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NEW CONCEPTS IN DIAGNOSIS AND TREATMENT

PHYSICO-CLINICAL MEDICINE

THE PRACTICAL APPLICATION OF THE
ELECTRONIC THEORY IN THE INTERPRETATION
AND TREATMENT OF DISEASE

WITH AN APPENDIX ON NEW
SCIENTIFIC FACTS

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**NEW CONCEPTS IN
DIAGNOSIS AND TREATMENT**

TO MY WIFE .
BLANCHE B. ABRAMS

ARCHETYPE OF PHYSICO-CLINICAL MEDICINE.

"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 meager and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the stage of science."—(Kelvin.)

"Ich behaupte aber dass in jeder besonderen Naturlehre nur so viel eigentliche Wissenschaft angetroffen werden könne, als darin Mathematik anzutreffen ist."—(Kant.)

"Progress is symbolized in the clock, the balance and the foot-rule."—(Clerk-Maxwell.)

Paraphras's of the foregoing implies that if we can time, weigh and measure, facts in lieu of theories could be submitted.

"Science, whose aim is to understand nature, must set out with the assurance that nature is understandable."—(von Helmholtz.)

"Is there any phenomenon which works upon neither our natural senses, nor upon their extensions, our present-day instruments and apparatus? Then, unless it be out of relation with things, must it still be bound up with other phenomena which do work upon our senses or our instruments. Thus it must sooner or later become perceptible to us."—(Wiener, *Die Erweiterung unserer Sinne.*)

PREFACE

The author's new physico-diagnostic and therapeutic methods are not theories but physico-clinical facts and therefore endow this book with decisive meaning. The laws of physical science are universal and apply equally to living organisms and so-called inanimate things. This iatro-physical conception demonstrates the trend of unifying the various forms of force under one great principle. Practical medicine embodies all the sciences and a clinical diagnosis must invoke physical, biological and chemical methods. The electronic theory demonstrates the electrical nature of matter and radioactivity is a universal property of the latter. In disease, the rearrangement of the electrons is associated with the evolution of energy endowed with a definite polarity, wavemeter index and vibratory rate. Insomuch as electrons are in motion, there is a continual radiation of energy and the instability of the atom, as expressed by the polarity of my reactions, shows the constant loss of positive or negative, positive and negative or neutral electrons.

In investigating the physiological physics of the various forms of energy, the visceral reflexes of the author are employed. The latter are interpreted phonometrically and in a variety of other ways. Special reference is directed to the reflexophone and energieaometer, which substitute a visceral reflex, and to splanchno-diagnosis, which reveals specific forms of energy. Relative to the use of metal in reflexometry, it confirms what Claude Bernard called *irritabilité*—the power possessed by all matter of reacting to stimuli. The reflexes of Abrams, are physiological constants and have been repeatedly corroborated as shown in the subject-matter succeeding the bibliography. The author regrets the necessity of obtruding his personality at that place but feels that, any merit attached to his reflexes, may be obscured by the extraordinary data presented throughout the book. The author fully realizes that, the acceptance of a discovery, must be in logical concordance with current scientific conceptions and bears no relation to the intrinsic content of the discovery.

Purport

Visceral
Reflexes of
Abrams.

In accepting the visceral reactions as the basis for our varied deductions, 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.

Human
Machine

Man is essentially a reflex animal. Consciousness depends upon the action of the reflexes. Mental function as work might proceed without consciousness, just as the machinery of a clock might work without a dial. Men looking upon a machine executing a task of marvelous complexity are habituated to observe, "It is almost human." Laboring art is a crude imitator of nature. 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 physical energy. Our senses, however, report only a comparatively small number of gross stimuli and are readily replaced by modern apparatus of greater sensitiveness, precision and certainty. Aside from the overt phenomena as revealed by our senses, there are a multitude of recondite reflexes which can be utilized with mathematical accuracy for interpreting cosmical energy. The reflexes in question are natural detectors, always attuned to definite rates of vibration and inasmuch as every phenomenon in nature is dependent upon matter in motion or vibration, it is not chimerical to assume that, in the reflexes, puissant physiological reactions are at our command to interpret many heretofore inexplicable phenomena. In radiotelegraphy, electro-magnetic waves are set in motion by an exciter. The sensitivity of the reflexes makes the latter unnecessary; the revolutions of the electrons alone substitute the exciter or oscillator.

New
Knowledge

The most mystifying phenomena rest upon the least complex causes; and the simpler a thing is, the harder it is to understand, therefore, "*Damnant quod non intelligunt.*" New knowledge is always viewed critically by the formalist and traditionalist, and so it should be, particularly when the innovationist creates discontinuity in the transition to new knowledge. "It is not so much evidence that convinces men of something entirely foreign to their habit of thought, as the discovery of a link between the new and the old."

Scientific theories are constantly shattered and swept into the discard and the scientist presiding at the birth of his theory one day may officiate at its burial on the morrow. In his iconoclasm, he is making real the dream of ages. Scientific Anarchy

In discussing the progress made in pathology, a scientist recently affirmed that, "The most interesting fact in it right now, is that nothing is happening." The aim of medicine is scientific exactitude but this Utopia is far from realization.

"One must be strongly convinced," suggested Charles Richet, "that science to-day though true, is dreadfully deficient."

Successive innovations have completely altered the physiognomy of medical practice notably, when bacteriology invaded the classic domain of cellular pathology.

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. Cytology

The cells constitute a superstructure guided in their activity by physico-chemical forces. Vital phenomena are dynamic and the actions of organisms should be regarded not as structures but as processes.

The cell is only the micro-morphologic 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. The cellular theory is destined to suffer the same fate as the molecular theory. The indivisibility of the atom as conceived by the atomists is now substituted by the conception that, it is a planetary system on an infinitesimal scale. Electron Theory

A study of the physics of the electron has dethroned many cherished hypotheses and shows that it plays an important part in determining the physico-chemical properties of a substance.

The discerning reader will note that, the author's deductions are essentially objective and that, due care has been taken to eliminate the personal equation. His results have been controlled by necropsy, skiagraphy, at operations and by histological examinations. All Objectivism

knowledge unless capable of numerical expression can never advance to the stage of science and justifies the Kantian observation, *viz.*, that the development of a science may be gauged by the amount of mathematics it contains. The author's methods show how biotic energy may be measured as the electrometer measures electrical potential.

Neither the fury of tongue nor the truculence of pen can discredit the author's observations which are capable of analyzation and demonstration. Neither fear of difficulty nor adverse criticism deters him from regarding scepticism as an argument against the truth of his observations.

Vaticination

The author realizes that, without hereditary prestige, he is treading on unknown territory and that many will sit in the scorner's seat and hurl the cynic's ban. They are unfamiliar with the Pasteurian spirit—I do not know I will investigate.

Contempt prior to examination has relegated to oblivion many important truths. Man is governed by mathematical law and anything concerning him incapable of numerical expression must be limited to the realms of speculation. The apparently impossible which the author has striven to achieve, is based on scientific objectivity. To launch new knowledge is fraught with much risk to the offender who must be prepared to await the fate accorded to practically all innovations, *viz.*, condemnation, discussion and acceptance.

It takes a long time to align our general thinking into harmony with the results of new knowledge. "Messieurs" said the aged Pasteur at his Jubilee, "my first thought in the midst of this brilliant scene carries me back with melancholy to the memory of many men of science who have known nothing but trials. In the past they had to contend against prejudices which stifled their ideas. These prejudices vanquished, they had still to encounter obstacles and difficulties of all kinds."

There are more false facts than theories. The genius of the multitude is often the primary acclamation of a new discovery which is later accepted by those fettered by scholastic prepossessions. Down the centuries posthumous apotheosis is often the heritage of contemporary persecution. "*De mortuis nil nisi bonum,*" but anathematize the living. This specious philosophy often deters progress in a world where the credulous believe too much and the sceptics too little. A

serious obstacle at the present time in the presentation of new knowledge, is the arraignment of individual independence heretofore enjoyed by the pioneer investigator despite the main postulate of Herbert Spencer, in "First Principles," that the greatest factor in the promotion of what we call progress, is individual initiative. In this hegemony, the plenipotentiary right is assumed of discrediting new knowledge without investigation for no other reason than that, it is in discordance with preexisting knowledge and has therefore no official right of existence. When thought is thus monopolized, possession will be regarded as greater than achievement and the fascinating triumph of creation will be suppressed.

