

2733 Netherland Ave.

New York, N.Y. U.S.A.

December 10, 1938

Mr. Vladimir A. Shibayer  
Editor of Flamma, Inc.  
Nagari, Kulu, Punjab.  
British India.

Dear Mr. Shibayer,

about two years ago I wrote a book on "Roerich's Life and Philosophy of Education". I submitted it to a number of Publishers in this country, but they would not see their way clear to publishing it, because they thought such a book, at this time, would have only a limited appeal to the public. They only want to publish books that would sell by the thousands. I am constantly in touch with Mrs. Gina Lichtmann, she, as well as, many of Prof. Roerich's admirers feel that such a book will be timely, as it will once more bring to the foreground his contribution to the world culture. Mrs. Lichtmann, therefore, suggested that I write to you to see if the Flamma, Inc. can publish it. She feels that such a book will also appeal to the universities and to educators, because it deals with the education of the new era. Prof. Paul R. Padosarjevich, who has the chair of Experimental Education of New York University, has taken a special interest in it and will write an Introduction to the book. When it is published, he will use it in two of his classes, and he will recommend it to all his students in the university.

Prof. Roerich has seen the manuscript and has given it his hearty approval. The book will be illustrated with a number of Prof. Roerich's

finest paintings.

The manuscript has about 225 typewritten sheets and will make a book of approximately 250 pages. A table of contents is enclosed, also a letter of recommendation by Prof. Redosabjevich.

I have seen your publication, "Nicholas Raciuk, A master of the mountains" by Barrett D. Coulson. Mr. Lichtmann thinks that it will be cheaper to have the book published in India. Then perhaps later on an American edition or even an English edition can be placed on the market.

Will you please talk this over with Prof. Raciuk, who I understand is your neighbor, and let me know what you think of the proposition. After the book is printed in India what are the tariff regulations? Can you send the books <sup>to the U.S.A</sup> in small lots duty free? What terms could you offer me for undertaking this work? Please let me know of your earliest convenience what you could do about this matter.

With Season Best wishes,

Yours very sincerely

G.H. Paoliani

7682

# Electronic Waves

Read By

G. H. PAELIAN, PH.D.

At Eastern Electronic Research Association Convention  
Pennsylvania Hotel, New York City  
May 7, 1938



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**ELECTRONIC WAVES**

Read by G. H. PAELIAN, Ph.D., at E.E.R.A.  
Convention, Pennsylvania Hotel, New  
York, May 7, 1938.

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 emotional 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.

268

3

17-JAN-1939

Dear Dr.Paelian,

Many thanks for your letter of Dec.10th to-hand to-day. Your article on Prof.Roerich's philosophy is of course well known to me and I admired it very much. At the time we already considered printing it in India, and you know that part appeared in the TWENTIETH CENTURY.

I regret to say that FLAMMA, similar to all other cultural publications with a very small circulation has absolutely no spare funds whatsoever, as Mrs Lichtman has probably told you. We just manage to print a limited number of copies and with a few donations and subscription do not even manage to make ends meet, as the price of FLAMMA is kept VERY low, to make it accessible to all members. We have recently printed Mr.Conlan's monograph in four numbers and managed to have some extra reprints done at the same time, - however similar to ALL our other contributions, they are given to us free, and we had no financial obligations to the author whatsoever, except a number of reprints. In the spring issue we have incorporated Prof.Radosavljevitch's article from the Educational Forum (also received free) and I regret it seems quite impossible to offer any terms for your article, from FLAMMA.

However if as you write you could recommend the book to students, then perhaps you could induce some to open a preliminary subscription and then we could order printing the book here in India. Roughly speaking for 250 copies size of FLAMMA the printing cost and paper is about 50¢ per page which on 250 copies would make \$125, bound in paper cover as FLAMMA. The importation

duty into the STATES would be 15% of the cost of printing, but postage charges on a book of 250 pages would amount in my estimation to almost 15 cents per copy. If we send the copies individually to the respective buyers or subscribers in the States, then there would be no U.S. importation duty. If a publisher's name is wanted, FLAMMA will be very glad to act as publisher. The above quotations do not include however any coloured reproduction and I may add that for FLAMMA we have all these donated to us free of charge, or we could not dream of offering FLAMMA as so low a price. Coloured reproductions would be impossible to make in India, and the coloured reproductions which we had, were all made in Europe. Only monotone reproductions could be made here, so that perhaps a portrait could be added, for which on 250 copies the increase in price would not be much more than \$10.

