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Dr. George W. CRILE, Sr. Radiogens

& : Pre-Cancer Detection w/ the Zuccala Lytic Test, &c.

Wikipedia.org

George Washington Crile



Born November 11, 1864
Chili, Ohio
Died January 7, 1943 (aged 78)
Cleveland, Ohio
Nationality American
Fields Surgery
Alma mater Wooster Medical College
Known for Co-founding the Cleveland Clinic

George Washington Crile (November 11, 1864, Chili, Ohio – January 7, 1943, Cleveland, Ohio) was a significant American surgeon. Crile is now formally recognized as the first surgeon to have succeeded in a direct blood transfusion.[1] He also contributed to other procedures, such as neck dissection. Crile designed a small haemostatic forceps which bears his name; the Crile mosquito clamp. He also described a technique for using opioids, regional anaesthesia and general anaesthesia which is a concept known as balanced anaesthesia. He is known for co-founding the Cleveland Clinic in 1921.

Biography

Crile graduated from Ohio Northern University in 1884,[2] and in 1887 received his M.D. from Wooster Medical College which merged to form modern day Case Western Reserve University School of Medicine.[3][4][5] He did further study at Vienna, London and Paris.

He taught at Wooster from 1889 to 1900. He was professor of Clinical Medicine at Western Reserve University from 1900 to 1911, and was then made professor of Surgery.[2] He was Chair of Surgery at University Hospitals Case Medical Center from 1910 to 1924,[6] and established its Lakeside Hospital.[6]

During the Spanish-American War, he was made a member of the Medical Reserve Corps and served in Puerto Rico (1898). He was made an honorable F.R.C.S. (London) in 1913. After America entered World War I, he became major in the medical O.T.C., and professional director (1917-8). He served with the B.E.F. in France and was senior consultant in surgical research (1918-9). He was made lieutenant-colonel in June 1918 and colonel later in the year. [2]

He made important contributions to the study of blood pressure and of shock in operations. Realizing that any strong emotion, such as fear before operation, produced shock, he attempted to allay dread by psychic suggestion, also endeavouring to prevent the subjective shock which affects the patient, even when under general anaesthesia, by first anaesthetizing the operative region with cocaine for several days, if necessary, before operating. Thus nerve communication between the affected part and the brain was already obstructed when the general anaesthetic was administered. For his work in shockless surgery he received a gold medal from the National Institute of Social Sciences in 1914.[2]

Crile is the author of *A Mechanistic View of War and Peace*, published in 1917.[7] He also wrote *Surgical Shock* (1897), *On the Blood Pressure in Surgery* (1903), *Hemorrhage and Transfusion* (1909), *Surgical Anemia and Resuscitation* (1914), *The Origin and Nature of the Emotions* (1915), *Man an Adaptive Mechanism* (1916) and *The Fallacy of the German State Philosophy* (1918).[2]

In World War II, the United States liberty ship SS George Crile was named in his honor. The lunar crater Crile is also named after him. He is buried in Lake View Cemetery in Cleveland, Ohio.[8]

His son George Crile, Jr. was also a surgeon. His grandson George Crile III was a journalist, author, and CBS producer. His Great-Grandson is Rip Esselstyn, a former triathlete and firefighter and the author of *The Engine 2 Diet*.

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New York Evening Post (1936)

Noted Surgeon and Scientist Sees All Life as Manifestation Of "Radiant-Electric Energy"

DR. GEORGE CRILE, a surgeon and scientist of international reputation, gives us the chance to find out a lot about ourselves we probably had never suspected in his "The Phenomena Of Life," which is the current choice of the Scientific Book Club and a volume that will undoubtedly receive serious treatment at the hands of the pundits.

It is not a book to be hastily recommended to the general reader, because its distinguished author makes no concessions to the average understanding. His scientific vocabulary alone calls for the free use of an unabridged dictionary, and the words one learns about will not be of much use in ordinary conversation, I fear.

For those who have the patience to read it as it deserves to be read, however, there will be rewards. Even for an unscientific reviewer there were momentary glimpses of strange and exciting new worlds in Dr. Crile's picture of the human body; brain included, as a mass of infinitely tiny — ultrafurnaces in protoplasm, which he calls Herschel Brickeii microscopic — units of radiogens and in which combustion is constantly taking place, in other words, we are water-cooled combustion engines for the manufacture of electric energy, in the opinion of this seeker after truth, and I hope he will forgive me if I have oversimplified his theory.