In the appendix, the author advocates a rejuvenation of psychological investigations and his apparatus leaves nothing to the imagination. The so-called *cognoscenti*, may approve of the present methods of investigation but others do not and the latter observe that, the only difference between psychology and astrology is that, the astrologer tells you what is not so beforehand and the psychologist does it afterwards. Appendix

Those "in authority," who regard innovation from the viewpoint of heresy recalls the *bon mot* by a witty compatriot of Talleyrand, who, in commenting on the conservatism of the latter said, if Talleyrand were present at the creation, he would have exclaimed; "Good gracious! Chaos will be destroyed." This book will be of no value to those who subscribe to Molière's satire; "The authorities exact an oath from medical candidates never to alter the practice of physic." "They who do not feel the darkness will never look for the light."

The major portion of this book has been devoted to diagnosis—*Qui bene dignoscit, bene curat.* Diagnosis and Treatment
Treatment is emphasized in investigating the action of drugs from what the author has neologized as an electronotherapeutic viewpoint. The cell, is a problem of physical chemistry, and the author's methods invoke the data of ionization in studying the therapeutic action of medicaments. The protoplasmic action of a drug is the algebraic sum of the effects of the individual ions and the anions and cations are in antagonism. The neologism *polaritherapy*, adequately expresses his therapeutic procedure.

If the author has shaped the dawn of a new epoch in science, he hopes that others, more competent than himself may prophesy its noon. It is impossible to express adequate appreciation for the

generous support accorded to me by my colleagues in corroborating these new methods of diagnosis and treatment. My most comprehensive obligation is acknowledged upon the dedicatory page. For the benefit of physicians, who cannot master some of the details of the new knowledge presented in this book, a practical mensural course is given by the author in San Francisco.

ALBERT ABRAMS.

FAIRMONT HOTEL, SAN FRANCISCO, CAL.,
JANUARY, 1916.

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NEW CONCEPTS IN DIAGNOSIS AND TREATMENT.

CHAPTER I.

HUMAN ENERGY.*

THE MODERN KNOWLEDGE.—At one time in historical medicine (period of medical mysticism), physics and chemistry were invoked to explain the bodily functions and to reconcile their dogmas with empirical methods in the treatment of disease.

These iatrophysical doctrines endowed with exclusivism failed to survive the lapse of time.

Recent researches made by the writer bearing on human energy, emphasize the importance of the laws of physical science in the investigation of disease and the physician is constrained to correlate his data with this new knowledge.

The forces resident in the living organism correspond with those governing the inanimate world and the theory of *vitalism* has been abandoned.

Physical science by reason of the universality of its laws dominates practically every phase of medical research.

Circulation of the blood is a matter of hydraulics; gaseous changes in the lungs and tissues correspond to the physical theory of gases and heat regulation conforms to the physical theory of heat.

**Italicized words* signify that detailed reference to the subject may be found in the author's book, SPONDYLOThERAPY: Methods based on a study of CLINICAL PHYSIOLOGY. Fifth Edition, 1914. PHILOPOLIS PRESS, SAN FRANCISCO.

All progress made in medicine is dependent on the cumulative evidence of science as a whole.

The CELL THEORY AND CELLULAR PATHOLOGY embodied the conception that the activities of an organism are the sum of the activities of its component cells which were regarded as the most elementary form of organized substances incapable of further reduction other than by mechanic or chemic means.

In accordance with the ELECTRONIC THEORY, cellular pathology does not emphasize the ultimate atomic divisibility of matter and this theory is exploited by the writer to suggest the inauguration of a new diagnosis and pathology which are respectively neologized as ELECTRON DIAGNOSIS AND PATHOLOGY OR BIODYNAMGNOSIS AND BIODYNAMOPATHOLOGY.*

Cellular pathology which owed its genesis to the macro and microscopical investigation of morbid tissues dominated medical progress for many years.

Therapeutic nihilism owed its conception to the pathologist who sought to identify every disease with definite anatomic changes, and the clinician studied disease only in relation to these conditions. As a matter of fact, the anatomical changes are sequential and not the disease itself. A perturbed physiology creates its own pathological anatomy.

When modern chemistry invaded the field, a tremendous impetus was given to therapeutics and pathology as evidenced in chemotherapy, the study of proteins and protective mechanisms of defense and Abderhalden's diagnostic methods.

Disease is regarded as an entity only because we do not know enough about it to specify it as a reaction or symptom.

*BIODYNAMICS (G. *bios*, life and *dynamis*, force). Also known as BIOPHYSIOLOGY, the science dealing with the energy of living matter.

The cellular theory is now as remote from the interpretation of ultimate structure as the atomistic is from the electronic conception of matter.

Sir Oliver Lodge suggests the following comparison to indicate the amount of space in an atom. Let an ordinary church represent an atom of hydrogen. The electrons constituting it will be represented by about 1000 grains of sand, each of the size of a printer's period dashing in all directions or rotating with inconceivable velocity and filling the whole interior of the church with their tumultuous action.

The time is fast approaching when the activities of living cells will find explanation on a physico-chemical basis and when the biologist shall know the laws that govern cell-growth with the accuracy of the scientist knowing his laws. It will be then that prevention and cure will be questions of scientific accuracy. As physicians we dare not stand aloof from the progress made in science and segregate the human as something apart from the other entities of the physical universe. Our differentiation of matter is largely morphologic. Whether the object of our differentiation is a human or a germ, we are only dealing with a congregation of vibrating atoms which in their varied combinations are the basic constituents of all that exists.

"Here, for example, is a swarm of atoms, vibrating, scintillating, martial,— they call it a soldier,—and, anon, some thousands of miles away upon the South African veldt, that swarm dissolves,—dissolves forsooth, because of another little swarm,—they call it lead⁹."

ELECTRON THEORY.—The three physical entities are: **MATTER, ENERGY and ETHER.** The *electron* or corpuscular theory has solved the ultimate structure of matter and

reduces all electric and magnetic phenomena to the distribution and motion of electrons.

This theory, which most fully accords with modern investigations concerning the physical basis of the material universe conceives matter to be made up of molecules; molecules to be composed of atoms and atoms to consist of electrons. The electrons or corpuscles are charges of electricity. The atoms of matter are individualized masses of positive electricity diffused uniformly over the area of an atom, spherical in shape and one two-hundredth millionth of an inch in diameter.

Throughout the spherical mass are some eight hundred minute particles of negative electricity all alike flying vigorously about, each repelling every other particle yet all contained within their orbits by the mass of positive electricity which constitutes only about one *per cent.* of the atom's mass.

The number of electrons in an atom are proportional to the atomic weight of the element. When the crowding of the electrons becomes excessive as in radium, thorium or uranium, the atoms become radioactive owing to collisions between the electrons, some of which are constantly shot away. Radiation refers to a change in the velocity of an electron which causes ripples in the surrounding ether. Whenever the velocity of an electric charge is increased, diminished or changed in direction, Roentgen rays, light and all other radiations result.

The investigations of the writer show that practically all atoms of matter are radioactive, assuming that the streams of radiations also consist of ethereal vibrations as well as flying particles.

The following data may be summarized concerning electrons:

1. The electron is the smallest entity known to science and is a thousand times smaller in mass than the smallest atom.

2. It is a sphere of positive electrification enclosing a number of negatively electrified corpuscles which counter-balance the positive electricity of the enclosing sphere.

3. The electrons are characterized by the uniformity of their vibrations. This is demonstrated by the sharpness of the lines of light making up the spectrum of an element. These lines originate from the vibrations of electrically charged systems and if the vibrations of different atoms were not attuned to each other, the spectral lines would be blurred and diffused.

4. Light and other radiations are dependent on disturbances in the surrounding *ether* caused by a change in the motion of the corpuscles.

We refer to perpetual motion as impossible, yet the whole universe is nought else. Matter is only an effect of a definite kind of motion.

During the revolutions of the electrons, thousands of billions of times per second, an electro-magnetic field of energy is created but the rhythmic changes in the field of energy thus transmitted by the ether have thus far eluded all instruments for their detection and study.

The phenomena of moving electrons are known as radiation and the rhythmic ethereal vibrations occurring within certain limits of frequency constitute light.

Everything in nature is in a state of perpetual motion and the latter is continually changing from one velocity to another.

The power to change the state of motion of a body is ENERGY. The total energy contained in matter depends on the extent to which it can be changed. Energy is the universal commodity on which all life depends.

All forms of energy whether derived from heat, elec-

tricity, magnetism or gravitation are interconvertible and represent practically different varieties of motion. Energy, like matter, can neither be created nor destroyed.

The energy in all matter is enormous and it has been estimated that one gram of hydrogen possesses sufficient energy to raise one million tons through a height exceeding three hundred feet.

A gram of radium yields enough heat every hour to melt one and three-fifths times its own weight of ice.

A vital question propounded by physicists is, whether it is possible to gain control of this tremendous store of subatomic energy?

Later in discussing treatment, this anticipation is not beyond realization.

Electrons are only electricity and nought else is in existence but electrons.

In gases, electricity is conducted by free corpuscles flying bullet-like and with velocities often approximating 100,000 miles per second. In liquids, the conduction is only about an inch an hour.

