

THE WORD OF GOD IN NATURE

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"In the beginning was the Word, and the Word was with God, and the Word was God. The same was in the beginning with God. All things were made by Him; and without Him was not anything made that was made. In Him was Life; and the Life was the Light of men. And the Light shineth in darkness; and the darkness comprehendeth it not." St. John, Chapter I. 1-5.

"In the midst of the sun is the Light, in the midst of the Light is the Truth, in the midst of the Truth is the imperishable Being." *Vedas.*

"After Him the Shining One, all shines, from his light is lighted this whole world." *ibid.*

A man and a flower—a dahlia, let us say—are brought into proximity. Light of the definite wave-length corresponding to the color of the dahlia is reflected from it and is vibrated through space. The reflected light vibrations are received in the eye of the man where they undergo transformation and pass on to the mind. The mind, a receiving and sending station for many varieties of vibration, integrates the impression of the flower that it receives from the eye and immediately gives it a certain classification or category that is dependent upon past experience with like impressions. That is, the mind co-relates this present impression with past impressions of a like order, just as a filing clerk files a letter relating to a special type of business transaction with previous papers of similar purport. In thus filing the impression away in the mind some particular filing case or cell, some individual "aisle of memory" is re-opened. The mind of the man passes from the consideration of this particular dahlia to that of other dahlias that bloomed long ago in his mother's garden and from the thought of dahlias and gardens it passes to thought of his mother. He recalls that he has not communicated with her for a long time, and, in order to make amends, resolves to send her a telegram. Seated at his desk an idea or ideas of definite significance appeal to him as worthy of conveyance. His mind is "made up." A command goes out from the mind, a command that

is vibrated through the nerves of the body to the muscles of the hand. The command to write. The hand, trained to co-ordinate with mind, obeys. The ideas of the mind are clothed in certain conventional, man-designed, symbols. These take the form of black marks of a peculiar configuration that contrast with the white of the paper. The ideas are thus reduced to a form in which they are intelligible, through the medium of Light, to other minds. The message can now be read by the operator to whom it is submitted. This individual transmutes the symbology of the more or less stable written characters into an instantaneous symbology of dots and dashes that are formed by alternately opening and closing an electric circuit. These dots and dashes are received at another point as individual clicks of sound that are significant to the trained ear of the receiving operator who transmutes them back again into written characters.

For the purpose of carrying the illustration further, let us now assume that the message has to be relayed to another city by radio. In this event the characters of the written message are pronounced by voice into the microphone of a transmitter. The sound waves are thus impressed upon the electromagnetic carrier wave that accompanies the current in the transmitting apparatus. These waves, carrying the sound impression—which in turn carry the ideas of the message—are oscillated at the spark gap into the ether. At a distant receiving set, tuned to receive waves of just this wavelength, the impressed sound waves are delivered back to a material system and their message of articulated human words is conveyed to the intended recipient.

The foregoing hypothetical incident has to do in its entirety with an operation of the Word in nature—i. e., the conveyance of words, thoughts, ideas or intelligence. From the time of their original conception by the sender to their reception by the addressee the words or ideas of the message took various forms. There was the originating stimulus—the memory rotating light vibrations received from the dahlia—that preceded the formation of the ideas in the mind. There was an interval when the formless idea existed only in some vague fashion in the mind of the sender. There was a stage during which the ideas were being flashed through the nerves of the arm and hand and being given concrete expression in the conventional symbols of the familiar tongue. There was an instant when cognizance was taken of the words by another mind. There was an

instant when the words existed in the form of electric pulses traveling along a wire. There was another stage in which they again existed in symbolic characters and came under the purview of other human minds. There was an instant when they existed in the form of sound waves, or as alternate rarefactions and compressions of the material atmosphere. There was an instant when they existed as an impression upon an electromagnetic carrier wave that was expanding to infinity through the ether. There was an instant when with the carrier wave the words were re-integrated from the ether to another material system and when the radio waves were changed back to sound waves. Finally, there was the stage when the words came to the awareness of the person to whom they were directed.

The incident illustrates how closely such things as light, sound, electricity, magnetism, matter, mind and thought are inter-related. It also indicates how the mind is resonated and stimulated to thinking by the vibrations of light that reach it from an object and how mind, in its turn, has power to initiate vibrations that, through auxiliary agencies, may be changed into many forms.