At any rate, this is what he writes about the operation of the protoplasm of which we are made, the substance of our physical beings: Since all matter is electrical in nature and since in the final analysis all energy is radiant and electric energy, we conceived that proptoplasm must be generated and operated by radiant and electric energy.

Radio-Electric

Then he goes on — I am quoting from the General Summary, "The Radio Electric Theory of Living Processes" — to outline the logical steps from the statement just quoted: In accordance with this conception, protoplasm would be a system of generators, conductance

lines, insulators and infinite numbers of infinitely thin films for holding electric charges. Lightning and terrestrial electricity which fix nitrogen form the nitrates. The nitrates in the soil represent a pre-plant phase of living things. Solar radiance added to the nitrates generates plants. Plants generate animals. This solar radiation generates man.

The generation of radiant and electric energy in animals is made through oxidation of the organic compounds of the plant; that is, solar radiance is released in the animal by oxidation. Animals are adapted to oxidation, just as a combustion engine is adapted to oxidation.

Much of the body of animals, the lungs and the circulatory system, is related to the fact that It is through oxidation in animals that the sun's radiance is re-radiated in protoplasm; that is, oxidation causes the sun to "shine" again in protoplasm. Animals, like plants, grow by virtue of solar radiation and reradiate solar radiation.

The Sun Our Father

This sounds as if Dr. Crile had got around to saying scientifically what the ancients decided without benefit of test tubes and other laboratory apparatus, namely, that My Lord Sun is really the source of all life. Poets and other people who never had to prove anything have often hit upon truths that science will be a long time establishing to its satisfaction, and one of the most striking features of Dr. Crile's book is its record of a painstaking scientific search for proof of the validity of a theory.

His conclusions represent thousands of experiments over a ten-year period, although he began work on his quest much longer ago than a mere decade. More than 2,500 animals were used and the best resources of physics, chemistry, biology, histology, cystology, biophysics and so on were called upon.

What was learned in the various laboratories was then checked, Dr. Crile explains, in the clinic, because the work has not been done In the field of "pure" science; its results were meant to be useful , to human beings as quickly as they could be determined and made available. i Dr. Crile's own curiosity was I originally aroused by the death of a medical student who was killed by the shock of an accident, the trauma, and much of what he has learned has been made 1 use of in helping to avoid "surgical shock" in operations, another name for the curious deenergizing of the body under certain abnormal conditions.

The Thyroid

In addition to this important development, Dr. Crile points out that his researches and those of hii colleagues have also been instrumental in putting into practice "the principle of resuscitation by adrenalin and blood transfusion not only in the treatment Of hemorrhage and shock but as a preventive against shock in patients handicapped by old age, infection, anemia, malignant tumors, degenerative disease, by the crisis of hyperthyroidism, ttc."

The thyroid, about which we hear so much these days when everybody's glands seem to be popular topics of conversation, receives its due attention in Dr. Crile's book, and he even remarks upon the brilliance of people whose thyroid works overtime: So high is the scholastic record among patients with hyperthyroidism and so many individuals of Phi Beta Kappa are to be found among them that, although hyperthyroidism may appear years after graduation, in a certain sense we may say that even Phi Beta Kappa is a disease. Certainly there is no record

of an individual with myxedema (hypothyroidism, or subactivity of the gland) attaining Phi Beta Kappa rank.

The thyroid, in Dr. Crile's scheme of things, is one of the three principal regulators of reradiation of "sunshine" in the protoplasm, the brain and the adrenal sympathetic system being the other two; the control centers of health or illness.

<http://www.everythingthatfollows.com/>

Dr. George Crile and his Radiogen Theory

We have only one more point to make which might further elucidate the subject of biological transmutation. That point is taken from the work of Dr. George Crile, years before Kervran's famous study of Biological Transmutations. Dr. Crile carried out research into the Bi-Polar phenomena of Life, specifically involving the production of electrical currents in protoplasm by oxidation and radiant energy. He came to believe that the living organism is specifically adapted to the formation, storage and specific use of electric energy and that the genesis of electric energy is due to RADIANT ENERGY emitted (by ultra- microscopic units or FURNACES in protoplasm. These furnaces he called RADIOGENS.

