

THE ELECTRONIC REACTIONS OF ABRAMS



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Boston, Mass.
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AN ENDORSEMENT

"The clarification of a prolix subject is oftentimes a more difficult task than its conception and predicates a thorough understanding. Dr. Francis Cave has accomplished this task and it exceeds in clarity any other presentation extant."

DR. ALBERT ABRAMS

May 14th, 1922.

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FOREWORD

Full justice to the subject which has been assigned me would require much more time than has been allotted for this entire Convention, and it is, therefore, with mixed feelings of hesitancy and pleasure, and with a full appreciation of my own scientific shortcomings, that I have prepared this address, which will—I trust and believe—mark the turning point in the lives of many of my hearers and prove for them the “Open Sesame” to greatly enlarged fields of usefulness in the service of humanity.

For the Electronic Reactions of Abrams unquestionably constitute the most amazing and revolutionary concept in the entire history of medicine and, because of this, may easily be judged from the first impressions of the casual thinker as being too fantastic and impossible to warrant serious consideration. Nevertheless, and notwithstanding the usual verdict of hasty judgment, they are based upon entirely scientific fundamentals which can be readily demonstrated to the satisfaction of any earnest seeker after Truth.

Physical science reveals the universality of law, and its revelations must therefore dominate every phase of medical research. The human must not be segregated as something apart from other entities of the physical universe. There is only one physics, one chemistry, and one mechanics governing animate and inanimate phenomena; and, if progress is to be made, these phenomena must be studied by physico-

chemical methods. Practical medicine must, therefore, embrace all of the sciences and a complete clinical diagnosis must necessarily invoke physical, biological and chemical methods.

Other leading thinkers in the world of medicine besides Dr. Albert Abrams have appreciated the fact that most of the diagnostic and therapeutic methods now in use have become antiquated and entirely out of gear with the present standards of our civilization and intelligence. Perhaps no one is today better qualified to speak on this subject than that eminent English physician, Sir James Mackenzie, F.R.C.P., whose opinions are received with respect wherever quoted. In his recent splendid volume on “Diagnosis and Treatment in Heart Affections”, he makes these significant statements:

“If progress is to be made, a new spirit must be infused into teaching and research. If the most enlightened members of our profession were to inquire into the grounds of their beliefs, even those most dearly cherished, how often would they be surprised to find on what fallacies their beliefs are based. Medicine is being evolved out of ages of tradition, and the bonds of tradition are difficult to shake off. It is not only the superstitious beliefs of by-gone ages which hamper us, but also the spirit of tradition, which is ever present; for the tendency to believe without reason is ever recurring, while the reverence for authority makes us accept statements without proof. . . . I trust it will not be long before the most recent of pharmacopœias will be regarded as no more authoritative in therapeutics than would a medieval work on Alchemy be regarded as authoritative as a text-book on Modern Chemistry.”

Also, in his still more recent volume on “The Future of Medicine”, he shows his broad comprehension of the situation in the following words:

“The fact that Medicine is becoming so complex

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"implies that it is being pursued on wrong lines, "for a subject which is based on natural laws becomes easier to understand as the laws become "better known".

These quotations may be accepted as fairly representative of the thought of the most progressive thinkers in the medical profession today and should give pause for the fair-minded consideration of new concepts, however revolutionary and destructive to our previous learning.

In a recent issue of Hibbert Journal, E. Wade Cook declares that "the saddest chapter in human history is the reception given to new truth. We go on repeating the same old blunder age after age. We stone our light-bringers and are always wrong. We should always hail new truth as a possible revelation from God, and the very fact that it is opposed by the old guard is strong presumptive evidence in its favor".

ELECTRONIC HISTORY

Because the very word "electron" is still strange to many ears, we need to remind ourselves that it has long centuries of patient thought and painstaking investigation behind it. It was almost two thousand five hundred years ago that Thales of Miletus noted that the rubbing of a piece of amber would induce in it a new and remarkable state, something which we now describe as a state of electrification. But Thales did something more significant than this when he correctly conceived and described—though in a very crude and imperfect way—the very phenomena which have subsequently linked together the erstwhile isolated departments of physics, such as radiant heat, light, sound, magnetism, and electricity, which steadily bring us nearer and nearer to a knowledge of the indivisible primordial elements of nature, thereby proving that there is behind all of the complexities and seeming contradictions of natural phenomena, a great uni-

fying principle which links them all together and makes them rationally intelligible. This idea, much more than the conception of physical evolution, merits Professor Draper's great phrase: "The discovery of the sanity of the Universe".

For nearly two thousand years after that, men did but little more than grope and guess, but with the Renaissance came a new birth for science as well as for letters and art. From Volta and Galvani to Dalton and Kelvin and Roentgen and Marconi and Abrams the sequence is clear.

In his book on "The Electron", Professor R. A. Millikan calls attention to the extraordinary scientific fruitfulness of the first half of the nineteenth century, when the propounding of the molecular theory supplied the needed basis for the science of physics, from which sprang in a very few years the whole science of modern chemistry which has recently revolutionized human industry. And the twentieth century, although less than twenty-five years old, has already attempted to take a still bigger and more significant step. "By superimposing upon the molecular and the atomic worlds of the nineteenth century a third electronic world, it has sought to reduce the number of primordial elements to not more than two, namely positive and negative electric charges. Along with this effort has come the present period of most extraordinary development and fertility—a period in which new viewpoints and indeed wholly new phenomena follow one another so rapidly across the stage of physics that the actors themselves scarcely know what is happening—a period, too, in which the commercial and industrial world is adopting and adapting to its own uses, with a rapidity hitherto altogether unparalleled, the latest products of the laboratory of the physicist and the chemist. As a consequence, the results of yesterday's researches, designed for no other purpose than to add a little more to our knowledge of the ultimate structure of matter, are

seized upon by the practical business world and made to multiply tenfold the effectiveness of the telephone or to extract six times as much light as was formerly obtained from a given amount of electric power." . . . "Every increase in man's knowledge of the way in which Nature works must, in the long run, increase by just so much man's ability to control Nature and to turn her hidden forces to his own account."

Professor Millikan has also pointed out that "science, like a plant, grows in the main by a process of infinitesimal accretions. Each research is usually a modification of a preceding one. Each new theory is built, like a cathedral, through the addition by many builders of different elements. This is pre-eminently true of the electronic theory." A perusal of Professor Millikan's book, which has gone through seven editions in five years, is well worth while to any investigator along these lines.

Lord Kelvin states our proposition succinctly when he says, "I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the stage of science."

Another writer (Clerk-Maxwell) tells us that "Progress is symbolized in the clock, the balance, and the foot-rule", which is but another way of saying that if we can time, weigh, and measure, we can submit facts instead of theories.

ELECTRONIC EVOLUTION

Let us then approach the study of this subject with the realization that Dr. Abrams has merely applied to the field of medicine the older knowledge and the newer discoveries of the physicists in the same manner that Marconi has applied them in the

field of wireless transmission, and we will then have much less difficulty in understanding his extraordinary theories and works, which I shall endeavor to describe to you. And if we will further realize that there is today exactly as much sense in denying the possibility of wireless transmission as in denying the Electronic Reactions of Abrams, it will save us from many awkward future explanations and humiliations due to slowness of apprehension of the most revolutionary achievement in the entire history of medicine. The very audacity of the claims of Abrams entitles him to a fair-minded investigation which will either classify him as one of the greatest scientists of the ages or else will relegate him to oblivion.

After a course of intensive study of Dr. Abrams' work with that learned and broad-minded physician, Dr. Mather Thomson, F.R.C.P., of London, it was my pleasure and privilege to be present at Dr. Abrams' laboratory in San Francisco and to witness personally demonstrations of his methods which in my opinion entirely remove them from the realm of abstract theory and place them at once in the field of pure science.

But there are many reasons why it is not an easy matter to discuss the Abrams' concept—either for physicians or laymen—the chief of which is perhaps the lack of an established technical language adequate to express his ideas. In a field of activities where new and radical discoveries are matters of almost daily occurrence, he has been obliged either to make use of technical terms previously applied in other connections, or else to develop a terminology of his own invention, for doing both of which he has been most heartily criticized.

