The irritation of the nerve rouses the cerebral structures of the same form in the centre of hearing which possess either the same or a similar meaning according to the common experiences of both the speaker and the hearer.

It sometimes happens (as Mr. Reeve rightly says) that, as the result of varying experiences or of a different education, the same word is not understood by the hearer in the sense which the speaker intends to convey and a misunderstanding is the result. But in all these cases the soul of the word is the meaning attached to a peculiar form of feeling, or of nervous commotion that is required in thinking or pronouncing the word, and the energy which its pronunciation consumes is as incidental as the ink in which it may be written.

The amount of energy in the Niagara falls is enormous in comparison to the energy consumed in the brains of many millions of people. The great cataract is, according to the gravity that resides in its mass, a change of the potential energy of water at a higher level into the kinetic energy of falling water. The water has no intention to convey meaning; its peculiar form of

action does not represent surrounding conditions; the river possesses no soul. It is quite true that a certain amount of vital energy is indispensable for a healthy brain, but that which we figuratively call "the power of genius" has nothing to do with what the physicist calls energy. The power of a scientist to discover unknown facts, the ability of a philosopher to elucidate truths, and the keenness of a mathematician to solve problems, have no mechanical equivalent.

#### TRUTH, THE IMPORT OF MEANING.

It is very important for a speaker and a writer to consider the minds of other people which he rouses for good or evil; either by impressing his ideas into theirs or exciting their antagonism in the opposite direction. But of greater importance is the truth of the meaning of mind.

What is truth?

The representative relations of the various soul-structures may be so as to tally or not to tally with its objective conditions; in the former case we call them true, in the latter untrue. Our words and word-combinations symbolise facts either real or imaginary, and our all-absorbing aim must be to make them correct representations of the realities to which their meaning has reference.

#### REAL AND MATERIAL.

Mr. Reeve says:

"It is impossible for the human mind to think of an abstraction alone, wholly unconnected with the matter from which it is taken."

We say, it is not only possible, but it is necessary to *think* some abstractions without including the idea matter. Take as an instance the idea of mathematical points and lines. What Mr. Reeve means is that reality, as a whole, always includes matter, energy, and form—a truth which we have never denied.

It is a mistake to identify "material and real," for there are features of existence that are real, but not material. And we must also bear in mind that abstractions do not denote mere fancies or nonentities. Soul is an abstract and not a concrete object; yet is soul real.

While Mr. Reeve endows adynamical existences with energy, he, on the other hand, attributes consciousness to all matter and energy<sup>1</sup>—a view which we cannot accept. We grant that the elements of consciousness are present in everything that exists, but not consciousness.

Mr. Reeve probably means to say, and if this be his meaning we agree with him, that the whole world is one inseparable whole and all our ideas, matter, energy, form, consciousness, etc., are but parts of it, features that have been abstracted from it in thought.

<sup>1</sup> See line 8 in the last paragraph of his article.

We have no word to denote the various parts and features of reality in general, except such words as "things or somethings." Sometimes we cannot help using the word "thing" in a general sense, and not as a synonym of "body," or "object," or "concrete thing." Therefore, I need not justify myself or reply to Mr. Reeve's criticism in his footnote on page 4360, where he says:

"How can there be a *thing* without energy, or matter, or form."

The context in which I used the word "thing" in a general sense, and the instances by which I illustrate what I mean, leave no doubt about the meaning of the word, which is sanctioned by common usage. I grant there are no concrete objects without energy, matter, or form, but there are many things (i. e., realities or real features of existence) from the conception of which the notions of energy, matter, and form are excluded. It is true that these immaterial realities (such as pure forms, feelings, ideas, the meaning of words) are not things in themselves; but we must remember that matter and energy are neither things in themselves, nor are they objects, i. e., concrete existences, but abstractions.<sup>1</sup>

#### REAL AND UNREAL.

Mr. Reeve touches the question of real and unreal. The red wafer on the table (or rather the thing which we commonly call a red wafer), of which Mr. Reeve speaks, is a fact; the red image on the retina is also a fact, and this image, when telegraphed to the brain, elicits, by its combination with the memories of several prior experiences, the verdict, "this is a red wafer," implying that it is a substance of special qualities, reflecting the light in a peculiar way. An investigation of the wafer with the help of other senses, will prove that all our anticipations were correct, and that is all we mean by saying the wafer is real.