Crile postulates that the COMBUSTION OF THE PROTEINS is effected by these microscopic units and that the SHORT WAVE RADIATION EMITTED by this continuous combustion has two primary and fundamental effects:

- 1) Short wave radiation knocks off electrons and thus disturbs the electrical state of the protoplasm, especially of the infinitely intricate network of the nervous system.
- 2) Short wave radiation so DISTURBS THE ARCHITECTURE OF THE ATOM as to make atoms CHEMICALLY ACTIVE, thereby forming the basis for the SYNTHESIS OF PROTOPLASM.

RADIOGEN is the descriptive term which Crile adopted to denote the theoretical units of protoplasm in which oxidation occurs and from WHICH RADIATION IS EMITTED. He believed that LITTLE OR NO OXIDATION takes place in the great mass of protoplasm outside of these infinitesimal units or RADIOGENS. The RADIOGEN unit is patterned after the Solar System or the atom; that the nucleus or sun of this infinitely small solar system is an atom of IRON; that these atoms of iron, bearing a sign of like charge, REPEL EACH OTHER as do metals in colloidal suspension, and that by this radiogen, ENERGY IS CONTINUOUSLY RELEASED AND ORGANIC COMPOUNDS ARE CONTINUOUSLY BUILT UP.

The element iron, in the position of a miniature sun, would be in continuous oscillation thus producing a temperature of not less than 5,000 degrees Centigrade, just as the element iron in the sun is in continuous oscillation. The degree of this temperature is indicated by the genesis of Ultraviolet, visible and infra-red radiation; in other words, a RE- RADIATION OF THE SOLAR ENERGY originally put into the organic molecule in the plant takes place in the radiogen.

Enzymes are organic compounds able to accelerate in a pronounced manner a number of chemical reactions. Enzymes are credited with having NO ENERGY, but nevertheless with

CONTRIBUTING VAST AMOUNTS OF ENERGY. Enzyme activity increases in the springtime or as a result of stimulation, or from a rise in temperature.

Here we can clearly see the analogy between the solar process which provides for an interior fissioning on an extremely small scale. We suggest you read anything you can find by Dr. Crile, specifically; "The Phenomena of Life" published in 1936 by Norton & Company. Try Health Research as they probably have a reprint.

<http://www.nuenergy.org/a-radio-electric-interpretation/>

A Radio-Electric Interpretation

Selected excerpts pertaining to radiant energy power generation

Of high electric significance are the exquisitely thin, low-conducting lipid structures which surround each of the trillions of cells which compose the body. It is a well known physical fact that an oil film has a high capacity for the accumulation of electric charges and that the thinner the film the higher its electric capacity. While the other essential constituents of the organism might play a role in an organism operated by some other form of energy, these lipid structures are of the highest significance in an organism which is operated by electrical forces.

The animal organism as a whole is enmeshed in a network of highly specialized electric conductors—namely, the nervous system. In its physical composition, therefore, the body is not only highly adapted to electrical processes but its constituents in their inter-relations within the organism could not be of any conceivable value in a mechanism operated by any other form of energy. -- p. 48

The mechanism by which oxidation within the protoplasm of the cell generates the electric charges that operate the cell and the organism we postulate is due to the short wave radiation generated and emitted by oxidation within protoplasm. According to this conception this short wave radiation knocks off electrons. These moving electrons charge up the intricate network of the nervous system as well as the infinitely thin membranes that separate the various units of structure and network within the cells. -- p. 48-49

The nucleus of the cell is comparatively acid. The cytoplasm of the cell is comparatively alkaline. The nucleus and the cytoplasm are separated by a semi-permeable membrane.

Therefore the cell is a bipolar mechanism or an electric battery, the nucleus being the positive element, the cytoplasm the negative element. The rate of oxidation in the nucleus is greater than the rate of oxidation in the cytoplasm; and therefore as the electric tension increases in the nucleus, the electricity passes through the nuclear membrane; the electric potential in the nucleus falls and in consequence the current is interrupted. Since the potential is again immediately restored by oxidation, radiation and other chemical activity, we conceive that an interrupted current passes continually from the positive nucleus to the negative cytoplasm and in consequence a charge is accumulated on the surface membranes. As we have stated, these membranes of infinite thinness and of high dielectric capacity are peculiarly adapted to the storage and adaptive discharge of electric energy. -- p. 49

It was apparent that the variations in that form of radiant energy which we call heat followed

closely the variations in electric conductivity, electric capacity and electric potential observed under like conditions, thus indicating the fundamental nature of these electric and radiant forces.