There is one other most serious obstacle in presenting this concept, and that is the fact that it introduces a new and largely unexplored element of practical physics into the field of medicine and thus finds the average physician (no matter how

highly educated) totally unprepared to realize its significance. On the other hand, the world's leading experts in the field of physics, as applied to external and material things, find themselves totally at a loss to appreciate the delicate mechanism involved in the automatic reflex activities of the living organism and in co-ordinating their wonderful discoveries in physics with the latest developments in physiology. It appears, therefore, that a new type of physician is imperative and that the successful physician of the future—regardless of his school of practice—must be, first of all, a physicist.

Such a composite of physician and physicist is Dr. Abrams, plus an inventive genius of the first order. This rare combination of qualities has enabled him, like Columbus and Bell and Edison and Marconi, to achieve the hitherto impossible. Some one has said that it was not the discovery of a new world which made Columbus great, but rather the courage to follow a new idea beyond the horizon, which suggestion brings Abrams at once to mind.

Other scientists besides Abrams have theorized and proven that certain elements and substances are radio-active—that is, that they are continuously throwing off a measureable degree of energy; but Abrams goes a step further and takes the broad stand that all material things are radio-active and that if sufficiently delicate apparatus can be devised, the degree of radio-activity of all matter can be measured in such a way that when its radio-active characteristics are ascertained, it would be possible from this data to determine the actual substance being examined, without even seeing it.

Modern science has brought us much nearer to a realization of the alchemist's dream of the transmutation of metals, because it is already proven that certain of the elements, previously considered as primary and indivisible, are in reality undergoing slow transformation into entirely different elements—as, for instance, uranium and thorium, with lead

as the final product. According to a recent statement made by Professor Sir Ernest Rutherford, of Cavendish Laboratory, Cambridge, it is now possible to obtain hydrogen out of six different elements, namely, nitrogen, boron, fluorin, sodium, aluminum, and phosphorus.

It being conceded, therefore, that the last word in sub-atomic research has not as yet been spoken, it becomes much easier for us to make friends with the Abrams concept regarding the radio-activity of all matter. But Abrams has not only propounded the theory—he has gone a step further and has devised sufficiently delicate methods and apparatus to measure such radio-activity. And while other physicists have been busy with the relatively gross reactions of elements like radium, whose alpha rays are expelled at the tremendous velocity of about 10,000 miles per second, Abrams has applied the electronic method to the measurement of the infinitely more delicate radio-activity of the tissues of the living organism and has thereby laid the foundation for the development of a system of diagnosis and therapeutics which appears, upon investigation, to be absolutely fundamental in principle and, as a principle, the very last word possible in the healing art. Crude as the present methods and apparatus may some day prove to have been, they nevertheless today represent the development of a basic principle, and whatever further development may ensue must be evolved from this principle.

Grover's "Handbook of Electrotherapy" tells us that "an electron is the basis of all fundamental matter. Every electron is the same as every other electron, the difference in matter, as it appears to us, being due to the number and movement of the electrons in relation one to another within the atom of that particular substance. An electron consists of an electrical charge. It is possible to count electrons as they emanate from radium as helium. It is

"quite probable that helium was the first existing element from which all other matter is transmuted."

Speaking of electricity, it says: "While we do not know WHAT it is, we do know what it is NOT. It is not a tangible entity. It is not energy, as many claim. Electricity is a CONDITION. The theory accepted by most physicists of today is that electricity is a SUBSTANCE, composed of moving electrons, and is made manifest to us by its magnetic, thermal, and chemical effects. An atom of hydrogen, the lightest conceivable particle of gas known to us today, is said to contain approximately 1800 electrons. The metal, iron, and hydrogen gas differ only in the number of electrons and the manner in which they are grouped. The X-Ray is the agent through which the testimony of the proof of this statement has been collected."

"An electron can shoot across space or through substance such as iron, copper, glass, etc., without touching the electrons of the substance through which it passes. Electrons flow through metal as does water through a pipe. . . . An idea may be had of the size of an electron by the fact that 1 gram of radium emits electrons at a rate of several millions per second and requires 20,000 or more years to be entirely consumed."

THE ABRAMS CONCEPT

Quoting from some of Dr. Abrams' own writings, we read: "We speak of perpetual motion as impossible and yet the whole universe is naught else. Matter is only an effect of a definite kind of motion. During the revolutions of electrons, thousands of billions of times per second, an electro-magnetic field of energy is created which is called radio-activity. The physicist limits radio-activity to only a few elements because

"his apparatus is not sensitive enough to detect the radiations of all matter.

"It can be shown that all matter is radioactive if one employs the human reflexes. A reflex is an involuntary act. When light, which is radiant energy, strikes the eye, the pupil contracts. This is a reflex. The animal reflexes exceed in sensitivity any apparatus yet devised by man. The retina of the eye is 3000 times more sensitive than a photographic plate. It has been shown that the sense of smell surpasses in sensitivity the most impressible scientific instruments. The lungs antedated the bellows; the heart, the pump; the hand, the lever; and the eye, the photographic camera.

"Telephonic and telegraphic apparatus duplicate mimetically what has always been done by the nervous system and always by aid of the same energy.

"Every phenomenon in nature is merely a question of a definite kind of motion or vibration. When the aerial waves are more than 36,000 vibrations per second, the ear cannot recognize sound; when 18,000,000 vibrations have been reached, we perceive a sensation of light, and as the vibrations gradually increase, the eye perceives one color after another, until violet is reached with its 733,000,000 vibrations per second."

"A drop of blood with its countless billions of electrons is a condensation of the multitudinous vibrations in the body. The mineralogist finds it unnecessary to examine a mine to determine the nature of its products. It is unnecessary to perceive a magnet to detect its energy nor a dynamo to measure an electric current. With a spectroscope one may detect the millionth of a milligram of matter and even invisible objects may now be detected by heat radiations.

"The fundamental problem of astronomy is to

"determine the nature and composition of celestial bodies. Now, these bodies cannot be brought to the laboratory for analysis, but the energy which they emit (light and heat rays) may be investigated by the spectroscope and the knowledge thus furnished is as accurate as if a sample from some distant star were tested with chemical reagents. This method of radioanalysis was commenced more than 100 years ago and is practically the same method which is now pursued in securing the Electronic Reactions of Abrams." (NOTE: these reactions will hereinafter be called the ERA.)

ITS BROAD APPLICATION

In diagnosis, the ERA can not only determine positively the existence of conditions of malignancy or infection such as carcinoma, sarcoma, tuberculosis, acquired and congenital syphilis, coliseptis, streptococcaemia, etc., etc., but can determine them in their very incipency, before clinical manifestations are in evidence, and furthermore can localize them definitely in any part of the body. And, perhaps most amazing of all, the degree of their virulence can be mathematically determined and, as improvement is made, the degree of improvement can likewise be definitely measured.

I fully realize that this statement is of the most tremendous significance and I have carefully weighed every word of it. In diagnosis alone, the Abrams concept offers to the world by far the most accurate and useful method ever propounded. And in the field of therapeutics, the electronic methods—broadly speaking—are capable not only of sterilizing an infection of any kind anywhere in the body, including the hidden areas of luetic infection, but perhaps most astounding of all, can draw the fangs from malignant conditions and destroy the virulence of carcinomata and sarcomata—providing the virulence and tissue destruction is not

too great and the metastasis not too diffuse. In view of present performance, however, it is entirely reasonable to presume that the natural evolution of this great electronic concept will develop methods and apparatus of such power that malignancies of any degree of virulence whatsoever may be destroyed and this growing curse of cancer be forever eradicated from the face of the earth.

These statements are based upon a philosophical study of the underlying principles of this concept and upon the amazing improvement already manifest in the cases of several of my own patients, heretofore considered as entirely hopeless.

The entire outlook is almost staggering and the call for service most urgent. Those physicians who intelligently investigate, appropriate, and utilize this new philosophy of Health and Disease must inevitably sense the radiant happiness of pioneers in this most revolutionary medical concept of all the ages.

Diagnosis may be made from the patient himself or from a few drops of his blood, taken upon a piece of white absorbent paper. These few drops of blood carry within themselves the radioactive qualities which, when properly interpreted, convey an accurate picture of the physical condition of the patient in the same manner that the point of the needle of the phonograph carries the tones of the entire orchestra, from piccolo to bass-drum. The phonograph is today accepted as an established fact, and yet precisely the same factors were utilized in its production as are utilized in electronic diagnosis and treatment, namely, vibratory impulses passing through the primeval ether. Not only can the malignancy or infection be diagnosed, localized, and its virulence determined, but still further refinements of diagnosis may be used to determine the approximate age of the patient, the sex, nationality, and even the nationality of the patient's parents.