In metallic conduction, the atoms are relatively fixed and their only power is that of vibration. Certain corpuscular aggregations will hold in an unstable condition a few more corpuscles than exactly suffices to balance the surrounding sphere of positive electricity. The atom thus constituted is negatively charged. Others hold a few less corpuscles than suffices to balance the positive electricity. This leaves the atom positively electrified.

If these two types of atoms are free to move and they unite and neutralize each electrically, we have chemical union.

After the discovery of radium, the *spintariscope* enabled one to watch the action of a single atom, then the *alpha* particle was photographed and still later it was demonstrated that, in the phenomenon of radioactivity, we are present at the birth of helium. Evidence is accumulating to show that it is possible to synthesize helium from hydrogen, neon, from hydrogen and oxygen, argon from sulphur and hydrogen and krypton from selenium and hydrogen.

ENERGY.—The present age marvels at man's conquests of the forces of nature. Yet, this age of energy can only be triumphant when man can know and then direct and control the more important forces within himself.

The laws of physical science are universal and apply equally to living organisms and so called inanimate things. The supposition was entertained that natural objects which to our senses seemed at rest were absolutely devoid of any internal motion.

Molecules and their constituents are never at rest and swift and orderly movements are constantly in progress among and within them.

There is no such thing as immobility.

“Water, to the eye of the poet, the symbol of peace and rest, its flow a quiet, continuous gliding movement, viewed through the molecular spectacles of science, presents a picture compared with which the most frenzied struggles of a fighting mob is almost absolute stillness. So the electric fluid when it is forced into the limelight of searching inquiry, undergoes a similar transformation¹⁷.”

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.

The first principle of energetics is, all physical phenomena (vital or chemical), are forms of motion. All these forms are susceptible of change into one another, and in all the transformations the quantity of mechanical work represented by different modes of motion remains invariable. Atomic energy like matter, in accordance with the law of the Conservation of Energy, is indestructible and uncreatable. Energy is differentiated as *potential* and *kinetic*.

The total energy in matter is dependent upon the extent to which it can be changed.

As long as energy changes neither in position nor in amount in space, "It belongs to the unseen and eternal¹." The latter is no longer tenable. No delicate apparatus has been discovered by science to reveal the rhythmic changes in the energy field by revolving electrons. Some of the lowliest organisms however are endowed with this perceptive apparatus.

The author's *visceral reflexes* show that the potential or slumbering energy is detectable and, if energy is work and the latter is a function of motion, energy in repose is a misstatement.

Our present conception of matter presumes a cyclic or vibratory motion of electrons and it continues as potential energy until transformed into actual energy by some exciting energy from without.

The latter supposes a current of energy or transference of atomic energy in space.

"Energy is like water-power—potential in the lake, actual in the waterfall or river²." Every living being is a transformer of energy converting the environmental energy into mechanical motion, heat and nervous energy.

The sun is the direct source of all the energy animating the earth's surface.

HUMAN ENERGY.—Investigations of all ages have espoused the theory of **HUMAN RADIATIONS**.

To some, the organism is compared to a Voltaic battery which emits something akin to electricity.

The hagiologist conciliates the reality of radiations by referring to the auras in ancient pictures around the heads and bodies of Christ and the saints.

The phenomena of light in materialization have been witnessed and accepted by notable scientists as spiritistic phenomena. Of superstition, it has been said, that it is true psychology with the wrong dress.

The writer is convinced that the phenomena are realities independent of disembodied spirits and can be referred to the manifestations of human energy. Disocculting the occult will be possible when one attains a better understanding of the activities of living cells and when the biologist shall know the laws that govern cell-growth with the accuracy of the scientist knowing his laws.

The depths of the sea teem with luminous fish, crustaceans and zoöphytes (animal light).

Luminous phenomena (**PHOTISMS**) have been coincident with many conversions.

The theory of exteriorization is supported by the occultist in his reference to the perispirit and astral body.

Every individual, it is maintained, is enveloped in a radiance (Aura) invisible to the carnal eye and only perceived by the soul accustomed to it. Perception of the aura is the supposed prerogative of clairvoyance but Kilner³, has shown that any one can observe the "**ATMOSPHERE**" surrounding the human body by aid of chemical screens notably, one containing a solution of dicyanin which, by partially paralyzing the retinal rods and cones causes visibility of the aura in a darkened room.

Kilner does not explain the auric force.

The aura is probably energy-discharge. In a letter from Dr. Kilner, the latter observes: "Your opinion that the aura is only energy emanating from the body corresponds entirely with mine, only I have expressed it in a different manner. I have tried to see it on the dead body but have always failed to do so."

Confirmation of the aura is established by the demonstration of a neurodynamic field (page 80).

In health the aura is symmetrical. In *HYSTERIA*, the aura instead of gradually diminishing and reaching its narrowest limits not higher than the lower half of the thigh (as in health), suddenly contracts to its final breadth at a short distance from the pubes. In *EPILEPSY*, at any time, the width of the aura is markedly increased on one side which inequality is more conspicuous in women than in men (Kilner).

The N-rays of Blondlot, supposed to emanate from the body and detected by the fluorescence of a phosphorescent screen, have been relegated to oblivion. The writers' investigations⁴ which preceded those of Blondlot were abandoned owing to the difficulty of eliminating the personal equation which permitted one to perceive what one expected to perceive (expectant attention).

Holmes, I assume, is sponsor for the epigram that some people believe that their personality is limited by their physical exterior but as far as he himself was concerned, it extended some distance. Léon Denis⁵, contended that, the psychical being is not confined within the limits of the body but that radiations are exteriorized like the Hertzian waves. They arouse impressions in sensitive people varying according to the dynamic condition of such persons; visions, voices or movements. The latter conception corre-

sponds to that of Reichenbach and others, respecting a force variously called odic, vital, electric and magnetic which is exteriorized in an unlimited field and manifested by varied mediumistic or psychological phenomena.

Baraduc⁶, contends that each segment in our organism (cerebral, pulmonary, gastric and genital), has a radio-activity of its own, an area of vibrations varying in nature; that, owing to their power of emanation, they may exert a telepathical influence, a kind of wireless telegraphic action over the passive radioactivity of another person in a condition of vital hypotension. Grasset cites the following from Bué (*Lé, Magnétisme curatif*): "One may easily get a clear idea of the impression made on plants by our radiant action, by operating with hyacinth or tulip bulbs."

In his spectroscopic studies of the human rays', Hooker contends that the color of the radiations are utilizable in determining definite temperamental conditions.

Clerk-Maxwell, observed that progress was symbolized in the clock, the balance and the foot-rule. Implying thereby, if we could time, weigh and measure, facts in lieu of theories could be submitted. Until observations are expressed numerically, all data concerning radiations must be limited to the realms of speculation.

Philosophism, the refuge of the scientifically destitute, can never substitute objectivity in scientific research.

There are more false facts than theories and the true scientist does not hesitate to preside at the birth of a theory and officiate at its burial on the morrow.

Energy liberated by the organism appears in mechanical, thermal and electrical form.

Apparatus devised for recognizing or measuring radiations embrace the biometer of Lucas, the magnetometer of Fortin and Baraduc, the Sthenometer of Joire and a variety

of dynamoscopes. Some are practically sensitive Galvanometers and the essential factor of other apparatus is a light and unsteady needle of straw (Sthenometer) or metal enclosed in a glass case, which is attracted or repelled by the approach of the fingers. The apparatus, in question lack constancy of action and are therefore impracticable. It is unnecessary to discover a new form of energy to make any apparatus of value insomuch as all forms of energy specified as kinetic, gravitational, radiant, etc., are merely protean manifestations of the same thing as their inter-convertibility is conceded.

ACTION CURRENTS.—Physiologists have established the following:—

1. Electrical currents appear in the body when a muscle or nerve is active and such currents are intimately associated with the functional condition of the tissue.
2. These action currents correspond to the general law that every active portion of nerve or muscle maintains a negative relation toward the resting part, *i. e.*, the active muscle and nerve show a negative electrical reaction toward the resting structures.
3. The action currents are sufficiently strong to have a stimulating action of their own. The electric phenomena in the living body (**ELECTROBIOLOGY**) have recently been studied from a diagnostic viewpoint by Baines and Bowman.

ELECTROPATHOLOGY.—In Chicago, September 30, 1913, the writer gave his first public demonstrations of recognizing and measuring human energy in health and disease.