Now the blue after-image appears on the retina. The blue color-sensation is a fact, and its existence is as real as the red color-sensation produced by the red wafer on the table. The nervous irritation of this blue color-sensation is also telegraphed to the brain where it enters into relations, in the same way as the red image before, with memories of prior experiences, and now the verdict appears, "There is a blue wafer." But this verdict, "There is a blue wafer," is based upon a false analogy, and the blue wafer, which is actually seen, does not exist in reality. The blue wafer-sensation, i. e. the after-image is real, but the meaning which, by a combination of other memories, attaches itself to the blue wafer image, implying that a blue wafer is lying on the

<sup>1</sup> The right comprehension of the nature of abstraction is of great importance. We refer our readers to an article of ours on "Abstraction" which appeared in *The Open Court*, No. 257 (Vol VII, p. 3569), and is republished in the *Primer of Philosophy*, pp. 118-126.

table, is based upon a fallacy. When the hands attempt to grasp the blue wafer they grope through the empty air and do not find it. This condition, viz., that the meaning which is attached to a certain sensation, or word, or combination of words, will not be verified, and that it is the product of an erroneous inference is all that the word "unreal" means.

#### ABSTRACT AND CONCRETE.

We have to add here that real and unreal are a different set of correlatives from abstract and concrete. All abstracts, if they are true, represent realities not less than concretes. By concrete we understand objects which we can touch and the limits of which are defined. A table is a concrete, and a table is a certain amount of mass in a definite form together with the energy that is contained in it. The color of the table is not a concrete thing, it is an abstract; it is a part of the table, but it is not less real than any of its other parts.

It is a habit of thought, traditionally established, to look upon abstracts as airy nothingnesses. But they are not. On the contrary: Abstracts are, as a rule, even more important realities than the crude concrete objects of our direct sense-apperception. The soul of man is not a concrete object of sense-apperception, it is an abstract, and yet its reality is indubitable, and it is of infinitely greater importance than material realities.<sup>1</sup>

The sense-perceived universe of matter and energy would be a meaningless jumble if it were nothing but mass in motion. The appearance of mind proves that the world is more than that. The ideas of matter and energy do not exhaust all the traits of existence. Existence contains also the elements of sentiency, which blazes up in the consciousness of man, and the actions that take place are such as to allow their formulation in what we call natural laws. Natural laws are abstractions; yet they are not phantoms, but descriptions of reality. They portray, if they are true, the course of nature correctly, and we can, relying on their universality, disclose with their help unknown facts that are not directly perceptible. Leverrier observed the disturbance in the course of a planet and inferred that another unseen planet must have been the cause of the disturbance. Relying on the universality of the laws of attraction, he concluded from a number of facts positively known, the existence of other facts not yet known. The unknown facts are not unreal, as Mr. Reeve says; they are only out of the reach of our present experience, but are just as real as the known facts. When afterwards Galle discovered the then unknown planet in the place where Leverrier had lo-

cated it, we cannot say that "the abstraction became a reality," but that the inference made was justified. The meaning which the astronomer attached to a number of facts found its verification.

#### MIND NOT UNKNOWABLE.

Mr. Reeve says:

"No human being can know what mind is, because he cannot rise superior to himself. To know what mind is he must be superior to himself, and that is impossible."

We reach out from the known to the unknown, from the present to the absent and also to the future, from the sense-perceived concrete objects to the invisible interrelations intelligible only by acts of mental inference. But that is not all. We can transcend our own being. It is not true that in order to understand a thing we must be superior to it. We can very well understand things that are superior to ourselves, for indeed all our spiritual being consists in depicting a reality upon which our life in all its details and with all its aspirations depends. This great All in its wondrous harmony and awful grandeur is the God whose behests we must obey. Its boundless infinitude in its illimitable eternity is unquestionably our superior, and yet what is science but our constantly increasing comprehension of its numberless mysteries. If we were able to understand only what is inferior to ourselves, how would progress be possible? And progress is possible; evolution is undeniable, and this age of an advance in all directions in which we live is the best evidence of the possibility that we can not only understand realities superior to ourselves, but that we can outgrow and transcend our own inferiority and attain higher and ever higher planes of being, in which we shall be superior to our present state of life. P. C.

#### ROME AND SCIENCE.

*The Chicago Tribune* contains a brief article headed "Crushing Reply to Ingersoll," who delivered a lecture on the Bible on last Saturday night at the Metropolitan Opera House in St. Paul, Minn. Archbishop Ireland spoke on Sunday evening on the same subject. He eulogised the Scriptures and defied the scoffer to ridicule the Bible, Christianity, and along with it civilisation. He said:

"How is it that Christendom to-day, as during the last two thousand years, means civilisation? Where Christ is not, there is barbarism; there is servitude of the weak, despotism of the strong, inhumanity and immorality."