Dr. Abrams has worked out the normal vibratory

rate, or degree of radioactivity, of healthy viscera and has found that when an organ or tissue becomes diseased, its vibratory rate is immediately changed and with his delicate apparatus the degree of change can be measured in such a way as to determine definitely the type of the disease. For instance, the vibratory rate or electronic value of carcinoma is 50; of sarcoma, 58; of tuberculosis, 42; of streptococcaemia, 60; of coliseptis, 6; etc., etc.

The rate of radioactive energy thrown off by a normal liver having been already worked out and measured, it naturally follows that when that liver is attacked by carcinoma its rate of energy changes and in such a manner that the measurement of this change of energy can be interpreted as a positive diagnosis of carcinoma. The energy from a normal kidney is a definite and known quantity. When that kidney becomes attacked by tuberculosis or streptococci, its vibratory rate changes immediately in such a manner that a positive electronic diagnosis of tuberculosis or streptococcic infection can be made.

From the osteopathic standpoint, these facts are of the very highest importance, because it is entirely possible to measure out the degree of radioactivity of organs or tissues deprived of their normal vitality because of interference with their normal supply of blood and nervous energy, due to some anatomical obstruction or lesion—in other words, it is entirely possible to determine and measure mathematically the actual value of the osteopathic concept and thereby enable Osteopathy to prove itself more quickly to the most exacting scientific mind. Who will be the first osteopathic investigator to apply electronic methods in mathematically proving the value of the osteopathic procedure of adjustment?

The electronic diagnostic procedure naturally requires both a delicacy of technique and an accuracy of observation, but when these factors are in evidence, the results are definite and illuminating.

THE LABORATORY APPARATUS

The apparatus required is most simple in construction and operation—with one exception, namely, the necessity for using as a part of the equipment the reflex nervous mechanism of a normal human being, in whose body occurs certain measureable reactions to electronic energy conveyed to it from the patient, tissue specimen, or blood being examined. Thus far neither Dr. Abrams nor any other scientist has found or developed any apparatus so delicate and responsive to radio-active influence as the human nervous system—although it is my belief that such an artificial apparatus may be ere long perfected in Dr. Abrams' laboratory, upon the completion of his new diagnostic machine called by him the "Oscillophone", in which he is slowly but surely developing the diagnostic equivalent of a nervous system, and which, upon completion, will eliminate the present necessity for the use of the living "subject" or re-agent.

Let us enter a laboratory where diagnosis is being made by electronic methods. In the subdued light, we see a young man stripped to the waist and the diagnostician is percussing various areas of his abdomen and carefully noting the variation in percussion sounds. This young man is called the "subject" (or re-agent) and is facing the geographical west, which has previously been carefully determined by means of the compass. Perhaps this is the first time in medical history when physicians have been called upon to use the compass in the diagnosis of human ailments, but experience will prove to any investigator that if the subject faces any other direction than the geographical west, proper reactions cannot be obtained.

The casual thinker will perhaps consider this as the first impression of an entirely ridiculous performance, and yet it is no more ridiculous than the use of the compass itself because its needle points

to the magnetic north, a fact which is today merely a commonplace and accepted without comment by adults and children alike.

MAGNETISM AND THE COMPASS

This idea of the compass, which dates from about the year A. D. 1200, was the first important discovery in the science of magnetism. Dr. William Gilbert, who was the leading man of science in England during the reign of Queen Elizabeth, was led to suggest that the earth itself is a large magnet. Since that time navigators have located the North Magnetic Pole not far from Baffin Bay and the South Magnetic Pole somewhere between Australia and the South Pole.

Various scientists have developed apparatus for proving the constant effects of magnetic currents passing between the North and the South Magnetic Poles. I quote from Grew's "Text Book on General Physics:"

"If a large loop of wire be made in one part of a closed circuit containing a galvanometer, we have only to hold this loop alternately in an east-and-west and in a north-and-south vertical plane in order to produce an electric current. When the plane of the loop is vertical and north-and-south no magnetic lines from the earth pass through it; they pass along each side of it. But if the coil be suddenly rotated about a vertical axis, so as to lie on an east-and-west plane, the earth's lines of force would thread through it, and we observe in the circuit an induced current."

Beyond question, the same magnetic influences which draw the compass needle to the north, or give us the induced current in the experiment already recited, are also concerned in this matter of electronic diagnosis. And please note carefully that our "subject" must also be standing upon metal plates connected by wires to the water pipes or

radiator, in order to furnish the proper "grounding" required. Variation of the technique already described will result in failure or inaccuracy.

Beside the living human "subject", the apparatus required is as follows:—The "Dynamizer", which is merely a specialized type of condenser and consists of a little round black wooden box containing metallic contact points from which grounding wires run to the water pipes or radiator. From the metallic top of this condenser passes a short insulated wire to the "Reflexophone", which is simply a specialized type of triple rheostat, capable of measuring up to a total of 61 Ohms. From this rheostat passes another insulated wire having on its free end a small aluminum electrode which is applied to the forehead of the young man being used as the "subject".

Here, then, is the complete apparatus required for making our electronic diagnostic reactions; the Condenser (or Dynamizer), the Rheostat (or Reflexophone), and the automatic reflex nervous mechanism of the living human "subject". (Dogs and other animals have also been used experimentally and have given good results in this work.)

PRACTICAL TESTS

Let us conduct an experiment with a piece of cancer tissue preserved in formalin solution in a small bottle. This bottle is placed in the Condenser and the Rheostat is set at 50, which has been shown to be the vibratory rate for carcinoma. It would be entirely immaterial whether actual cancer tissue were being used or some blood from a patient having carcinoma—the reaction would be the same, because the blood itself would tell precisely the same story as the cancer tissue.

Previous to the experiment, the abdomen of this young man has been percussed all over, in order to determine his normal degree of resonance for that particular time.

After the electrode from the Rheostat has been placed upon his forehead, the lapse of fifteen or more seconds is required, after which careful percussion will note a beginning dullness in an area about two finger-breadths in height and extending for perhaps six or eight inches across his abdomen at the level of the umbilicus. This particular area will soon become very noticeably dull upon percussion, and if the electrode be then removed from his forehead, the dullness will within a few seconds be replaced by the previous resonance. This test can be repeatedly made and will always give the same definite reaction upon the specified area of our "subject's" abdomen.

Many physicians find difficulty in differentiating between the delicate shades of pitch and tone when using percussion, and it is, therefore, fortunate that a way has been found whereby they may secure their electronic reactions by other means. During some of his constant laboratory experimenting Dr. Abrams found, by the use of a pith-ball charged with static electricity, that the area of his "subject's" abdomen which was dull upon percussion was also throwing off more energy than the surrounding tissues, due to the increased vascularity of the underlying organs. The outcome of this simple discovery was perfectly logical, as, indeed, is every other step of the entire procedure when its fundamental principles are intelligently understood. He found that if a glass rod or rubber wand, properly charged with static electricity by brisk rubbing with silk or wool, were swept over the "subject's" abdomen, it would become noticeably retarded in its progress across that particular area which was dull upon percussion—all other areas being perfectly smooth. It has been found by prolonged demonstration that the glass rod or rubber wand method is fully as accurate as the percussion method, and may even be used at times for even more delicate reactions.

THERAPEUTIC PHILOSOPHY

But to return again to our laboratory, where we have been learning that a piece of carcinomatous tissue, or blood from a patient with such malignancy, will produce a definite area of percussion dullness when its energy is introduced into the nervous mechanism of our "subject". Let us now hold a bottle of the pigment called Congo Red immediately over the Dynamizer containing the blood or tissue specimen and then watch the result. Within a few seconds, we find that the area of percussion dullness has disappeared from the abdomen. What is the reason for this phenomenon? Simply that Congo Red has the same vibratory rate as carcinoma and when the electronic vibrations from the Congo Red are imposed upon those of the carcinoma specimen, they at once dissipate the reaction for carcinoma. Exactly the same thing would happen if we were to hold the bottle of Congo Red one-quarter inch away from the area of abdominal dullness. The reaction would quickly disappear.