In 1914, Baines and Bowman, published' the result of at least thirty years research work, which has an important bearing on my previous observations. A synopsis of their work is as follows:

The living cell constantly forms biogens (a compound formed only as a result of vital action). The chemical reactions of the cell are dependent on protoplasm which belongs to the colloids (non-conductors of electricity). Crystalloids, the other cellular constituents, are conductors of electricity. In emulsion colloids, if the reaction is alkaline the charge is always negative, and it is positive, if acid. Physiologic action is associated with electrical phenomena which are demonstrable by a sensitive Galvanometer. The history of Electrophysiology is a record of contradictions due to a disregard of the following fundamental factors:

1. Chemical generation of nerve force in the body.
2. Presence in the latter of great conductive and inductive capacity; and
3. The conductive and inductive capacity of every liquid and every moist substance or object.

The human generates electricity statically by muscular movement—but this charge can be dissipated almost instantly by placing the body in contact with an earth plate of low resistance. Its great conductive and electrostatic capacity is likewise known because the insulated body can be charged to a very high potential. The body may be likened to a collection of storage cells, which are liable to become highly charged, or to have their charge altered by any direct or passing current, or exciting influence. Electromotive force continues even when the body is absolutely motionless, hence the theory of chemical generation of nerve force. Electricity in the body must be constantly discharged, otherwise the electrical pressure would become unbearable. The skin, the body insulator, is not of uniform high resistance. Sign, electromotive force and current vary with the individual. Whereas the generation of electricity in the body may be constant, its dissipation

cannot be so by reason of the varying conditions of external conductivity. The sign of the current is not always the same. Taking the right hand (as a whole) as one terminal, and the left hand as another terminal of the body, one person may be negative and the other positive.

In this respect the body resembles a Galvanic cell whose terminals, electromotive force and internal resistance are unknown until tested and ascertained. Investigators have ignored the tension and sign of the atmosphere in the testing room, which have always been unknown quantities. The Electromotive forces are liable to variation by the following heretofore ignored factors:

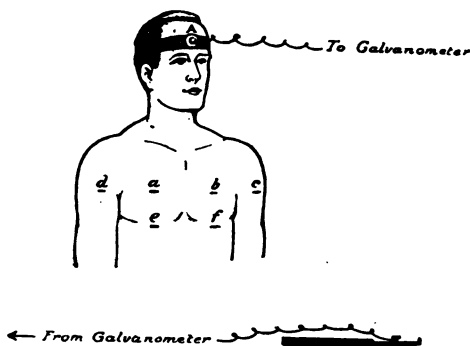


FIG. 1.—Method of testing (Baines and Bowman).

1. Number of persons present and their respective electrical signs and electromotive forces.
2. Nature of liquids employed in moistening the electrodes.
3. Degree of absorption of material on electrodes.
4. Area of electrodes; and
5. Amount of moisture present in the subject examined.

The apparatus used are a sensitive Astatic mirror Galvanometer, short-circuit key, flexible wire, electrodes and

contacts. Unfortunately the apparatus is not portable, it cannot be installed within a mile of an electric railway or mains carrying current of high potential by reason of induction, which will yield only negative results. It must not be subjected to vibration.

INFLAMMATION.—Augmented temperature acting upon the nerve sheaths by decreasing resistance causes a leakage or short circuit, *i. e.*, the nerve current from the affected parts passes into wet tissue, thus depriving the vessels of their supply. If the part *a* (Fig. 1) were an inflamed area, the deflection of the needle from "A" to *a* would be higher

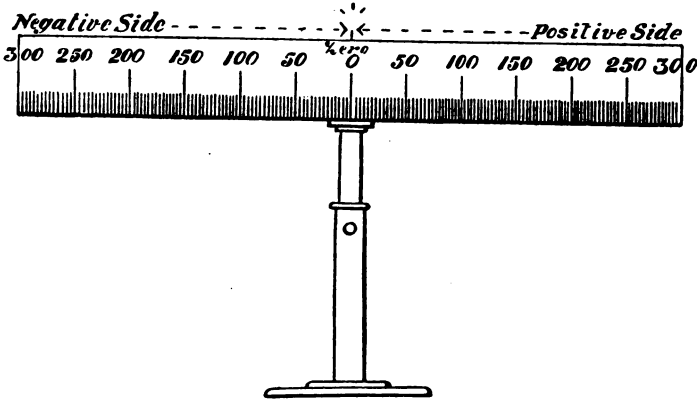


FIG. 2.—Scale upon which deflections are recorded in millimeters (Baines and Bowman).

than from "A" to *b*, and the rapidity of deflection would be in proportion to the acuity of the inflammation. Cure of inflammation is based on restoring the insulation of the nerve sheath by dielectrical treatment.

NEURASTHENIA.—The Galvanometer scale is divided into 300 millimeters on each side of zero (Fig. 2). In health, the hand to hand deflection should be 250 to 300 mm., rising steadily and becoming constant at whatever

point it halted. In neurasthenia, the light is never at rest and the deflections may be anything from 5 to 90 mm. It will be both positive and negative, moving slowly and erratically backwards and forwards. Irregularity, fluctuation and insufficiency of nerve energy characterize this disease. Improvement was effected in these cases and noted objectively (increased and steady needle deflections) by having the patients constantly wear a belt carrying two circular silver plates, one in contact with the spine and the other with the abdomen, just above the navel. To the plates a dry cell (electromotive force of 1 Volt) was connected (—terminal to back and + to abdominal plate).

EPILEPSY.—The essential neuro-electrical phenomena are low body and high head deflections, subnormal body and high head temperature and a point of least resistance at some cranial point from which during an aura, or during and after an attack, an abnormally high deflection can be elicited. The comparative data obtainable are as follows:

HEALTHY SUBJECT.—Normal temperature; hand to hand deflection, 250 mm., positive; head deflections, approximately, 270 mm.; above navel, 200 mm.; spinal cord, 240 to 200 mm.

EPILEPTIC.—Temperature, 95.6° F.; hand to hand deflections, 120 mm. (positive or negative); head deflections during an aura or after a paroxysm, 700 mm. (shunted down); above navel, 10 mm., spinal cord, 10 mm., point of least resistance on skull, 1200 mm., (shunted down to scale limit). The direct cause of a paroxysm is a species of neuro-electrical brain storm* and nature creates a path of least resistance to the passage of the current somewhere in

*It was Charcot, I believe, who made a similar analogy to *hysteria* when he referred to it as an electric explosion (sex manifestation) resulting from lack of ground-wire.

the skull (*safety valve*) which is located by noting the area from which the highest head deflection is obtained.

Bromides in this disease act by checking generation of nerve force. This is tantamount to the action of bromide in photography by checking development. Good results are achieved by shunting the nerve current from the head to the body. If the hair covering the safety valve is removed, and a small silver plate is fastened upon it (by adhesive plaster) and a belt carrying a silver plate (with a terminal) is placed around the waist so as to make contact

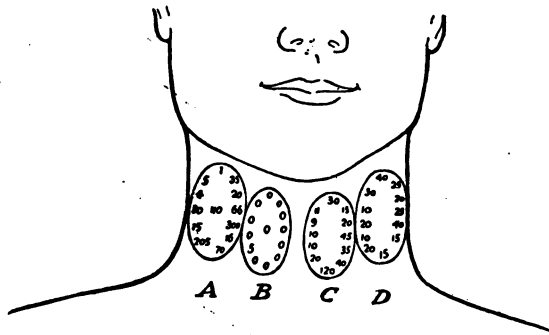


FIG. 3.—Illustrating the "clock test" in cancer (Baines and Bowman).

with the skin just above the navel, and both plates are connected by a wire of low resistance, the deflections and temperature will in a few days go to normal. During an aura, no fit will ensue if the head is at once wetted with hot salt water which decreases skin resistance and provides an easy exit for the current.

CANCER.—The essential diagnostic feature is the dielectric character of the growth which interposes a high resistance to the passage of electricity through it, or being in all probability an absolute non-conductor.

Fig. 3 represents the "clock test" *i. e.*, making one

contact in the center and the others in accordance with the hours upon the dial of a clock. The deflections were in millimeters of the scale.

A—Area of secondary deposits.

B—Cancerous growth.

C—An area on unaffected side corresponding to the cancerous growth.

D—An area on the unaffected side corresponding to the secondary deposits.

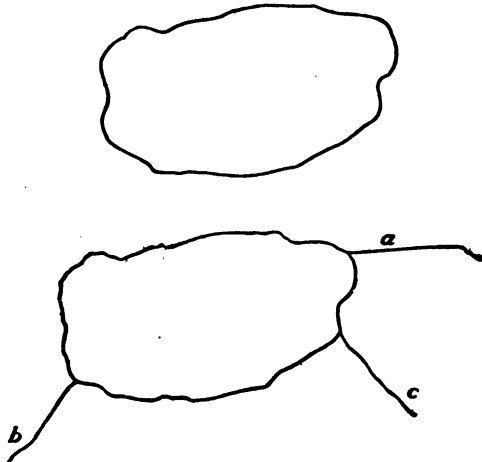


FIG. 4.—The upper figure illustrates the area of cancer by ordinary diagnosis and the lower one, by electro-diagnosis. The threads (a, b, c) indicate the extension of the carcinomatous infiltration beyond the area suggested by the conventional examination (Baines and Bowman).