Thousands of years before anything was scientifically known of the emission and absorption of electromagnetic radiation the word, LIGHT, was employed in the expression of both natural and spiritual ideas. The word itself and all kindred words that have come down to us—such as “luminous,” “illuminate,” “lucid,” “elucidate,” “enlighten,” “enlightenment,” “bright,” “brighten,” etc.—are used in ordinary speech and writing more frequently to express ideas relating to mental excellence and wisdom than they are used in connection with ideas relating to natural light. In reality, no one can write or utter many sentences upon any subject without introducing words or terms that have a direct or a veiled reference to Light. Even the physicist, describing his investigations of natural light, is sometimes caught speaking of the measures he is taking to “throw light on the subject,” or conveying the impression—in no sense untrue—that light may be thrown upon itself.

In ancient philosophic and religious literatures Light is used synonymously with “Truth,” “Righteousness,” “Wisdom,” “the Word,” etc. In the Vedic hymns Light is referred to as “Sacrifice” and this idea is allied with the occidental concept of the sacrifice of the “Light of the World.”

The ancient and the modern civilization sought Truth along very different paths but it is more and more evident that all paths with

which Light is involved lead at last to the same goal. The more complete our knowledge of vibratory science becomes the clearer does it appear that Light, even as revealed in nature, is just what the ancients deemed it to be—i. e. the Word, Truth, Wisdom, and Sacrifice.

That Light,¹ or vibration, is both the Word and the means by which the Word is conveyed can be observed in the incident outlined above. Vibration is thus revealed by modern science and technology as the fundamental basis of all human language and symbology and the only means by which intelligence may be conveyed from mind to mind.

That Light in its relations with matter is Truth itself is becoming more and more realized by physicists. Light never steals or takes anything unto itself. Whatever wave-length or quantity of energy is imparted to it by a material resonating system is always—whenever and wherever it meets another material system—handed back to matter again in the same measure and definite magnitude of energy.

That Light is Wisdom itself follows from the fact that it combines the idea and the expression of the idea. Being the sole intermediary between separate particles and entities Light alone can be the essence of Wisdom.

Light is Sacrifice. Consider a modern radio transmitting apparatus in which the alternating current waves are oscillating at the spark gap into the ether. In such a system the current that was ascending in one direction is brought to a limit, declines in the opposite direction, is reversed in polarity at the spark gap and sacrificed to the ether. That is, a portion of the electromagnetic energy that accompanies every moving electron or electric current is given up or dies to matter in the spark gap.

Consider also the tiny atomic resonating systems that emit visible light. Electrons revolving in the outer orbits of a heated or excited atom fall inward towards the inert proton. As they descend to inner energy levels something which actuated them in the outer orbits is lost. In this system, too, there is no doubt a reversal of polarity in which electromagnetic energy is given up to the ether. Light is Sacrifice.

¹ The word, Light, as used herein is employed in the comprehensive sense that includes all vibration. The whole gradient of electromagnetic vibration is implied together with sound and other probable forms of vibration.

Milleniums ago Job pondered over the "dwelling-place of Light." Today, though we have learned much about light in a physical way, there are none who know the dwelling-place of Light; neither are there any who know where Light begins and ends or if it has beginning and ending. But we do know that Light is a relative thing that steps down through an unknown number of octaves from infinitely short to indefinitely long waves. The shortest known vibrations at the present time are those of Millikan's lately discovered "cosmic rays" which have a beginning wave length of .00038 Angstroem units and a frequency of 78919 vibrations per second. They are believed to arise from the minute disturbance imparted to the ether when the primordial hydrogen protons combine to form heavier elements. From this rarefied beginning—if it is the real beginning of vibration—Light progressively steps down through about 35 symmetrical octaves to a point where the far intra-red region of natural vibrations merges into the region of electrical vibration artificially generated by men. From this point, $\lambda=420u$, to the wave-length of the industrial 60 cycle alternating current, $\lambda=5200$ kilometers, is about 33 octaves more. This may by no means be taken as marking the long-wave limit of vibration. As the wave-length and frequency of vibration is governed by the physical dimensions and periods of the resonating systems involved there is no conceivable long wave limit short of the dimensions of the greatest suns and stellar systems.

The light octave, it may be recalled, is identical in structure with the musical octave—i. e. the frequency of vibration is halved or doubled with the beginning of each successive octave in progressing respectively toward the long wave and short wave regions of the radiation gradient. Etherial radiation thus forms a progressive "Jacob's Ladder" upon which creative power descends and ascends between the Primal Source and the divergent categories of Being. Light is the vibratory and supervisory power of Deity over differentiated essence and the unifying relation between all diverging substances and entities. The different octaves are representative of gradations of differential essence in connection with which life and intelligence in different forms and degrees is possible.