Let us now take a piece of syphilitic tissue, or some blood from a syphilitic patient, place it in the dynamizer, place the rheostat at 55 (if for acquired syphilis) or 57 (if for congenital), and then watch for results in the way of localized percussion dullness upon our "subject's" abdomen. This quickly appears as a transverse area above the umbilicus, and can be made to disappear within a few seconds if the electrode is removed from the "subject's" forehead or if any other necessary detail of the technique is eliminated.

After this dull area reacting to syphilis has been noted, let us place a bottle of mercury either in proximity to the area of percussion dullness or on top of the condenser, which will cause an almost immediate disappearance of the reaction, only to

reappear quickly again when the mercury is removed.

A similar experience would be gained if we were to place a specimen of blood from a malarial patient in the dynamizer, note its area of percussion dullness on the "subject's" abdomen, and then disperse the reaction by means of a bottle of quinine held in proximity, either to the dynamizer or the area of abdominal dullness.

VIBRATIONS AND DISEASE

Such instances might be multiplied almost indefinitely and form the basis for the therapeutic philosophy of Abrams. The electronic value of every drug and chemical can be definitely ascertained and made to prove its sanity for therapeutic purposes. Quite recently several clear-headed and progressive Homeopathic physicians have been quite amazed to find that the electronic value of some of their highly diluted remedies, established by the Abrams methods, has corresponded exactly with their previous purely empirical uses.

How can vibrations destroy disease? Everything in nature has its natural period or rate of vibration. If one approaches an object with a source of vibration of the same vibratory rate as itself, the object will also be set in vibration—as shown by the response of the harp to the tuning fork. This forced vibration of the object may attain such magnitude as to fracture or destroy it. Caruso could take a wine glass and determine its tone, or vibratory rate, by tapping it. Then the singing of that tone into the glass would shatter it. This is exactly what happens when you impose upon a disease something yielding its own vibratory rate, and it makes no difference whatever whether that something be a chemical, a pigment, a ray of light, an electric current, or some other thing yielding the same vibratory rate. This brief statement contains in concentrated form practically the en-

tire therapeutic philosophy of Abrams, which prolonged demonstration is proving to be absolutely fundamental and the first successful effort to deal with medical problems upon a purely mathematical basis. Disease is merely the expression of a certain vibratory rate. If this vibratory rate can be measured, something can be found with a similar vibratory rate which can be imposed upon it and destroy it, thereby to a large extent proving the correctness of the Hahnemannian principle of "Similia Similibus Curantur." If we can make it impossible for the vibratory rate of disease to exist, the disease itself cannot exist. Abrams has shown the world not only how to measure out the vibratory rate of disease, but also how to measure out its virulency, a thing which is not possible with any other method known to me. And when these things are ascertained, and the application of his therapeutic reasoning is made, the disappearance of the disease is a practical certainty. Here is the basis for all therapeutic systems, whether allopathic, homeopathic, osteopathic, or mental. The vibratory rate of the diseased organ or tissue must be changed or recovery cannot ensue. Just how this change is successfully made by the different schools of practice could readily be determined by the application of this process of reasoning to their respective problems. The rise or fall of therapeutic systems and schools of medicine will hereafter be determined by the degree of their acceptance and application of the basic electronic principles and practices first enunciated by that scientist and humanitarian, Dr. Albert Abrams, of San Francisco. He has been the first to supply a definite yardstick by which all other methods can and must eventually be measured.

DRUGS AND VIBRATIONS

Abrams has taken the stand that whatever efficacy drugs of any kind may possess is due to their radioactive rather than to any chemical properties.

The electronic reactions of many of the common drugs now used by medical practitioners show them to yield radioactive energy entirely at variance with the conditions for which they are given and to be in many instances most dangerous and harmful rather than helpful. The electronic concept is therefore destined to revolutionize completely the use of drugs for therapeutic purposes and, when the profession is wise enough to utilize intelligently these basic therapeutic principles and the public learns to refuse empirical medication, every drug will be examined for its radio-active qualities and those which do not yield energies in consonance with the conditions for which they are given will be disowned and discarded. Here is the great hope of the laity for escape from the empirical practices of drug-giving doctors, and, furthermore, the element of public education along electronic lines—as applied to the radio-telephone and other most amazing developments of the recent past—must assuredly help greatly in the public appreciation of the personal and economic value of the Abrams concept. There appears to be no escape from this conclusion, and whether or not organized medicine ever gives to Abrams the well-earned credit for formulating its scientific fundamentals will be of secondary importance to the fact itself.

ELECTRONIC METHODS AND OSTEOPATHY

Osteopathic physicians should excel in this field of endeavor, because of their practical working knowledge of the reflex nervous mechanism and the most important element of anatomical adjustment which seeks to maintain such mechanism in its proper condition. Osteopathic specialists and surgeons are among the best in the world, with an ever-increasing following among conservative people. What does it mean to them to be able to sterilize an infection without surgical interference, or to destroy the virulency of malignant growths

without the dangers of surgical extirpation? And what does it mean to the rank and file of osteopathic physicians to be able to localize infections or malignancies in their patents, even to the very roots of the teeth themselves, as has been repeatedly confirmed by X-ray and dental extraction. Some of those terrible cases of arthritis, with sources of focal infection hidden from all other methods of diagnosis, can be quickly placed upon the road to health through electronic diagnosis and treatment coupled with osteopathic adjustment. It would appear to be entirely sane reasoning to believe that a recurrence of infection would be apt to take place in organs and tissues associated with an osteopathic lesion and that only the correction of this lesion and the restoration of normal blood and nervous elements would produce immunity.

The direct applicability of the Abrams electronic concept to the philosophy and practice of Osteopathy may be readily perceived by any physician approaching the question with an open and receptive mind, as is proven by scores of letters which I have received from leading osteopathic physicians throughout the country as well as by the enthusiastic comments of such physicians as have studied at my laboratory, or with Dr. Abrams himself.

THE ABRAMS BOOKS

A study of the several books written by Dr. Abrams will quickly reveal the scholar, the student, and the scientist, a man of wide intellectual attainments and fearless in the presentation of his scientific findings. In the preface to his remarkable book entitled "New Concepts in Diagnosis and Treatment" occur these courageous words:

"Neither the fury of tongue nor the truculence of pen can discredit the author's observations, which are capable of analysis and demonstration."

Although published but six years ago, this book

is today almost out of date because of the rapid progress being made in the development of this electronic concept. Nevertheless, a copy should be in the library of every physician and a friendly reading will open entirely new and greater worlds for human service.

The book which brings Abrams closest to the osteopathic concept, however, is his massive work on "Spondylotherapy", a book which was first published in 1910, is now in its sixth edition, and has already been translated into the French and Spanish languages. To the osteopathic physician, his applied philosophy of reflex action, based upon proofs supplied by percussion, by the X-ray, by surgical operations, and checked up by many other observers, will prove most useful, as may be gathered from the few random selections which now follow. The stomach normally requires about 1¼ hours to pass the conventional bismuth meal, but concussion of the 5th dorsal spine, in the manner outlined by Abrams, causes it to expel its contents in about 1½ minutes. The splanchnic vessels may be constricted by concussion of the 5th, 6th and 7th dorsal spines, and be again dilated by stimulation applied between the 3rd and 4th dorsal spines. Atonic constipation may be helped by concussion of the 1st, 2nd and 3rd lumbar spinous processes, while spastic constipation may be improved by concussion of the 11th dorsal. The sigmoid flexure may be dilated by concussion applied at the level of the 11th dorsal. The appendix may be emptied by concussion of the 10th dorsal and be again dilated by concussion of the 1st lumbar. All of these reactions may be observed by use of the fluoroscope and comment is needless as to their possible therapeutic value.

Abrams was unquestionably one of the first physicians to utilize the therapeutic value of spinal concussion, although many others have subsequently become enthusiastic over its results and have not always given credit where credit belongs. It has

also been a rather commonly accepted impression among osteopathic physicians that the Abrams concept regarding spinal reflexes was originally derived from Osteopathy, but my own observation in the premises, gained from personal interrogation of many osteopathic physicians throughout the country, is that such is not the case and that any similarity of methods may be explained upon the same basis of contemporary investigation as that manifested in the famous instance of Darwin and Wallace. I find that very few osteopathic physicians know much about the Abrams reflex concept, and that Dr. Abrams himself has until recently known but little of the osteopathic concept, hence the apparent lack of proper credit when harmonious opinions were propounded. A clearer mutual understanding of fundamental philosophies has established the fact that all are working industriously for the same great objective, namely, the banishment of disease and the opening of the doors of health and happiness to the human family.