By aid of the electro-diagnostic method, the area of the cancer can be detected with exactitude (Fig. 4).

BIOMECHANIC DETECTION OF ENERGY.—The physiologic mechanism which the writer chiefly employs for detecting energy in health and disease is the living human stomach (Gastrobiodynamometer). Epoch-making discoveries usually date from the discovery of a sensitive mechanism, which

reveals some phenomenon of the atomic world. The radium emanation is detectable by the electroscope which is a million times more sensitive than a spectroscope, yet the latter will detect the millionth of a milligram of matter. The delicacy of the string-Galvanometer has established the principles of electrocardiography. In employing the stomach reflex of Abrams as a delicate physiologic test for energy, stomach musculature is utilized. The latter representing bioplasmic matter is the most primitive and

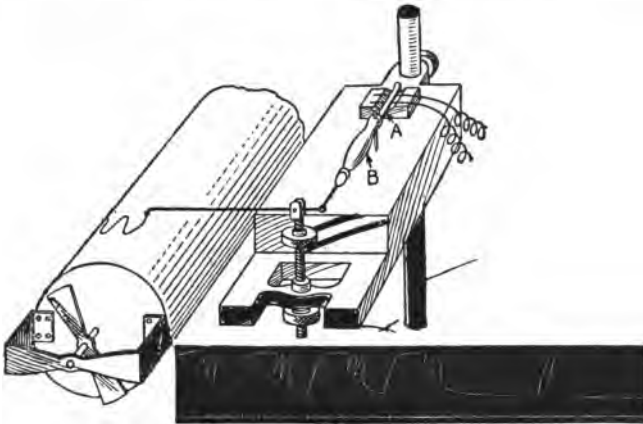


FIG. 5.—Apparatus for recording wireless messages with the leg of a frog; A, nerve; B, muscle. The attached tracing represents a record.

sensitive substance for exhibiting the phenomenon of vitality. The pupillary response to light is an energy reaction not unlike the stomach reflex.

A frog's muscle is now used for recording wireless messages. The sciatic nerve of the leg is connected with the microphonic circuit of the receiver. One end of the leg is fixed to a base, and the other end connected with a pivoted lever which records on a drum the contraction of the muscles caused by the electrical impulses (Fig. 5).

Reference has been made to the sensitiveness of the electroscope. The latter is far less sensitive than the stomach reflex.

An infinitesimal quantity of radium detectable by the electroscope at a distance of thirty inches, will yield a reaction from the stomach at a distance of thirty feet, and this distance may be exceeded by the use of an induction coil (page 275).

Olfaction surpasses in sensitiveness the most impressive scientific instruments. The spectroscope can detect a quantity of helium weighing no more than 3-100 millionths of a grain, yet the nose can perceive an odor of a three hundred times smaller quantity of sulphureted hydrogen. Each individual emits an odor peculiar to himself as evidenced by the ability of bloodhounds and other animals to scent out a man's trail. The hunter avoids the windward side of the game he seeks to bag. Alexander Graham Bell, recently affirmed, if an odor could be measured a new science would be created. By means of the biodynamometer (page 238) it can be shown that each odor can be identified by its specific rate of vibration.

CHAPTER II.

THE STOMACH REFLEX.

STOMACH.—The musculature of this organ is very powerful. In the patient St. Martin, it was found that when the bulb of a thermometer was placed about three inches from the pylorus through the gastric fistula, it was tightly embraced from time to time and drawn toward the pyloric orifice (a distance of three or four inches). The anatomic features are shown in fig. 6.

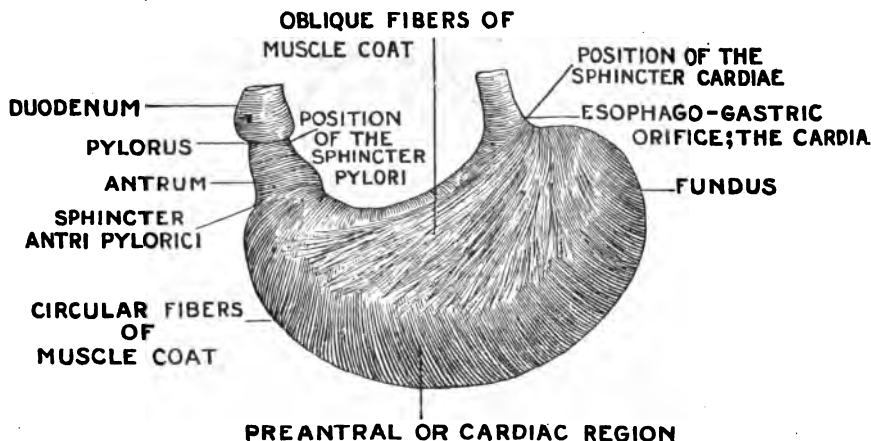


FIG. 6.—Anatomic features of the stomach (Brubaker, Blakiston).

The **NERVES** specially concerned in gastric contractions are the vagi and splanchnics. Impulses to the nerve centers are contained in the vagus trunk, whereas impulses from the centers reach the stomach through the vagus and splanchnic nerve. The vagal fibers are motor and induce contractions when stimulated. The splanchnic fibers are

inhibitory and produce dilatation when stimulated. Innervation of the stomach is shown in fig. 7.

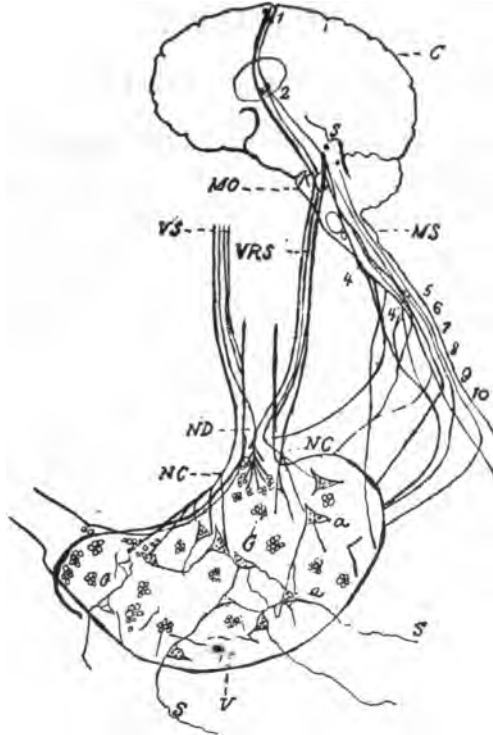


FIG. 7.—Nerves of the stomach musculature. C, the cerebrum; V, stomach; MO, medulla; MS, spinal cord; 5-10, thoracic roots; VRS, right vagus; VS, left vagus; ND, dilators of the cardia; NC, constrictors of the cardia; A, Auerbach's plexus; S, S, fibers from the sympathetic plexus; 1, sulcus cruratus; 2, corpus striatum; 3, corpus quadrigemina; 4, centers in the spinal cord. The dilator center for the cardia inhibits the movements of the pylorus.

The sympathetic fibers emerge from the cord by the anterior roots of the spinal nerves, from the 5th to the 8th thoracic. The traditional conception of the stomach as an organ horizontal in position has been modified with the advent of the Roentgen rays yet, by the author's *vago-*

visceral method of percussion, it may be shown that the Roentgenographic examination yields fictitious results. As long as food is present in the stomach, the peristaltic waves are about three to the minute. Water runs out of the organ almost as quickly as it enters it. The motor mechanism of the stomach as expressed by peristalsis, must be differentiated from the tonicity of the gastric muscles. In the latter, the stomach is a potential space which should contract upon its contents in such a manner that the tubular form is maintained until the stomach is empty (Barclay). Relaxation of the tonicity causes a dropping of the lower stomach border whereas an increase in the tone causes elevation of the organ.

Prior to an operation, the stomach by X-ray examination has been found to be normal, yet at the operation it appears as a flaccid sac or *vice versa*. In the former instance, nausea and anesthesia have diminished tonicity; in the latter, retching or vomiting has increased tonicity. The topography of the organ is shown in figs. 8 and 9.

When the lower border of the stomach is distended, it lies about two to three fingers' breadth ($1\frac{1}{2}$ to $2\frac{1}{4}$ inches) above the umbilicus and when empty, it retreats into the left cavity of the diaphragm and falls away from the abdominal wall.

PERCUSSION.—The stomach is immersed in an atmosphere of tympany, and it is impossible in the norm to differentiate by percussion the tympanitic resonance of the stomach from the adjacent coils of intestines.