If the self-cost in NY would be 80 cents per copy (because of the small number printed), then perhaps the book could sell for about \$1.25. There can be no doubt that your monograph, especially since it represents a doctor's thesis, would be most welcome for publication and perhaps the students could be helpful in this - after all it is only a matter of \$10 from ten to 15 people. Those who subscribe, may be given it at \$1.00. These are my suggestions, to the best of existing circumstances. If you have any further ideas, I shall only be too glad to go further into them.

Many thanks for your reprint of ELECTRONIC WAVES - it had duly been received and a note about it was even incorporated in FLAMMA Winter issue 1938.

Another suggestion is: have you tried any of the American publishers, to specialize in autobiographies - and biographies - I understand that such books as on Mme Curie, Toscanini are very successful.

Prof. Roerich is sending you his cordial greetings and is always glad to hear of your work and successes.

I am returning enclosed Prof. Rado's letter. I am keeping the Table of contents, as it is a copy and I presume you have another.

With best wishes

Yours very sincerely



2733 Netherland Ave.

new york. N. Y.  
U. S. A.

June 1. 1939

Dear Mr. Shubayer,

I received your registered letter of Jan. 17. 1939  
some time ago. I did not answer it before this, because I was in the act  
of contacting Fortuny's Publishers for the publication of my book on  
"Roverdi's life and Philosophy of Education". Here is the circular they  
promised to send out. but the point is this that they will not start  
publication until they receive 525 subscribers who will pay them 2  
dollars for each book and order the book. This I am afraid is not very  
practical and I have my doubts about their publishing the book. I have had  
several consultations with Mrs. Gina Lichtmann and she suggested that I  
write to you and ask you if you would be kind enough to insert an  
announcement of my book, similar to the enclosed announcement. but  
ask any one who cares to send his or her subscription, let him or her send  
the money to Mr. Gene Fosdick, the Editor of Flamma. our plan is this. In case  
Fortuny's decide to publish the book then we will turn over all the subscriptions  
to them, but in the event they do not then we want Mr. Fosdick to keep the  
subscriptions and we will ask you to publish it in India, by Flamma, in  
accordance with the plan you outlined in your letter of Jan. 17. we will  
ask you, in that event, to print 500 copies. Some of the money for the 500 copies  
will, or hope, be paid by the subscribers and the ~~other~~ balance by us, as we  
think we can easily dispose of couple hundred copies of the book which  
will cover the expenses of publishing etc. after we find out whether  
Fortuny's mean business or not I will get in touch with you again.

and outline the details of publication. We feel that a book like this  
must be published at a time like this, when the cause of Culture  
and <sup>that of</sup> Prof. Reinck is at stake. We are certainly very grateful to you  
if you insert an attractive announcement in the next issue of *Flamma*.  
and ask for subscriptions the sent to the editor of *Flamma*. We  
Dear Foshich.

many thanks for Prof. Reinck's cordial greetings. Please convey  
my kindest thoughts to him.

Very sincerely yours.

G.H. Paolani

7-AUG-1939

Dear Dr. Paelian,

We have received your letter of June 1st and FORTUNY's announcement. In the meantime we have also heard from Mrs Lichtmann that the negotiations with FORTUNY's were not satisfactory and therefore it is impossible to make an announcement in FLAMMA for their book. It was thus necessary to keep the matter pending your further news.

Of course we shall always be glad to make an insertion in FLAMMA about your book, when its printing is definitely decided. But the readers of FLAMMA have just bought the small and now are buying the large monograph by Mr. Conlan and thus I am afraid that a new book on a similar subject just now may find the field saturated. As we wrote to you before FLAMMA has no funds whatsoever to advance for the publication of the book, and it could only be started if and when you can make full arrangements for the financial side. Since the book is to have an introduction by Prof. Radosavlevitch and since you yourself are of the New York University, it is naturally to be expected that the subscribers may be found mainly amidst the present students and alumni of that University. We thus await more definite news from you, before anything further on our part can be done in this matter. Especially since FORTUNY's apparently cannot be fully trusted, it seems that precaution is advisable.

Awaiting to hear from you

Yours sincerely