AN EXPERT OPINION

In the New York Medical Journal of February 15th, a graceful acknowledgment of the value of the Abrams methods is made by Sir James Barr, M.D., LL.D., F.R.C.P., Ex-President of the British Medical Association. In discussing heart disease, he makes the following statement:

"For many years I have made regular use of 'the Abrams' cardiac reflexes in the treatment 'of heart disease and consider them invaluable. 'They are not intended to resuscitate the dead, 'but for revivifying the living they are inestimable. 'These reflexes are readily elicited by the following method: Take a medium size cork, place 'an end on the seventh cervical spine and on the 'other end of the cork give thirty short, sharp 'taps with a plexor or small hammer. Repeat this 'on the second dorsal spine. Wait a minute and

"then repeat this series on the seventh cervical and second dorsal. Again wait a minute and repeat the third series. This procedure, if properly carried out, will reduce the transverse diameter of a large dilated heart by at least two inches, and the heart will remain contracted for one or two hours. At the same time the aorta is materially contracted, and pulsation in the suprasternal notch disappears, hence this manoeuvre is of great value in the treatment of aneurysm; personally I have had many successes. Those who have difficulty in mapping out the deep cardiac area can easily feel a large thumping apex heart in the axillary line, and after percussion feel it in the nipple line. . . . The Abrams cardiac reflex of dilatation is elicited by percussion between the third and fourth dorsal spines, which stimulates the depressor nerve. This should be followed by percussion over the second dorsal, which I have termed a fixation complement, as it prolongs the reflex. This reflex is exceedingly useful in true angina where there is a spasm of the heart, a slow, firm pulse, and cardiac distress."

This same progressive and broad-gauge physician, in a personal letter, states: "Dr. Abrams is a genius who is rather ahead of his time and consequently he may not live to see the full fruition of his work." And in the "Medical Press and Circular" of London, dated January 12, 1921, he states: "In my opinion he (Dr. Abrams) has done more to advance the treatment of tuberculosis than all the physicians in America and Europe combined."

"SPLENIC STERILIZATION" AND THE "OSCILLOCLAST"

There is a very deep therapeutic philosophy behind the matter of "Splenic Sterilization" initiated by concussion of the seventh cervical and the second dorsal spines. It has been demonstrated both by

percussion and by the fluoroscope, as well as by animal experimentation, that concussion of the seventh cervical spine dilates the spleen about two finger breadths and that concussion of the second dorsal fixes this dilatation so that it will last for an hour or more. Let us assume the electronic examination of a syphilitic patient and begin by measuring the ohmage of the reaction for syphilis with an electrode placed over his spleen. Having determined this ohmage, let us concuss his seventh cervical and second dorsal spines and we will find that the ohmage over the spleen has greatly increased. This is explained by Dr. Abrams as the result of a change in the electrical attraction of the spleen, whereby its dilatation attracts syphilotoxins and other infections into the splenic pulp, where the process of digestion goes on until the poisons become neutralized. It has been proven that the simple application of this concussion to the seventh cervical and second dorsal spines will abolish the reaction for syphilis within a few weeks' time. I can only suggest to you the vast importance of a knowledge of this technique, when many of the leading thinkers in the medical world of today are coming to the conclusion that acquired or congenital syphilis is the necessary basis for the growth of carcinoma, sarcoma, tuberculosis and other serious chronic conditions. Abrams is by no means alone in this viewpoint, but he has the moral courage to state his opinions in plain English and cannot, therefore, be classed as other than a benefactor of humanity.

In therapeutics, Dr. Abrams makes constant use of the spinal reflex mechanism by means of carefully regulated and localized concussion applied to various levels of the spinal column. Practically speaking, every patient treated in his clinic receives concussion at the levels of the seventh cervical and the second dorsal spines. Immediately after this is done the patient is ready for treatment by the "Oscilloclast",

which is the wonderful apparatus devised by Dr. Abrams for destroying infections and malignancies through the application of exactly measured destructive vibrations. This machine is connected by wires to the electric light socket and, by means of triple rheostats, delivers the proper electronic destructive vibrations to suit the condition. An electrode is always applied over the spleen after its dilatation by concussion of the seventh cervical spine and its new load of infection is thereby quickly destroyed, reminding one of the western rabbit hunt in which all hands turn out to drive the rabbits into a corner where they are destroyed with shot-guns. Many patients are also painted over the site of infection with pigments or other substances having the same vibratory rate as the disease. It makes but little difference just what substance or method for giving destructive vibrations is used—the philosophy of treatment is always the same.

WHAT OTHER PHYSICIANS THINK

Other physicians besides Abrams are today giving close study to the electrical phenomena of the living human body, as shown by the special from Cincinnati to the New York Times under date of April 18, reading as follows:

"In a lecture tonight before the Cincinnati Academy of Medicine and associated members of the medical and surgical professions of Indiana, Ohio, and Kentucky, Dr. George W. Crile, of Cleveland, noted American surgeon, likened the human body to a dry cell, of which the liver is the negative pole and the brain the positive pole."

The terrible need for an accurate method like that of Abrams for diagnosing syphilis is made manifest by reading the Journal of the American Medical Association for April 1st, in which a courageous writer, after giving statistics showing that a positive Wassermann reaction can be obtained in non-syphilitic cases of pneumonia, typhus fever, malaria, and other in-

fections, as well as in a large proportion of women during the period of pregnancy, sums up his conclusions as follows:

(1) A negative Wassermann test in the presence of definite syphilitic lesions is a possibility in certain stages of the disease.

(2) A positive Wassermann test in the presence of non-syphilitic disease does not always mean syphilis.

(3) While a strong positive Wassermann reaction in a subject who is not suffering from any illness should cause us to investigate, nevertheless, too great stress is not to be put on it, unless this finding is confirmed by a number of reliable laboratories."

THE GREAT OPPORTUNITY FOR FAIR-MINDED THINKERS

A study of the Electronic Reactions of Abrams will convince the fair-minded investigator that here, at last, is the greatest weapon ever devised against that terrible curse of mankind during all ages, namely, congenital and acquired syphilis. Just think what this means when applied not only in its physical aspects in the relief of suffering and the prevention of degeneracy, but also in its economic aspects in the relief from the present excessive and growing taxation demanded for the support of public hospitals for the insane and degenerate, as well as public prisons for transgressors of the law. Think also what it means to humanity to develop methods which will render unnecessary the vast majority of present-day surgical operations, with their attendant dangers and post-operative miseries.

The day of electronic diagnosis and treatment is at hand and it cannot be dispelled by unbelief or criticism any more than the ocean can be swept away with a broom. Here is the great opportunity for osteopathic physicians to assist in the development and utilization of this epoch-making concept and

thereby place themselves before the great public as receptive and progressive physicians, willing to take off their hats to a FACT.

“There is a tide in the affairs of men,
Which, taken at the flood,
Leads on to fortune.
Neglected, all the affairs of their lives
Are bound in shallows and in miseries.”

What will be the osteopathic answer?

THE ELECTRONIC REACTIONS OF ABRAMS

BY ALBERT ABRAMS, A.M., M.D., LL.D.

San Francisco, Cal.

PRELIMINARY

DIAGNOSIS is the most exalted, and yet the most difficult, task of the physician—*Qui bene diagnoscit, bene curat*. A correct diagnosis in many important diseases falls below 50 per cent. in recognition and in some below 25 per cent. This is because medical practice is only 50 per cent. efficient. Until the physician can weigh, measure and express his knowledge in numbers, his art has scarcely attained the dignity of a science.

Physical science, by reason of the universality of its laws, dominates every phase of medical research, and knowledge, irrespective of its source, must be invoked to participate in the development of our art.

Descartes, a philosopher, discovered the reflex; Leonardo, an artist, discovered the function of the heart; Hales, a clergyman, discovered arterial pressure; Leeuwenhoek, a "bedell," discovered the capillary circulation; Wren, an architect, discovered intravenous injection; and Priestly, a clergyman, discovered the function of the green plant.