If however, the stomach musculature is reflexly stimulated so as to evoke the stomach reflex, the tympanitic resonance of the organ is supplanted by dulness and differentiation from the adjacent structures, yielding tympany is possible.

THE STOMACH REFLEX

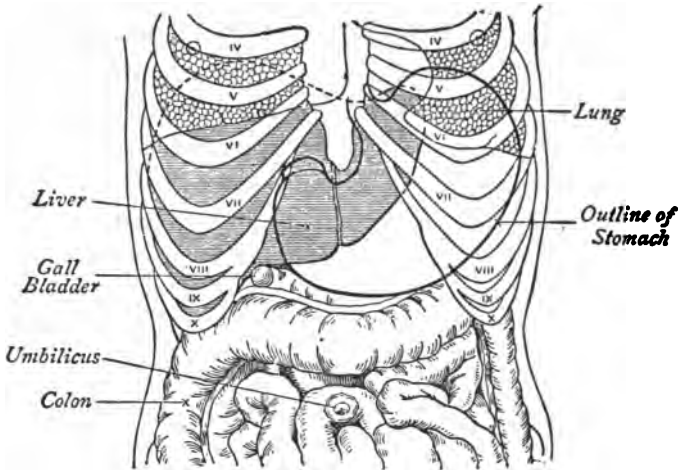


FIG. 8.—Position of the organs in the upper part of the abdomen. **Front view.** The highest points of the liver and fundus are somewhat too high in the figure (Luschka, Reed).

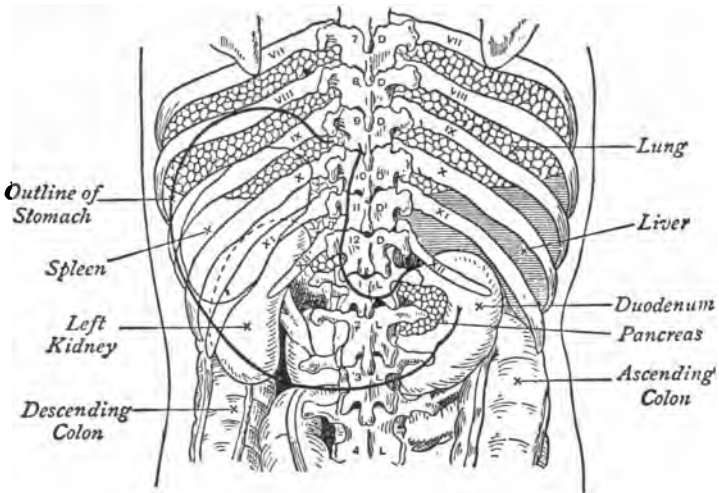


FIG. 9.—Position of the organs in the upper part of the abdomen. **Back view** (Luschka).

To explain the altered percussion sound when the stomach reflex is elicited, one must have recourse to the Skodaic interpretation of the condition which exists when dulness supplants tympanicity. The reflex in question causes the gastric walls to become tense, thus putting the air or gas within them under increased tension, and for this reason we have the physical elements necessary for the transition of a tympanitic to a dull sound. The stomach reflex is mediated through the vagus which is the chief *autonomic nerve* innervating the viscera.

Atropin paralyzes the motor endings of the vagus. An injection of 0.001 gm. (gr. 1-60) of the latter drug, will manifest its action within 30 minutes and disappears in from 1 to 3 hours. During the full physiologic action of the drug, the stomach reflex cannot be elicited. The vagus is more active in middle life than in old age, and least active in infancy, hence the stomach shows a varying state of tonicity; it may be normal (orthotonic), increased (hypertonic) diminished (hypotonic) or absent (atonic).

The stomach reflex is elicited in response to a stimulus. The fundamental property to which the total activity of the living substance can be traced is its irritability. The latter can be evoked by chemical reagents, mechanical agents, heat, light and electricity. The production of energy is many times as great as the energy of the stimulus employed. Thus, in the familiar experiment with a frog's gastrocnemius, the mechanical work of the muscle called forth is about 38 times the active force of the stimulus. Toward every effective stimulus, a cell always reacts in a way which is characteristic for its kind; a muscle cell always responds with a contraction, a salivary gland cell always secretes saliva, etc.

In the reflex responses to stimuli, a reflex is more easily

discharged by stimulation of the peripheral end-organ than by stimulation of the corresponding afferent trunk.

THE HUMAN AUTOMATISM.—If the toe of an adult is pricked with a pin, the foot is pulled away in about one-tenth of a second. This is a reflex, and is very slow when compared with the speed of electricity or a light wave. The latter would travel seven times the equator in a second, but the nerve wave travels at the rate of only 100 feet a second. A *reflex* is made up of a stimulus causing a discharge of energy, transmission of the latter to a center whereby another energy is discharged, and finally the transmission of energy to the stimulated area. All actions are essentially reflexes, and if this viewpoint is carried further, it means that we have no will of our own, and that our actions are simply the result of external circumstances. We are instinctively like ants and bees, and we are creatures of physical forces. All reflexes are purposeful in character; closing of the eyelid, and contraction of the pupil protect the eye from foreign bodies, and the retina from intense light. Irritability and conductivity are the only qualities essential to reflexes, and both are common qualities of all protoplasm¹⁰.

What happens to a nerve when it is stimulated or when it is struck by a series of blows? Loeb¹⁰, demonstrated that, muscles could be made to contract or relax under the influence of certain *ions*. Mathews, found that, a like effect could be observed in nerves. It was Graham, who divided all substances into those which crystallize when they solidify and those which do not.

The latter were designated colloids or glue-like substances. The colloids in the body bear a positive electrical charge and are precipitated by negative *ions*.

Now the nerves consist of colloid particles in suspension and the thicker this jelly-like substance, the better will the nerve conduct. When chloroform or ether is inhaled, unconsciousness ensues when the

nerves no longer conduct sensation. Here, the action of the anesthetic is to dissolve the colloid substance, and the thinner the latter, the less easily will the nerves conduct. The colloid particles as intimated are positively charged, and a nerve is stimulated by a current proceeding from the negative pole. The positive and negative *ions* in a nerve are balanced. Now suppose the nerve is stimulated by blows, then the colloid particles coming together would have their surfaces reduced. The latter would reduce their electrical charge, and releasing a number of negative charges, a nerve impulse would be started.

Static Electricity is obtainable in a variety of ways among which is concussion which produces positive and negative charges. If the *seventh cervical spine* is struck, the energy evoking the stomach reflex is neutral and it is found to be negative when the first lumbar spine is concussed.

VISCERAL TONICITY.—In health the viscera are in a state of tonicity, *i. e.*, their musculature is in a more or less permanent although variable condition of contraction. This visceral tonicity is most important in regulating the cavities of the heart and other organs.

Muscle tonus is a reflex caused by stimuli acting on the skin (and elsewhere) conveyed by nerves to the cord, and from the latter impulses are carried to the muscles. This tonus disappears if either the posterior roots of the spinal nerves or the afferent nerves from the muscles are cut. When a stimulus is applied to the stomach region, percussion of the stomach elicits dulness.

We shall note later (page 103), that a relaxed organ will yield a smaller area of dulness than an organ which is in a state of tone. To accurately reproduce the area occupied by an organ, it must be put in a condition of augmented tone, otherwise percussion will yield untrustworthy results.

METHODS OF PERCUSSION.—The author's experience with hundreds of physicians to whom he has taught his method of delimiting the stomach, constrains him to conclude that, errors are most frequent owing to the non-recognition of differences in the percussion note, rather than inability to elicit them.

It is better to rely upon the fingers in percussion. Instrumental is easier than finger percussion, although less reliable. The index or second finger of the left hand is applied closely and evenly to the part and then tapped with the second finger of the right hand. A single, double, or repeated percussion blows may then be made. In finger-finger percussion, we can appreciate the resistance of tissues percussed (plessesthesia) and adapt the finger to irregularities of the superficies.

Observe the following: 1. Press firmly as a rule against part to be percussed. 2. Movement of percussing hand must spring only from wrist, while forearm is motionless. 3. Blow must be sharp and quick, direct and perpendicular. The results obtained by percussion are as much due to the method of execution as to the condition of the tissues. The force of the percussion blow is always secondary to the knack of obtaining full vibration in resonant tissues. The student to gain flexibility of the wrist joint should practice movements of this joint with the arm adducted toward the thorax, and the forearm at right angles and motionless.

