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# Electronic Waves

Read By

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The evolution of physics has been as rapid and as fundamental as the evolution of any other of the sciences. Its evolution has consisted largely in a gradual change from a mechanical to a non-mechanical conception of the physical world. Nineteenth century science resolved everything into particles, called atoms, and into energy. It enacted a law of conservation of matter and, later, a law of conservation of energy. Matter was considered to be composed of particles held together by energy. Newton believed in a corpuscular theory of light and tried to explain all phenomena of light by that theory. Then came Huygens who disagreed with Newton and expounded his wave theory which was to become the fundamental theory of modern physics. From that time to the present day the corpuscular and wave theories have both had their advocates, but, thanks to Doctors De Broglie, Schrödinger, Heisenberg, Dirac and others, the wave theory has now been accepted by most of our leading scientists and all phenomena are now reduced to wave motions. Even electrons, now considered to be the fundamental units of our physical universe, are spoken of as electronic waves. Sir James Jeans calls matter bottled up waves, and he calls light and other forms of radiation unbottled up waves, or waves which are free.

Let us, then, consider the characteristics of a wave.

A wave is a certain form of motion advancing with a finite velocity through a medium. Waves have wave-length, frequency, amplitude, quality, direction and velocity. These characteristics of waves are well known to all students of physics. For example, a wave of light, with all its prismatic colors, travels with a definite velocity of 186,300 miles per second, but the separate colors, red, blue, green, etc. possess different wave-lengths and fre-

quencies, even though all have the same velocity, which is the product of the wave-length and the frequency. This fact is well known to chemists who have found that a given photographic emulsion is affected only by light waves of certain frequencies, regardless of the velocity or amplitude of the waves. Another important factor is that energy is transmitted by means of waves, being passed along from one part of the medium to the next, by the interaction of adjoining parts of the medium. The amplitude of a wave gives an indication of its energy.

When different waves meet each other, a new resultant wave with new characteristics is produced. They either intensify or, by interference, weaken each other, depending upon the wave-length and amplitude of the two waves, and upon their relative positions in the medium.

Waves possess the principle of polarity, and hence the principle of duality, constantly moving alternately from positive to negative and from negative to positive along a sine curve. These polarities are of the same order as action and reaction, inflow and outflow, inbreathing and outbreathing. They also obey the law of periodicity or the cyclic law.

In the light of modern physics we may say that the entire universe is made of waves. On the physical plane, if we consider a frequency of two vibrations per second to be an octave, a range of frequencies from 16 to 32,768 vibrations per second, or all ranges of frequencies between the 4th and 15th octaves produce sound, those between the 25th and 35th octaves produce electricity, octaves 46 to 48 produce heat, octave 49 produces light, octave 50 produces chemical rays, octaves 58 to 61 produce X-rays and octaves 72 to 84 produce cosmic rays. That is as far as science has been able to go. We know, however, that there are still higher octaves which produce emotional and mental waves.

It will be noticed that there are gaps, at regular periodic intervals, between octaves which are registered by our senses

and those which are not. These octaves which are not registered do not manifest themselves in any form or phenomena, but they affect our inner psychic life, which in turn affect our inner life.

We live in an ocean of waves. The sun pours out its energy in various forms of waves which produce not only all phenomena on the physical plane, but those on emotional and mental planes. It produces all the cyclic, seasonal and climatic changes, the tides of the ocean, heat and cold waves, life and death waves, which pulsate rhythmically in tune with the heart beat of the universe.

On the emotional plane waves are manifested in heart tremors, in joys and sorrows, in anger and jealousy, which, when expressed by a large number of individuals, often sweep over the earth in the form of crime waves, suicide waves and fear waves, in waves of romanticism, happiness, contentment or peace. On the mental plane, the brain is constantly broadcasting waves of thought forms, which express themselves, in society, in waves of optimism or pessimism, in waves of inventions, in waves of idealism, materialism, agnosticism, etc. In the social world they are manifested in forms of depressions and world upheavals, due to clashing of waves of opposite interests or in forms of prosperity due to waves of trust and confidence which sweep over the minds of men.