But it is not the long wave heat radiation but the short or ionizing wave radiation that has hitherto escaped detection as the energy that builds up protoplasm and generates the electric changes and currents that operate protoplasm.-- p. 78

The long wave or heat radiation affects molecules but does not affect atoms as far as the structure of the atom is concerned. To build an organic compound it is necessary to have such a powerful short wave radiation that it can affect or modify the structure of the atom by knocking off electrons or by changing their paths, thus altering the charge of the atom. When an electron is knocked from an atom, the balance of charge is shifted toward the positive side. Thus making the atom more positive and giving it a greater affinity for other atoms. In other words, short wave radiation gives chemical affinity to the atoms. Therefore to build such organic compounds as those which make up plants and animals, radiation of certain short wavelength is essential. -- p. 78-79

Since the interior of an animal receives no radiance directly from the sun, an animal necessarily must use the sun's radiance that is stored in the atoms and molecules of the protoplasm of the plant. Just as non-living, for example in coal and oil, the stored radiance of the sun is present in the atoms of the carbon compounds and is released as light and heat which in turn effect mechanical activity, so in animals solar radiation is released from the atoms of the plant food and produces light and heat animal activity. Einstein's Law of Equivalence should be cited here, viz., that energy of an atom is given out in the same quanta as those received by the atom, so it is not a figure of speech but a fact that the sun shines again in the protoplasm of animals, endowing them with the unique power of the sun.

Is radiation merely a waste product or is this radiation an essential function of protoplasm? This question is answered in part, for the nitrifying bacteria at least, by the following quotation from a report of the U.S. Bureau of Chemistry and soils: 1

"There are various ways of rendering the inert nitrogen molecule chemically active. Heat and electricity are effective when properly applied, and results obtained in this bureau have indicated that ultraviolet light having very short wavelengths is an agency to this end. ... Spectroscopy has recently furnished detailed knowledge of the structure of the nitrogen molecule, and it is now possible by means of ultraviolet light to alter the structure, so as to render this exceedingly inert substance chemically active." -- p. 79

Since the energy that constructs and operates animal protoplasm is derived directly from plant protoplasm and since the energy that constructs and operates plant protoplasm is directly from solar radiation, lightning, terrestrial electricity, and the nitrifying bacteria, what the animal specifically obtains in his food is the radiation or quanta of energy which has been packed into the atoms of the plant protoplasm by sunlight, by lightning, by terrestrial electricity, and by the nitrifying bacteria. -- p. 79-80

Thus modern physics has given us a simple conception of the source of energy in animal protoplasm, since only short wave radiation can knock off electrons and hence confer chemical affinity of the high order demanded for synthesis and growth.

Short wave radiation accounts also for the origin of the electric charges and currents in protoplasm. The same short wave radiation which confers chemical affinity detaches electrons in infinite numbers, thereby charging up the innumerable membranes and nerve and electric circuits which are present everywhere in protoplasm. This is the origin of the electric charges by which protoplasm is operated. This is as simple as the operation of the photo-cell in which short wave radiance falls upon an electrode and detaches electrons, which in turn charge up the available circuits which operate robots. In protoplasm are present compounds whose electrons are detached with facility by ultraviolet, visible and short infra-red wave radiation. It would thus seem that protoplasm has the properties of a photo-electric cell. -- p. 80

In the animal battery as in the man-made battery, when as the result of continuous action the contra-electric current equals the primary current, then the electric circuit is inactive and dead; the electric potential within the circuit and within the cells coincidentally falls to zero—and the animal is dead. Such a death is unique in that there is no struggle, there is only a continuous loss of energy, until the animal or man stops living as inconspicuously as a battery fades to zero. Just as a battery runs down by virtue of polarization and is restored by opening the circuit, so is the case of the billions of brain cells that run down by virtue of polarization as the result of adequate stimulation of the senses, if the stimuli are reduced below the threshold of action, the nerve circuits are opened and depolarization occurs. This is sleep. -- p. 126