The human must not be segregated, as something apart from other entities of the physical universe. There is only one physics, one chemistry and one mechanics governing animate and inanimate phenomena, and the latter must be studied by physicochemical methods. Vital phenomena are dynamic and the actions of organisms should be regarded as processes and not as structures. All vital phenomena are subject to the same laws governing the cosmos.

Even though one admits a special vital or "biotic" energy, it must be disregarded except when converted into recognized forms of chemical or physical energy in equivalent amount. All problems in medicine not in accord with the progress made in physical science are doomed to perish.

Successive innovations have completely altered the physiognomy of medical practice.

The doctrine of cells and protoplasm gave a decided impetus to the formulation of modern biology and pathology, but it has suffered many vicissitudes, notably that, in the interpretation of vital phenomena, one must look deeper than simple cell-structure as revealed by the microscope. In this sense, the *Zeitgeist* demands an abrogation of this misalliance of medicine and cytology. The cells constitute a superstructure guided in their activity by physicochemical forces. The cell is only the micromorphologic unit of plant and animal organization.

The universality of the laws of physical science are in accordance with the accepted electronic theory, *viz.*, that the ultimate atomic divisibility of matter is represented by the electron and not the cell, hence the archaic cell-doctrine must be superseded by the electronic theory.

THE ELECTRONIC THEORY

The actual nucleation of the electron theory forty years ago in its explanation of matter is perhaps the greatest contribution ever made to scientific knowledge.

The units of our organism, the electrons, are charges of electricity. In their incessant activity they produce the phenomenon known as radiation.

The physicist limits the latter to a few elements simply because his apparatus lacks sensitivity. It can be demonstrated by aid of the reflexes that radiation is a universal property of matter.

REFLEXES OF ABRAMS

Every phenomenon in nature is dependent upon matter in motion or vibration, and energy is employed to designate the modes of motion in the universe. All matter responds to stimuli, and is known as irritability. In investigating the physiological physics of the various forms of energy, the visceral reflexes of the author which are physiologic constants are employed.

In accepting the visceral reflexes as the basis for our diagnostic reactions, bioplasmic matter is employed, the most primitive and sensitive substance for exhibiting the phenomena of energy. The

physiologic mechanism designated as a reflex surpasses in its sensitivity any apparatus yet devised by human ingenuity.

The lungs antedated the bellows; the heart, the pump; the hand, the lever; and the eye, the photographic camera. Telephonic and telegraphic apparatus duplicate, mimetically, what has always been done by the nervous system, and, always by aid of the same energy.

The animal machine is equipped, by its sense organs, as receivers for practically all kinds of energy.

Olfaction surpasses in sensitiveness the most impressible scientific instruments and the retina is approximately 3000 times as sensitive as the most rapid photographic plate.

In the author's recent work, "New Concepts in Diagnosis and Treatment," the stomach reflex is almost exclusively employed for the detection of energy, but owing to the difficulty encountered by others in its elicitation, it is here substituted by other reflexes. Consideration will, at this time, be only accorded to the diagnosis of carcinoma, syphilis and tuberculosis. The diagnoses of other affections are and have been reported in the writer's quarterly journal, *Physico-Clinical Medicine*.

SPLANCHNODIAGNOSIS¹

The successful employment of this method predicates a knowledge of percussion, which not only means the delivery of blows but the interpretation of sounds—differences of pitch and resonance. The method is no more flamboyant than the elicitation of dulness over a consolidated lung area, and, if the former is unrecognized, I doubt the physician's ability to interpret the latter.

Splanchnovascular Reactions.—Strong stimulation of the depressor nerve dilates all the abdominal vessels. An individual nerve has different functions. When we perceive a variety of colors, it is due to definite vibratory rates conducted by specific fibres which are natural detectors of energy. When the physiologist stimulates a nerve or muscle, the total energy (irrespective of wave lengths) is employed. When the *depressor nerve* is stimulated by the radiant energy of disease, the abdominal vessels respond by vasodilation in

¹ There are other splanchnic and pulmodiagnostic reactions which cannot be cited owing to the limited space at the writer's disposal.

specific abdominal areas as revealed by dulness on percussion. This nerve may be stimulated between the *third* and *fourth dorsal spines*. The latter area was first determined empirically and later by animal experimentation.

The following angiodiagnostic reaction is easily executed ²:

Take a culture of tubercle bacilli and direct the opening of the tube (without removal of the cotton) to the region between the third and fourth dorsal spines (depressor nerve) and note that within 10

Fig. 1.



Site of vasomotor phenomena incident to the employment of cultures of the tubercle bacillus and pneumococcus.

seconds flushing ensues in the region of the infraorbital foramen, just below the infraorbital ridge (Fig. 1). The area in question represents a streak.

Apply the tube to the first dorsal spine and in about 10 to 20 seconds a streak of pallor ensues. The latter is less conspicuous than the former. The face of the subject should be directed toward the light and the observation is to be made during the time an assistant directs the tube to the definite spinal areas. It is a bilateral phenomenon if the tube is directed on the spinous processes, but is unilateral if applied to either side of the specified spinous process. Pallor and flushing are more diffused in individuals with the phthisical habitus if used for the test. It is also evocable when energy is

² With other forms of pathological energy, reactions invariably occur in definite areas of the ear and face and substantiate the rationale and definite localization of the areas in splanchnovascular diagnosis.

conducted from a tuberculous lung. Like phenomena are noted with a culture of the pneumococcus.

Dr. George O. Jarvis confirmed the visceral reflexes of Abrams at the operating table. He also executed several investigations during laparotomies bearing on the conveyance of energy from tuberculous and carcinomatous material to the region between the third and fourth dorsal spines. Within several seconds each time after the electrode was brought in apposition with the latter area, there was a decided vasodilatation in specific intra-abdominal areas. This observation was confirmed by Drs. Parsons and A. W. Boslough.

In experimental work on animals, the writer found that the slightest augmentation of vascularity of the stomach or intestines caused a transition of the percussion note from tympanicity to dulness.

Method.—A healthy person (subject) other than the patient is used for making the electronic diagnosis. Exceptionally, the patient may be used. The reactions are alike in both sexes. Select a subject with thin abdominal walls in whom a tympanitic sound is demonstrable over the entire abdomen. When a suitable subject is found (usually a boy), he may be used daily for diagnosis. The subject must face the west (standing). The splanchnic reflexes cannot be elicited in the recumbent posture. The subject stands on a plate of aluminum which is connected by an insulated wire to a faucet, radiator or gas fixture. The modern combination fixture is unsuitable for grounding owing to its insulation near the ceiling.

Percuss and mark the entire lower liver border of the subject (anteriorly). Select an ordinary flexible conducting cord of copper to both ends of which electrodes are attached. Aluminum electrodes are most effective. An assistant or the patient places one electrode (receiving electrode, R. E.) over the source of radiation (energy) and the other is placed by an assistant exactly between the *third and fourth dorsal spines* of the subject. Within thirty seconds, a specific area of *abdominal dulness* will be elicited and the latter persists during the energy flow. The dulness disappears during deep inspiration, but reappears with ordinary breathing by the subject. For esthetic reasons, a screen may be placed between the subject and the patient. Until the necessary skill is acquired, a diagnosis should not be made. Preliminary practice may be attempted with cultures, blood and

tumors. Thus, a culture of tubercle bacilli yields the same reaction as tuberculosis and the blood from a syphilitic yields a reaction similar to syphilis.

Cultures or a carcinomatous growth may be directed to the vertebral area cited without the use of conducting cords.

LOCATION AND MENSURATION OF DULL AREAS* (FIG. 3)

	Location	Vertical Diam.	Transverse Diam.
Carcinoma	Left hypochondriac region just below and merging into lower liver border.	4 cm.	9 cm.
Syphilis	Just above the navel extending to either side of the median abdominal line.	6 cm.	5 cm.
Tuberculosis	Just below the navel	3 cm.	5 cm.