Light, it will be inferred, alters in quality and significance as it varies through the long gradient of octaves. Its wave-length and frequency are a sort of mirror-image of the size and orbital periods of the resonating systems that give rise to the vibration and these, as has been implied, vary from the dimensions of the minute hydro-

gen proton to those of stars and universes. Wave-length is the ultimate and natural yardstick of dimension and space as frequency is the fundamental measure of Time. They are the pulse and period of the vibrating cosmos itself, which varying through the long vibration gradient, bring in, in due season, the periods and conditions of matter through which the diverse categories evolve. Light emitted by an individual resonating system is monochromatic in character and such vibration "falls in" in its natural order in the great procession of light.

The analogy between light and sound is often remarked. Indeed there is much more than analogy existing between these two types of vibration; there exists a direct reciprocal and reversible relationship between them. Sound is readily convertible into electromagnetic vibration and this into sound, as we have noted before. The tones of music and the spectral series of light are akin and the character of both are due primarily to the quality, symmetry and dimensions of the emitting resonators. The resonators that emit light are the well ordered cosmically constructed atoms and material compounds while musical resonators are the artfully devised instruments of men. Musical resonators may also be deemed aggregates of atomic systems brought into certain juxtapositions and conditions of strain whereby they vibrate and harmonic sound, of musical tones, is produced.

Electromagnetic vibration and sound are thus observed to arise from the disturbance of matter or essence. There is, however, a marked distinction between the two types of vibration. Light vibrates through the medium of the ether. Sound, on the other hand, is "of the earth, earthly" and vibrates only through material mediums at a velocity that is only a tiny fraction of the velocity of Light.

It would seem that these two forms of vibration, the electromagnetic and sound, which appear to vibrate on two sides of matter, form two dimensions of an all embracing system of cosmic vibration which might be given the name of Light in an all inclusive sense. If two sides of Light are respresented in electromagnetic vibration and sound vibration there must be yet another dimension of Light so that it has the three dimensions that make of it the reciprocal of matter.

What, then, is this third dimension of Light? There is no other name that we can give it but that of Life. Does not Life also consist of an immense Jacob's Ladder of vibration that varies in

character according to the resonating systems—i. e. the genera, species and individuals—from which it emanates?

The electromagnetic vibration gradient and the life gradient are similar in their manner of unfoldment. Both must first exist in a high frequency or unevolved form before they may exist in low frequency or evolved forms. The high frequencies of tiny resonating systems and the short life periods of the lower forms of life are analogous.

Life would appear to also have this in common with electromagnetic vibration that it is a thing of two planes, the material and the etherial or spiritual. Just as natural light—the soul of matter—seemingly dies to matter as the light ray slips away into the ether, so the life of the creature appears to die as the bodily functions discontinue. But as we know, and have physically proved, that the energy that dies at once place and time in matter as intra-atomic energy is born through the medium of Light in like measure and quality in a kindred resonating system—however distant in time and space—can we not assume the same for life, another type of Light? When life slips away from the failing body it must, if it obeys the same laws as natural light, pass an interval—either small or great—in the etherial medium (heaven?). However, if a kindred resonating system is made accessible to it—i. e. a male and female of kindred characteristics—it may be born again in another living form.

We observed how readily the electromagnetic waves “carry” the sound waves. May not the shorter wave-length rays of natural light carry life waves as well? Is this not the secret of how living types are reflected by Light from planet to planet? Is it not probable that all the potentialities of sound, life and mind are stepped down to us from the Primal Source of Light through a vibration gradient of unknown length?

I must leave this fascinating subject at this point to take it up again perhaps in other papers. The study of Light in all of its natural and psychic aspects should, I believe, be among the very earliest to be introduced to the adolescent intellect. Just now the scientific evidence concerning Light is incomplete and exists in fragmentary form scattered through the technical literature of a dozen sciences. These loose ends should be brought together and co-ordinated for it is Light itself that forms the one continuous thread through all nature and knowledge of nature. All human

knowledge could well be re-arranged according to their natural sequences and relations in the Light gradient.

The laws of light propagation and reception when they shall have been deciphered and co-ordinated in their entirety will be found to form the basic expression of all that is at present true in mathematics, music and religion, and to form a science of nature that can only be equalled by arithmetic for exactitude. Once perfected, this synthetized All-science would serve equally well as the foundation study for all scientific, aesthetic and priestly careers and in the realm of human affairs Light would, for the first time, become the true intermediary between divergent minds just as it ever is the intermediary between divergent particles of essence. However their paths might diverge in later years men grounded as boys in this cosmic science could never overlook the Thread that runs through all and the separatistic opinions and dissensions that mark our contemporary era would no longer arise.