The possession by protoplasm of a mechanism that can generate and emit ionizing radiation interprets most simply that hitherto unexplained phenomenon, the ionization of oxygen, since it explains by what means oxygen is ionized, hence made chemically active. It is the short wave radiation emitted by the radiogens that ionizes oxygen. The atmospheric oxygen at the low level of energy in the alveoli of the lungs, in solution in the blood stream, in the hemoglobin, in the plasma that bathes the cells of the body, in the electrolytic solutions within the cells themselves, indeed throughout its journey from the atmosphere until it reaches the ionization radiation emitted by the radiogen—this atmospheric oxygen remains at its primary low energy level and is incapable of performing its elementary fundamental role of energizing the organism by oxidation. Ionization of this element, oxygen, is accomplished instantaneously by the radiation emitted from the molecular unit, the radiogen, just as the ionization of the oxygen in the air is accomplished instantaneously by lightning. -- p. 127

In between the long infra-red and ultraviolet rays comes the visible by Dr. Glasser. He has found that when sodium chloride and other crystalline salts are irradiated by radium and the x-ray, they emit ultraviolet radiation and that this emission is increased by exposure of the irradiated salt to visible light. -- p. 129-130

It would appear that the specific form of energy that builds and operates protoplasm is radiant and electric energy; that radiant and electric energy is released by oxidation; that radiant and electric energy fabricates growth. It follows, therefore, that excitation, depression and death can be measured in physical terms.-- p. 167

There is evidence that in age and senility there is a lowering of the oxidation, radiation and electric potential of the organism; therefore it would be reasonable to expect that the one agent that can control oxidation, radiation and electric potential, that is, the thyroid hormone, if administered in suitable cases would tend to ameliorate the feebleness and inertia of declining years. -- p. 174

As has already been stated, a cell can function only when under a certain electrical strain, and this electrical strain is constantly being regenerated by the radiant energy produced by oxidation; in other words, oxidation, radiation, and electric potential go hand in hand. Whatever interferes with oxidation interferes with radiation and its consequent electric potential. -- p. 189

Several types of photo-electric cells known to respond to ultraviolet light have been employed as detectors. An improved method of detection is a combination of the photo-electric cell with the principle of the Geiger-Müller counter. Rajewsky, Frank and Rodionow, Audubert, and Barth, who used this type of detector for mitogenetic radiation, claimed that various materials, including onion bulb, cancer tissue, frog sartorius muscle in contraction, the peptic digestion of fibrin, and the oxidation of FeSO_4 , gave an increase in the counts, indicating the emission of rays. -- p. 346-347

Sodium chloride crystals previously irradiated with roentgen rays have been found to release stored energy in the form of ultraviolet light in the presence of visible light. Although this radiation with an emission maximum at 2,450 Å is extremely weak, it can be detected easily with the photo-electric Geiger counter. -- p. 348-349

Since all matter is electrical in nature and since in the final analysis all energy is radiant and electric energy, we conceived that protoplasm must be generated and operated by electric energy.

The generation of radiant and electric energy in animals is made through oxidation of the organic compounds of the plant; that is, solar radiance is released in the animal by oxidation.

Animals are adapted to oxidation, just as a combustion engine is adapted to oxidation. Much of the body of animals, the lungs and the circulatory system, is related to the fact that it is through oxidation in animals that the sun's radiance is radiated in protoplasm; that is, oxidation causes the sun to "shine" again in protoplasm. Animals, like plants, grow by virtue of solar radiation and re-radiate solar radiation. -- p. 360

The intensity of the re-radiation of solar energy in animals is increased by thyroxin, by adrenalin, by nerve impulses. The sun's radiance is dimmed at night and in the winter but the identical solar radiation in animals shines as brightly at night as in the day; as brightly in the winter as in the summer. -- p. 360-361

These considerations would lead our physicist to investigate the chemical and physical nature of protoplasm and he would first note that the surface films could not generate adaptively the intense energy of radiation, and would consider what would be the physical nature of a hitherto un-described molecular furnace.