The law of evolution carries on its work by waves of different magnitudes and in different directions. We see the skeletons of many products of this law in the fossils of extinct plants and animals. We have seen cultural waves and waves of civilizations which have swept over the earth from East to West in regular periodic succession. We have seen waves of great beauty, art, literature, philosophy and statemanship sweeping over Greece in the Periclean era; waves of harmony and music rolling over Germany in the eighteenth and nineteenth centuries. We have witnessed mighty spiritual waves passing over India, Persia, Egypt and Palestine,

initiated by the great Masters, and capturing the hearts of men. We see now, waves of depression, waves of war, waves of suspicion, jealousy, waves of dictatorship and waves of communism sweeping over Europe and Asia and threatening to destroy the present day civilization. These are the results of the great conflicting waves of the old and the new orders: waves of the old order with their principles of individualism, and competition, and the sense of separateness mingling with waves of the new order with their principles of universality, cooperation and the sense of unity, to produce a new wave with entirely new qualities, not expressed before, through which a new civilization is in the making. It is not hard to see that this mighty conflict is releasing a tremendous amount of energy, destroying the old and creating the new; forcing the old forms to yield to the new forms; bringing waves of conflict, depression and dictatorship as tools to produce unity among mankind. These unifying forces will continue until mankind becomes unified.

But are we justified in speaking of emotions and mental waves? The answer would be in the negative if we looked at the universe from an individualistic viewpoint, and considered it to be a bundle of particles, but the answer is in the affirmative if the universe is considered to be a dynamic universe of waves, of energies. As was said before, modern scientists consider the fundamental unit of the manifested world, the electron, to be not a particle but a wave. Sir James Jeans states in his book, *The Mysterious Universe*, "Physicists regard the electron-waves as waves of probability—a sort of symbolic representation of our knowledge as to the probable state and position of an electron." And in his book *The New Background of Science*, he states that "Electrons have no physical reality and are not material waves." "An electron can only be objectively specified when it is anchored to a proton or other material frame of reference; otherwise it merely

fills all space uniformly" . . . . "The waves do not admit of representation in space and time, and so can not be said to possess any physical reality." Then he goes on to say that "The particle representation has served its purpose when it has led us to the wave picture, and may henceforth be disregarded as mere scaffolding." . . . . "Thus it is through the wave picture of matter that we must approach reality." It is then as true to speak of emotional and mental waves as of electronic waves, and we may refer to all phenomena, such as health and disease, in terms of waves.

Each body has its special wave-length, or its cycle of frequencies or vibrations. When the wave-lengths of all the organs in the body are in consonance with each other, the result is health. Health, then, means the unity of all physical functions, and emotional and mental equilibrium. It means freedom, harmony, to be in tune with the health principle of the universe. Disease means disunity, dissonance, resistance, interference and disequilibrium. If one organ is in dissonance with the rest of the body it creates conflicting waves, which interfere with the wave form of the whole body and cause loss of energy, discomfort, suffering and destruction.

Therefore, live in tune with your physical environment. Make your habits of

eating, drinking, sleeping, and your mode of dressing yourself to conform with all daily and seasonal changes. Relax often, and do not hurry.

Guard your emotional life. Let go all anxieties, all troubles, all resentment, all hate. Be passionless, serene, at peace. Be still often in the presence of nature—let its harmony enter into you. Be still and feel the Great Presence.

Keep your mind in harmony with the new rhythm, with the world's latest and highest thoughts, and think creatively. Have regular daily periods for meditation, for stilling, relaxing your mind, during which time learn how to concentrate—how to withdraw your consciousness from your senses, and submit your will to the Great Will. Still your thoughts, hold your mind steady in the light and feel the great heart-throb of the universe, the dynamic vital rhythm of the Creative Force.

Out of stillness comes energy, knowledge, love, joy, purpose, Plan. Contact is made with the soul, fusion takes place with the life-force, union is made with the waves of universal symphony. Your individual consciousness projects toward the Infinite, you become one with Divine consciousness. Then you enter into the Great Plan and work out this Plan through service for the liberation of humanity.