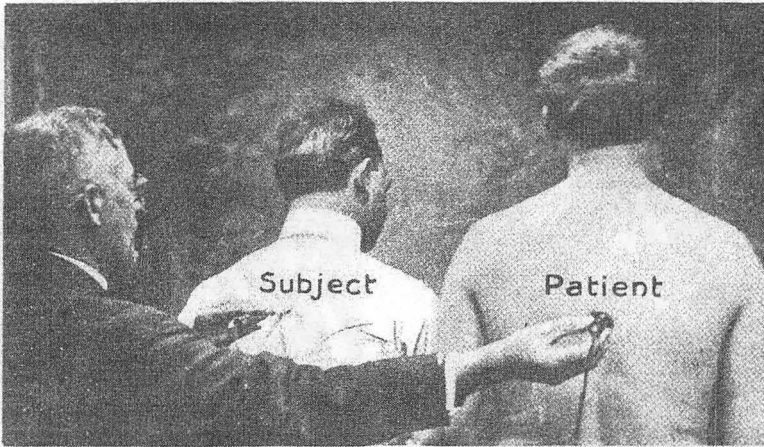
Precautions.—Do not permit the *fingers* to come in contact with the metal of the electrodes and direct them away from the latter as in holding the magnet (Fig. 7). Colors on the subject, patient or in the room should be excluded. Differences in percussion sounds (change from tympanicity to dullness) may surely be acquired by practice. Exclude the personal equation in percussion by having contact made with the R. E. without your knowledge and note if you can tell by the appearing dullness when this is done. Short conducting cords of large diameter conduct more energy and accentuate the areas of ventral dullness; the resistance of the cord depends directly upon its length and inversely upon its section. When the energy is measured by the rheostat (Fig. 8), uniform measurements can only be secured by cords of the same length and section.

Pressure on the dorso-lumbar spine during percussion accentuates ventral dullness. The electrode approximating the area between the third and fourth dorsal spines should not exceed $1\frac{1}{2}$ inches in diameter. In defining the lower liver border and the splanchnic reactions, use a barely audible *uniform* percussion blow. With a strong blow, the liver border will be found lower than with a light blow. *It is a recognized law of sense perception that the less loud the initial sound, the simpler it is to recognize its variations.* The sense of greatly increased resistance is associated with impaired resonance.

The subject must directly face the west; many reactions cannot be elicited when this rule is violated.

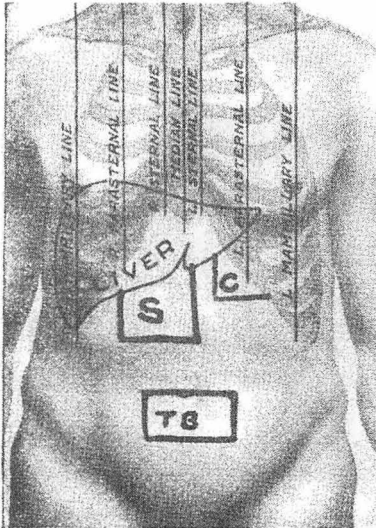
* These measurements were determined in a man used as a subject. If a boy is used, the areas would be less.

FIG. 2.



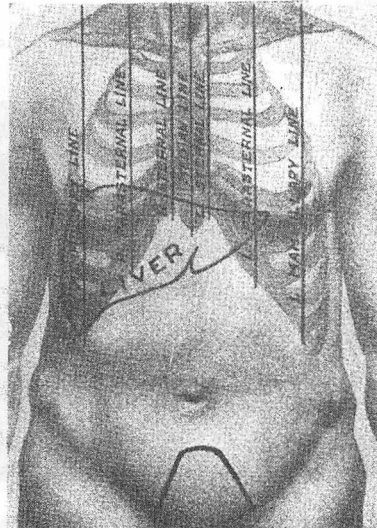
Method of conveying energy from the spine (area corresponding to seventh thoracic spine usually selected) in a patient with suspected syphilis to the vertebral region of the subject. An assistant holds both electrodes. In the absence of an assistant, the metallic tips of the conducting cords (electrodes removed) may be attached by adhesive plaster and the conducting cord may be connected with a push button for making or breaking the circuit, which may be controlled by the hand or foot of the physician. Note that, owing to the high frequency and voltage of the energy, unipolar conduction suffices. To secure uniform results, patient and subject during the execution of the tests should face the west.

FIG. 3.



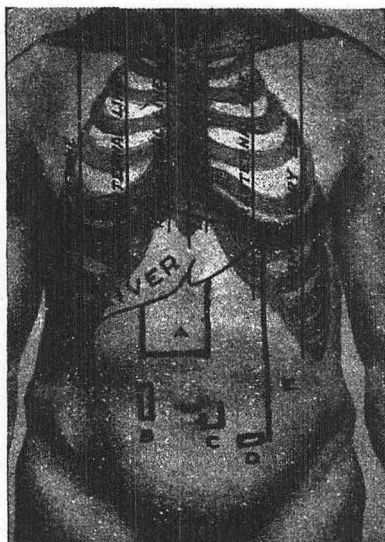
Elicitation of neutral areas of dulness when specific pathological energy is conveyed to the area between the third and fourth dorsal spines. C, cancer area; S, syphilitic area, T B, tuberculous area.

FIG. 4.



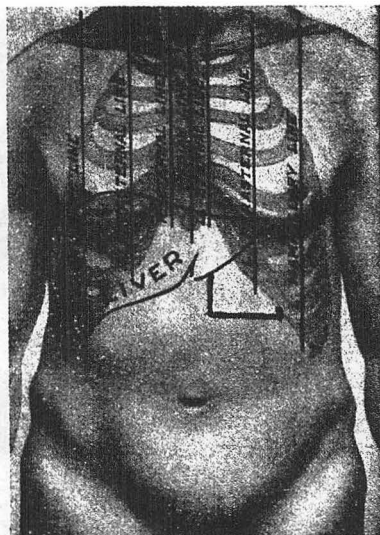
Site of additional area of ventral dulness in congenital syphilis when energy is conveyed from the patient to the subject.

FIG. 5.



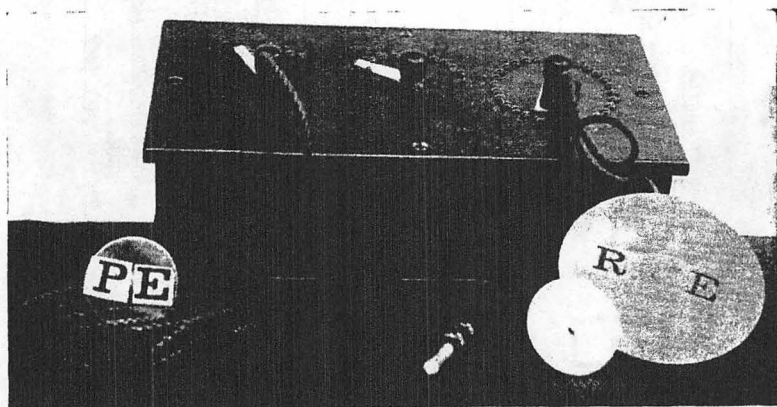
Ventral areas of dullness in syphilis when the spinal energy in this disease is conveyed to the area between the third and fourth dorsal spines. A, area in all cases of syphilis irrespective of the special structure invaded. In addition to the latter, the area B is present in cardiovascular lesions; C, lesions of spinal cord and nerve roots; D, eye lesions; E, pulmonary lesions.

FIG. 6.



Site of area in dementia paralytica from energy conducted from the spine of the patient to the subject. This site was determined from a study of three luetics who, after a lapse of approximately two, three and four years, developed paresis. This site is also present in developed cases.

FIG. 8.

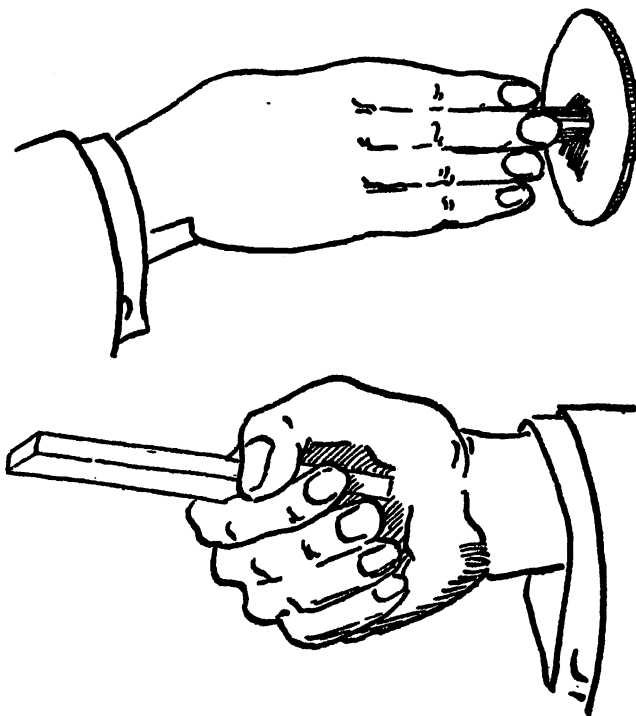


Ohmmeter (biodynamometer) for determining in ohms the potentiality of energy. The resistances are as follows: $\frac{1}{10}$, of an ohm to 1 ohm, 1 to 10 ohms and 10 to 50 ohms. PE is the proximal electrode (vertebral application) and PE represents the electrode for receiving the energy at its source. Three receiving electrodes are shown of different sizes. This set of electrodes is shown as Abrams electrodes for the electronic test. As remarked in the test, any electrodes suffice.