Short wave radiation results from oxidation of nitrogen and carbon compounds—an oxidation at high speeds as in the detonation of explosives. It would be evident that there is in the protoplasm the constant re-radiation of the energy put into the nitrogen and carbon compounds; but the temperature of the protoplasm is at almost a cold level, though higher than the environment.-- p. 363

Our physicist therefore would ask himself what would become of the intense heat of combustion since it is not manifested in the organism as a whole? He would see clearly that it

is the great preponderance of water which dissipates it. The physicist would then see what the fuel that energizes protoplasm is. He would see that protoplasm is water-cooled. He would see how it is made to flare up adaptively. He would consider the number and size of these generators of radiation—these radiogens. It would be clear that if the radiogens should coalesce they would either extinguish each other or would fail to be water-cooled. Therefore, the radiogens would be spaced by some form of energy analogous to that which spaces colloidal particles. The physicist, knowing that animal protoplasm contains a constant but small amount of iron—bound iron—and knowing that iron promotes oxidation, would think that while cold iron like cold oxygen, cold nitrogen, cold carbon, from the standpoint of energy is one thing, on the other hand a molecule of iron at a temperature of from 3,000 to 6,000 degrees Centigrade would be “excited” iron and a vastly different thing. Our physicist would then glimpse the fundamental role of iron; namely, in the “excited” state the molecule of iron would be the luminous sun of the radiogen—the center of the protein fire which would hold the atoms of the proteins in its “energy field” as the primary radiogen, the sun, holds in its “energy field” the planets. And so the physicist would consider that these theoretic radiogens would space themselves through the “energy fields,” thus making a uniform distribution for the genesis of energy; and also a uniform division of the water-cooled system.-- p. 363-364

[http://www.w3.org/1999/xhtml">http://www.mountainman.com.au/ab_kuhn.html](http://www.w3.org/1999/xhtml)

Radiogens

At the very time we were first assembling the material for this lecture, there came an announcement in the daily press of a discovery by a modern physicist, Dr. George W. Crile, of the Cleveland Laboratories, which practically fixed the seal of truth upon every word we have uttered or shall utter in this lecture. It was most startlingly corroborative of our exegesis. He announced that he had discovered at the heart of every living organism a tiny nucleus of energy, all aglow, with temperatures ranging from 3000 to 6000 degrees of heat, which he called "radiogens" or "hot points." These, he said, were precisely akin to the radiant energy of solar matter. He affirmed, in short, that a tiny particle of the sun's power and radiance was lodged within the heart of every organic unit! The light and energy that has life. What would be Crile's surprise, however, if he were to be shown a sentence taken from Hargrave Jennings' old book on the Rosicrucians, written over sixty years ago: "Every man has a little spark (sun) in his own bosom?" For this was one item in the teaching of the Medieval Fire-Philosophers, and the reason they were styled such. They knew what Crile has discovered, as likewise did the ancient Bible-writers. They based their Sun-god religions upon it. Our souls are composed of the imperishable essence of solar light! We are immortal because we are Sun-gods.

<http://www.time.com/time/magazine/article/0,9171,882458,00.html>

Onions radiate electromagnetic waves

Eyes, fingers, blood emit rays which kill cells. As living things die, they produce "necrobiotic" rays. All this several investigators have demonstrated, and from their demonstrations drawn a theory that all living matter radiates energy (TIME, July 4, et ante). But how does this go on? Cleveland's ingenious Surgeon George Washington Crile, who long

has been studying the electronics of living things, last week offered his theory to the Central Association of Science & Mathematics Teachers meeting in Cleveland.

Every bit of protoplasm is loaded with multitudes of "hot points" or "radiogens" which produce the rays, according to him. Temperature of those points must be between 3,000° and 6,000° C. "If one could look into protoplasm with an eye capable of infinite magnification," he elaborated, "one might expect to see the radiogens spaced like stars, as suns in infinite miniature." The "interstellar" spaces absorb the intense heat of his radiogens, he reasons. The nucleus of his theoretic radiogen "would theoretically be a molecule of iron." Dr. Maria Takles, a Crile associate, figures four billion radiogens in a cubic centimetre of muscle.

The great importance of radiogens in Dr. Crile's mind is that, if they really exist, they may explain how plants add oxygen & hydrogen to carbon dioxide to make sugar, how animals add oxygen to sugar to form carbon dioxide — chemical reactions which require access of considerable energy.

http://books.google.com/books/about/The_phenomena_of_life.html?id=dMFqAAAAAAAJ
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The phenomena of life;: A radio-electric interpretation
George Washington Crile

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George Crile, Sr.