As already observed, the best results are secured by finger-finger percussion; one finger acting as a pleximeter and the other finger as a plexor. After this manner one can appreciate the resistance of tissues percussed (palpable percussion). To localize the percussion-blow, the second finger (usually employed) acting as a pleximeter must be

held rigid with the unguis phalanx slightly raised (Fig.10). If the latter precaution is not taken, and the terminal phalanx rests on the abdomen, the blow will be transmitted to the contiguous area, and the tone elicited will obscure the stomach dulness. When the raising of the unguis phalanx is difficult, a celluloid thimble may be affixed to the end of

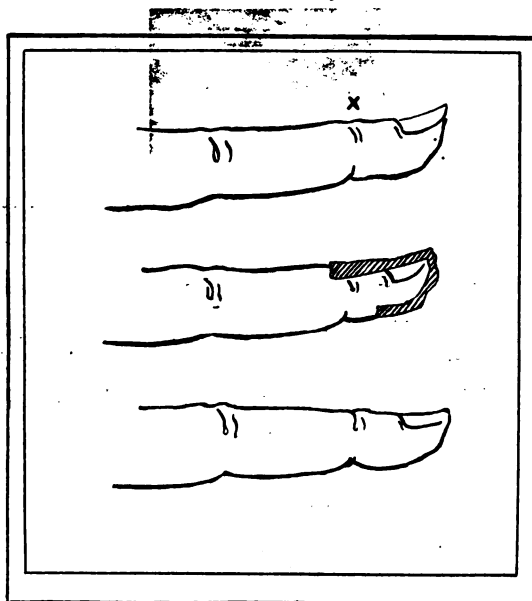


FIG. 10.—The upper figure represents the correct position of the finger when used as a pleximeter. The cross indicates the part of the digit to be struck by the other finger acting as a plexor. The lower figure indicates the incorrect position of the finger in eliciting dullness of the stomach. The middle figure illustrates the use of plaster for raising the unguis phalanx when this is impossible voluntarily.

the finger; thus attaining the correct position as shown in fig. 11. Another means of securing the same object is to raise the phalanx by aid of adhesive plaster as shown in fig. 10.

To thoroughly appreciate the changes in resonance, light percussion must be employed, insomuch as it is a

recognized law of sense-perception that the less loud the initial sound, the simpler it is to recognize its variations and furthermore, a heavy blow dulls the sensibility of the finger tips.

If the finger used as a pleximeter is held stiffly and rests



FIG. 11.—Elevation of the ungual phalanx secured by aid of a celluloid thimble

VERY LIGHTLY in contact with the stomach region, the terminal phalanx need not be raised.

The phalanx need not be raised if either of the following methods of *Auscultatory Percussion* is used; 1. If during percussion a stethoscope is placed somewhere in the stomach



FIG. 12.—Illustrating orthopercussion.

region. This method accentuates the dulness. 2. Using the stethoscope in the same way and in lieu of percussion, briskly rub the skin. When the lower border of the stomach is attained, a characteristic differential sound is audible.

The percussion blow may also be localized by Gold-

scheider's orthopercussion; distal phalanx of the plessimeter finger is held perpendicular to the superficies (Fig. 12).

For those unskilled in finger-finger percussion, the plexor and pleximeter shown in fig. 13 have been devised by the author.

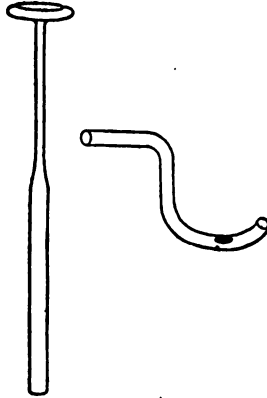


FIG. 13.—Plexor and pleximeter for the use of physicians unskilled in finger-finger percussion. The dark area in the pleximeter represents a small quantity of wax. The latter eliminates all adventitious sounds likely to disturb the elicitation of stomach-dulness. A light blow yields the best results and when the lower border of the stomach is attained, an unmistakable woody sound is audible. The plexor at its rounded extremity is provided with a soft rubber ring.

Light blows with the plexor yield the best results—a sound almost woody in character, when the lower border of the stomach is attained. Plexor-finger percussion may be used (Fig. 14); the tip of the finger firmly approximating the abdominal wall.

Before attempting delimitation of the lower stomach border, the lower border of the liver is defined in the usual way, and marked by a dermatograph. It must be observed however, that when energy is conveyed to the epigastric region, the liver border will be found lower (pages 81 and 103).

To elicit the stomach reflex, it is necessary to take the following factors into consideration; the subject, posture and position of the subject, grounding and energy.

THE SUBJECT.—The reflex is best elicited on a healthy test subject with known stomach tonicity, with moderately thin abdominal walls, and in whom a tympanitic sound is demonstrable by percussion **OVER THE ENTIRE ABDOMEN.**



FIG. 14.—The author's method of threshold percussion for defining viscera borders. The tip of the index finger is firmly fixed at an angle with the chest or abdominal wall and parallel with the boundary percussed. As the finger gradually approaches the boundary it is struck with the middle finger of the other hand at its base and side as indicated by the black spot.

Spastically contracted intestines, obesity, the presence of feces and intra-abdominal congestion*, will modify the abdominal tympanicity. For esthetic reasons when the biodynamic reactions are executed (page 124), the subject may be screened from the patient. When a better acquaint-

*Described by the author in his book "*Splanchnic Neurasthenia*," E. B. Treat & Co., New York.

tance with the method is attained, the reactions may be obtained directly from the patient.

I employ a male individual as a test subject. Some of my disciples employ a boy with very thin abdominal walls, who is in attendance at their offices for several hours daily.

One physician employs a dog for demonstrating the stomach reflex; the animal held erect on his hind legs.

The tonicity of the stomach varies in different individuals, yet investigations convince me that this variable factor is practically negligible in gauging the intensity of the reflex with the biodynamometer (page 44).

The subject in whom the reflex is elicited must wear no yellow material, nor ingest prior to the examination any food possessing this color (page 114). Odors of various kinds (page 124) and emotional factors (page 34) may influence the visceral reflexes. One must work in a room with subdued light (page 36) and no colored shades must be used to modify the light. The stomach like other visceral reflexes is easily exhausted.

As a rule two hours continuous use of my test subject unfits him for the execution of my physico-diagnostic methods.

It is absolutely necessary to determine if the reflex is present before making a biodynamic reaction. Not infrequently the liver border (page 77) or the heart is used when the stomach reflex is exhausted.

To revivify the exhausted reflex, *pilocarpine* may be used, but this drug accentuates the reflex so as to make the results untrustworthy. A simple and often reliable method is to permit the flux from a large horseshoe magnet to act on the 7th cervical spine for several minutes. *Vide* p. 62.

It is a curious physiologic phenomenon to which the author has directed attention *elsewhere*, that other afferent paths may be utilized in the excitation of

centers which cannot be reached by paths already enervated.

The time most propitious for using the subject is about one hour after a repast. When the stomach is empty, it retreats into the left cavity of the diaphragm, and falls away from the abdominal wall. The *psycho-vagus tone* and consequently the stomach reflex, may be compromised by emotional factors which by increasing in the blood, the content of adrenalin secretion (hyperadrenalinemia) reduces vagal tonicity.

PYLORUS REFLEX.—This is a new phenomenon observed by the author in thin subjects, at the end of expiration during suspended breathing. When the 11th rib in *Traube's space* is struck a series of blows with a plexor, corresponding to the region of the pylorus, an elevation followed by slight retraction of the abdominal parietes is noted.

POSTURE AND POSITION.—The subject must be in the **ERECT POSTURE**, which is the best possible position to elicit the stomach reflex.

The posture of the patient from whom the energy is conveyed is immaterial. It is possible however with intense energy to evoke the reflex in the recumbent posture in a suitable subject. The test subject or the patient, on whom the reflex is elicited must face toward the West. When the subject faces North, no energy is sufficient to elicit the reflex, and if the subject faces South, only a positive energy will evoke the reflex; negative energy is without any action. The foregoing is equally true if grounding is necessary with a plate of aluminum (page 35). To secure uniform results even the patient from whom the energy is conveyed should face the West, or if recumbent, the feet should be in the same direction, insomuch as the energy discharged varies with posture (page 35).

The Earth is itself a magnet and the terrestrial magnetic elements of a place may modify the foregoing results, which held good in San Francisco, where most of the observations have been made.

When the subject stands exactly in the **MAGNETIC MERIDIAN**, the stomach reflex is evoked of its own accord, whether the subject faces the North or South. Place a compass on the floor and mark the position of the two ends of the needle. Remove it, and draw a line joining these two points. This line is the intersection of two planes, *viz.*:— the Magnetic Meridian, and the surface of the floor.

Our methods of *Topographic Percussion* have ignored the magnetic elements and are consequently erroneous. A relaxed organ will yield a smaller area of dulness than an organ which is in a state of tone (page 103). The foregoing refers to all the viscera.

The best stomach reflex is obtainable when all iron or steel articles are removed from the room and the pockets of the subject.