We certainly agree with the Archbishop that due credit must be given to Christianity for its civilising influence upon Europe and America, but we cannot join him when he says "Where Christ is not, there is barbarism." Were Plato and Aristotle barbarians, was Buddha a savage? The Archbishop declares:

<sup>1</sup>We cannot agree with Mr. Reeve's definition of space, whose "soul" is said to be "the capacity to contain." Space is real, but it is not substantial. Space is not a box that contains the universe, but it is the relational of material existences; it is the possibility of motion in all directions.

"The words most glibly repeated by unbelief—the family, dignity of woman, liberty, fraternity—are Christian words, and without Christianity they would be meaningless. Take them out of your world of unbelief."

Without denying the merits of Christianity we must not forget that the ideals of humanity were also aspired after by the so-called pagans. Civilisation is a wider concept than Christianity, and the official representatives of Christianity have often enough opposed and attempted to suppress liberty and progress. The Church was, upon the whole, a progressive factor during the first millennium of its existence. It represented a more rational and scientifically higher standpoint than the Teutonic paganism which it replaced, and it stood up for science as long as it had to struggle for its existence. It became, however, a reactionary power as soon as its institutions were firmly established. Scientific advance, political liberty, and religious independence had to be attained in spite of the Church and under a constant struggle with ecclesiastical authority. The Arabs built up a noble civilisation in Spain, while Christianity was still steeped in barbarism, and modern civilisation is mainly a revival of the classic antiquity of Greece, which took its deepest roots in distinctly Protestant countries. The leading nations are without exception distinctly Protestant nations—England, Germany, North America. One of the most important causes of the Sedan of France lies as far back as the edict of Nantes and the night of St. Bartholomew.

The Archbishop is one of the most progressive prelates of the Roman Catholic Church; and he says:

"What will unbelief give us? It replies, 'A scientific, rational world, beginning with itself and ending with itself.' . . . You give us a scientific world; that is, you give us a material world, a humanity without a soul on which to rise to the skies, a humanity with no purpose."

If unbelief gives us a scientific and rational world, let us by all means accept the gift, and if Christianity preaches hostility to science and reason, we must unhesitatingly abandon Christianity. That kind of Christianity which officially preaches an unscientific and irrational world cannot be the true religion. If there is any divine revelation it is science; the results of science (I mean proved results of science and not mere hypotheses or the vagaries of pseudo-science) are the dicta of God. The ecclesiastical rejection of Galileo does not refute the truth of his propositions. There is nothing catholic except science. The religion of science alone is what the Roman Church claims to be—truly orthodox and catholic.

When science is denounced as the enemy of religion, Colonel Ingersoll's attacks upon Christianity are justified, and all denunciations of the great infidel orator will only serve to strengthen him and his partisans in their position. The words of Archbishop Ireland

prove that the stirring criticism of an unbeliever is needed in the Church, and the time will come when Colonel Ingersoll's reformatory influence upon the religious life of Christianity will be openly recognised.

P. C.

#### BOOK NOTICES.

At last Professor Haeckel's *Confession of Faith* has appeared in English. The full title of the booklet is *Monism as Connecting Religion and Science. The Confession of Faith of a Man of Science*. It was originally an informal address delivered in Altenburg at a meeting of the Naturforschende Gesellschaft des Osterlandes. In its present form, however, it is considerably enlarged, some parts have been more fully worked out, and copious notes treating of the mooted questions more in detail and containing references to the literature of the various subjects, have been supplied. With respect to its purpose, it was the author's intention first "to give expression to that rational view of the world which is being forced upon us with such logical rigor by the modern advancements in our knowledge of nature as a unity"; and, secondly, to "establish thereby a bond between religion and science." "In monism," says the author, "the ethical demands of the soul are satisfied as well as the logical necessities of the understanding." The contents of the book are very rich, giving in broad and vigorous outlines a concise sketch of the state of modern science as bearing upon the ultimate problems of philosophy and religion, but more especially of the knowledge reached in the more elusive subject of biology, in which Professor Haeckel is such a distinguished worker. As the book received editorial discussion in *The Open Court* (January, 1893) shortly after its appearance in German, and as its excellences must be already familiar to all our readers, we have only to add that it has found in Dr. J. Gilchrist an accurate and graceful translator. The stupendous success which the work met with in Germany may be gathered from the fact that five editions of it were exhausted in five months. (London: Adam and Charles Black. New York: Macmillan & Co. Pages, 117. Price, 80 cents.)

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