All pathological specimens must be removed from the vicinity of the cords and electrodes to eliminate their possible conduction.

A subject with reddish hair must not be selected. If colors approximating this shade are placed across the cranium of the subject, many reactions cannot be elicited.

FIG. 7.



The lower figure represents the correct way of holding the magnet or electrodes. The upper figure is incorrect owing to modification of polarity from the finger tips and approximation of the latter to the metal which causes short-circuiting and interferes with conveyance of energy. The magnet should be held at the extreme tip. When held in the centre, it fails to yield either positive or negative energy sufficient to determine the polarity of the ventral area of dulness.

Normal energy does not traverse a non-conductor, but pathological energy does. Certain areas of the body discharge energy in the norm and the polarity of the latter may prevent the elicitation of the splanchnic reflex. When such regions are encountered, it is always advisable to cover the electrode in contact with the spine (between the third and fourth dorsal spines) with thin rubber dam when executing the tests.

Always note the percussion note over the abdomen before execut-

ing a test, for owing to the sudden accumulation of gases the transition of resonance to dulness may cause a misinterpretation of the reaction.

Do not exhaust the subject; the accumulation of blood in the abdomen, an attendant of enervation, will cause ventral areas of dulness.

To accentuate the areas of ventral dulness, connect fifth dorsal spine by a conducting cord to the ground plate on which the subject stands during the time energy is conveyed to the depressor nerve. The fifth dorsal spine corresponds to the splanchnic nerve, and, when its tone is removed by grounding, its opposition to the dilatation of the splanchnic vessels is partially removed.

Syphilis.—In this disease though quiescent and in any stage and irrespective of treatment, the reaction is always elicited from any part of the spine, liver or spleen. It is also obtainable over an active luetic lesion elsewhere.

Congenital Syphilis.—Differentiation of congenital from acquired syphilis is possible by the following test: Place the R. E. over either closed eye of the patient and the other electrode between the third and fourth dorsal spines of the subject. In *congenital* syphilis the abdominal area peculiar to syphilis (Fig. 3) appears but measures in its transverse diameter about 10 cm., in lieu of 5 cm. (man used as subject). This reaction is not present in acquired syphilis in the absence of ocular luetic lesions.

In congenital syphilis only it will also be noted that when the energy is conveyed from the spine, liver or spleen of the patient, there is, in addition to the epigastric area of dulness, an area measuring 10 cm. vertically and 12 cm. horizontally, beginning midway between the navel and the *symphysis pubis* and extending to the latter⁴ (Fig. 4).

It is now known that there are distinct strains of the *spirochætæ*; with one strain, eye lesions in rabbits may be produced, whereas another strain never produces these lesions. Investigators have shown that syphilis may affect the heart alone (*spirochætæ* present) without histological lesions or *spirochætæ* elsewhere. In a considerable percentage of new-born infants, *spirochætæ* at the autopsy have been found in the aorta.

⁴ The patient's bladder must be empty to eliminate the impaired resonance of the distended viscus.

Bacterial localization emphasizes the fact that there must be a great variety of species or subspecies among the spirochætæ and that the elective localization of lesions is dominated by this fact.

In addition to the general reaction (Fig. 3), there are specific areas of dulness which seem to indicate the tissue for which the spirochætæ show a predilection. If these additional areas are present, either the structure is already invaded or its invasion may be predicted in the event the luetic process is uninfluenced by treatment. My studies bearing on this subject are as yet limited and the areas thus far elicited are shown in Figs. 5 and 6.

ELECTRONIC REACTIONS WITH BLOOD

A few drops of blood taken from a patient and allowed to dry on a slide will, when presented directly to the area between the third and fourth dorsal spines of the subject, yield the characteristic splanchnic areas of dulness. This holds for active tuberculosis, syphilis (active or quiescent), and carcinoma. In the affections cited, the dried blood yields a reaction for several days, whereas in syphilis a reaction is obtainable for several weeks. The latter fact is important when an acquaintance with the luetic reaction is studied. After this manner, diagnoses may be made from blood sent from long distances. The blood reaction is a general one. Thus, if the blood yields a tuberculous reaction, it suggests tuberculosis somewhere in the organism; the localization of which is possible by the method cited elsewhere.

In presenting the specimen side of the slide to the spine, grasp it with a long pair of forceps (wood) or have the assistant hold it at its extreme edge during the time percussion is executed.

Polarity.—Radiant energy in disease has a distinctive polarity (corroborative evidence) and is detected by presenting a bar magnet about four inches away from the area of ventral dulness. The magnet must be held at the extreme end as shown in Fig. 7. If the dulness persists with the positive pole (marked N) thus presented and disappears with the negative pole (marked S), the polarity of the energy is positive, and *vice versa*. If it persists with both poles, it is positive and negative, and, if it is dissipated by both poles, it is neutral (isopolar).

The polarity of the energy in carcinoma is positive, and neutral in syphilis and tuberculosis.

POTENTIALITY OF REACTION

We are constrained to employ electrical terms and electrical methods of mensuration until our knowledge of pathological energy is better understood. To paraphrase the law of Ohm, the strength of pathological energy varies directly as the energy and inversely as the resistance.

A crude method for measuring the energy intensity in disease is to note at what distance the R. E. is from the source of energy before dulness appears.

An Ohmmeter is more exact. The rheostat (Fig. 8) for this purpose is wound to carry 100 milliamperes with a voltage of 20. The scale is in $\frac{1}{25}$ of an Ohm to 1 Ohm and then up to 50 Ohms. To use the rheostat, place the R. E. (say over a cancer) and the other electrode between the third and fourth dorsal spines. At zero of the scale the specific dull area is present. Now interpose more resistance until the dulness disappears. If the dulness does not disappear until the index registers 10 Ohms, then the energy from the growth has a potentiality of 10 Ohms. After this manner, the progress of a growth and the results of treatment may be gauged.

In carcinoma, the potentiality varies from 1 (incipient cancer) to 30 Ohms.

The reaction in syphilis is always present and in this sense it exceeds the serological tests in value. In quiescent syphilis the potentiality rarely exceeds $\frac{2}{25}$ of an Ohm; in active syphilis it may exceed 10 Ohms.

The splanchnic reaction is elicited even over a healed tuberculous lesion, but the energy from it never exceeds a potentiality of $\frac{3}{25}$ of an Ohm. Active lesions may show a potentiality of 20 Ohms. Without an Ohmmeter at our disposal, in healed tuberculosis, the reaction is present only when the R. E. is in contact with the skin. If a reaction is elicited at a distance exceeding one inch from the skin surface, the lesion is active. Thus, in one patient when the R. T. was held at a distance of seven inches from the tuberculous lesion, the Ohmic resistance was 6 Ohms.

Vibratory Rate.—Using the rheostat after the manner indicated, it will be found that the dull abdominal areas will only appear at definite points on the scale. At zero always and up to the potentiality of the energy. Otherwise, the dull areas will appear at the following indices of the scale:

Carcinoma	50 Ohms
Syphilis	20 Ohms
Tuberculosis	15 Ohms

In conclusion, the writer wishes to asseverate that, if splanchno-diagnosis is approached with a prejudiced mind, it is better not to attempt it, for there are "none so blind as those that will not see."

It is chiefly indifference that has relegated to oblivion many important truths.

All the precautions cited must be sedulously regarded in the execution of the method. The writer will be pleased through correspondence or otherwise to aid clinicians in investigating the methods in question and to forward them the splanchnodiagnostic reactions thus far elicited in other diseases.

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