The famous physician who was one of the founders of the famous Cleveland Clinic, worked for nine years formulating the all but forgotten bipolar theory of living processes. The works he did on the body's bioelectrical energies were truly monumental as was his work on the cause of surgical shock. He established the technique and value of the blood transfusion. During his long search for the underlying causes of fatigue, exhaustion and death at work in

the University College of London, war hospitals in France, and the Western Reserve University Medical School, his data made it apparent that in order to understand the cause of surgical shock and death, it was necessary to understand the body as an electric potential.

That is, the maintenance of the acid medium of the nucleus and the alkaline medium of the cytoplasm. His histological findings concluded that the lipid films surrounding the nucleus and the cytoplasm offered a definite resistance to the positive hydrogen ions and that in death this resistance is lowered.

Crile believed that the animal organism as a whole is enmeshed in a network of highly specialized electric conductors - namely, the nervous system. In its physical composition, therefore, the body is not only highly adapted to electrical properties but its constituents in their interrelations within the organism could not be of any conceivable value in a mechanism operated by other forms of energy... We may consider then that electricity keeps the flame of life burning in the cell; and that the flame (oxidation) supplies the electricity which is the vital force of the animal... We may therefore consider the cell as a bipolar mechanism, the nucleus being positive element, the cytoplasm the negative element. The oxidation in the nucleus appears to be on a higher scale than the oxidation of the cytoplasm; and therefore as the electric tension increases in the nucleus, the current breaks through; the potential in the nucleus falls and in consequence the current is interrupted. Since the potential is again immediately restored by oxidation, we conceive that the interrupted current passes continually from the positive nucleus to the negative cytoplasm and in consequence a charge is accumulated on the surface films. These films of infinite thinness and of high dielectric capacity are peculiarly adapted to the storage and adaptive discharge of electric energy... There is no more energy per mass in the living than in the non-living. In the living, energy is captured and stored and made to run the organism - in the non-living the same amount of energy exists, but is balanced; equalized; inert; non-living.

His works and perceptions were nothing short of genius. What he called the Quest in his book *THE PHENOMENA OF LIFE, A RADIO ELECTRIC INTERPRETATION* (1936) was to find the cause and correction of death by surgical shock. After ten years of experimentation he states: According to our findings, the maintenance of the acid-alkali balance between the nucleus and cytoplasm of the cells - the electric potential - is essential to life and furnishes the immediate driving energy of the living process itself. Its reduction to zero or equilibrium is death... In structure and function the unit cells which drive the organism must be adapted to generate and to release radiation and electricity... The mechanism by which oxidation within the protoplasm of the cell generates the electric charges that operate the cell and the organism we postulate is due to the short wave radiation generated and emitted by oxidation within the protoplasm.

<http://www.jstor.org/stable/1640755>

A Mechanistic View of Psychology

by G. W. Crile

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George W. Crile 1926.

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THE PHENOMENA OF LIFE

A Radio-Electric Interpretation

George W. Crile 1936 Follow the author's exploration into the phenomena we call LIFE...With impeccable logic he shows how oxidation produces radiant energy. Radiant energy generates electric currents in the protoplasm. The normal and pathological phenomena of life are manifestations of protoplasm. Therefore the phenomena of life must be due to radiant and electrical energy.

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ABSTRACT

Into this book the author has put most of the biologic investigations and speculations that have interested him over a third of a century. It is interesting reading, coming from a busy surgeon, but not easy reading. Some doctors take to golf, others to bridge, while Dr. Crile seeks his stimulation and recreation in the profundities of biology. The radio-electric interpretation of living processes may not appear very convincing to the biologists, but the tale of Dr. Crile's quest "Why did William Lyndman die?" is a charming one, and human even in its incompatables and contradictions. The basal metabolic rate does not drop 50 per cent during sleep (p. 163). The human infant has no natural weapons for attack, yet he seems to experience both fear and anger (p. 187). It may worry the thoughtful to find worry defined as "interrupted stimulation" (p. 189). ..

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Zuccala Lytic Test

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George Crile, an eminent American physician, once published a memorable paper fact remains that the body produces a strange phenomenon unlike a normal body . It ... blood tests made from people of all walks of life and all ages.