GROUNDING.—This refers to the forming of an earth connection. The discovery of the stomach reflex solves many heretofore inexplicable physical phenomena. The reflex demonstrates that the earth is the negative terminal of nature's energy. With the subject facing West, even though insulated, either pole of a bar-magnet will elicit the stomach reflex, but the latter is not obtainable as a rule with other forms of energy, unless the subject is grounded.

The subject must stand on a flooring of unvarnished wood. Carpet is not objectionable if the latter condition is fulfilled. When the flooring is of insulated material, the subject must stand on a sheet of **ALUMINUM**; the latter is grounded by a wire connected with a convenient faucet,

radiator or gas-pipe. The shoes worn by the subject must be free from insulating material. In my office as well as elsewhere, if the subject stands over water or gas-pipes under the flooring, a spontaneous stomach reflex (revealed

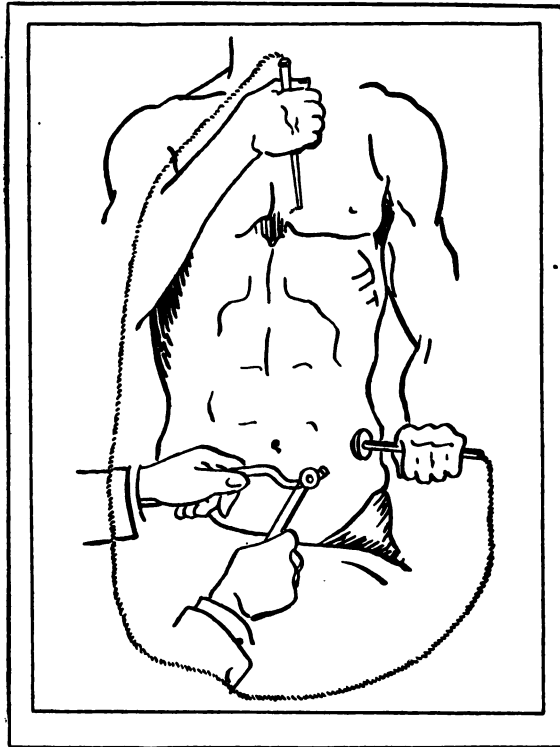


FIG. 15.—Illustrating method of conveying energy from the heart to the stomach region. The subject holds both electrodes during the time the physician percusses by aid of the plexor and pleximeter (Fig. 13).

by dulness) is evoked and disappears when the subject occupies another part of the room.

ENERGY.—Proximity of the subject to intense light must be avoided; light being a form of energy, and is capable in itself of evoking the stomach reflex. It is necessary

primarily to locate the lower stomach border. To increase the tone of the gastric musculature sufficient to elicit dullness, two simple maneuvers are available:

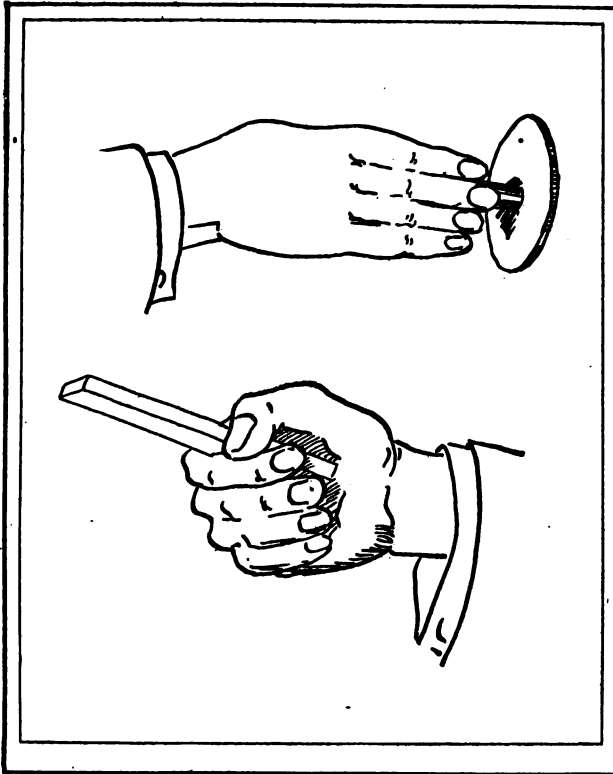


FIG. 16.—The lower figure represents the correct way of holding the magnet or electrode. The upper figure is incorrect owing to modification of polarity from the finger tips and approximation of the latter to the metal which causes short-circuiting and interferes with conveyance of energy.

1. While the patient or an assistant directs either pole of a bar-magnet at a distance of about 4 inches from the presumable location of the lower stomach border, light percussion is executed from below upward until dullness

is elicited; this is the lower border of the stomach and its position should be marked with a dermatograph.

2. During the time energy is conveyed from the heart region of the subject to stomach region by means of an insulated cord of copper as shown in fig. 15, execute percussion after the manner cited in the first maneuver.

To secure uniform results, the electrode approximating the stomach is fixed in the left anterior axillary-line just below the 10th rib. The finger tips discharge energy (page 37) hence the latter must be directed away from the electrodes (Fig. 16). The energy polarity may be modified at its source, or at its point of discharge.

Thus, the negative energy from the left ventricle would be neutralized if the finger tips of a male's right hand holding the electrode were directed toward the heart and consequently no dulness of the stomach would ensue.

The insulated flexible copper conducting cord and electrodes which I employ have been devised by Dr. George Starr White, of Los Angeles.

In my experiments, it was found that aluminum would reinforce human energy, hence the electrodes are of aluminum.

Dulness of the stomach (stomach reflex) may be elicited in a variety of ways by reflex stimulation of the vagus. The act of deglutition, stimulation of the nipples, pressure in an intercostal space, etc., will temporarily dull the stomach. As a rule, energy conveyed to the stomach region will only maintain stomach dulness during the duration of its conveyance, but when the energy is intense (page 184) the dulness may persist for several minutes.

When the stomach dulness is correctly elicited, the percussion sound is either dull or tympanitically dull; the grada-

tion being dependent on the intensity of the energy plus the response of the gastric musculature. After demarcation of the lower stomach border with energy of moderate potentiality, and an energy of greater potentiality is conveyed, there is not only accentuated dulness but likewise a

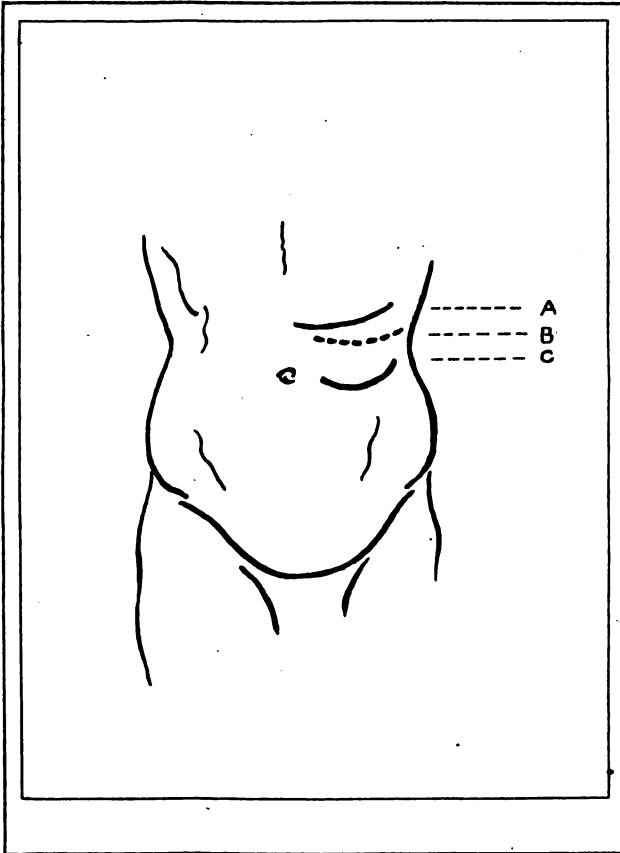


FIG. 17.—Liver (A) and stomach (C) borders. The latter were primarily elicited by a bar-magnet. When energy was conveyed to the stomach region from a carcinoma, the energy potentiality was such, that it caused a retraction of the stomach border from C to B, and if percussion were not extended far enough up, stomach dulness would have escaped observation.

RETRACTION of the stomach border. UNLESS THE LATTER IS CONSIDERED, PERCUSSION IS NOT EXTENDED FAR ENOUGH UP, AND AN ERROR MAY BE PERPETRATED BY FAILING TO RECOGNIZE THE RECEDED STOMACH REFLEX.

This contingency is shown in fig. 17.

The following constant may be formulated;—the duration and amplitude of the stomach or any other visceral reflex is in direct proportion to the intensity of the energy and its proximity to the region governing a given reflex.

Even in the norm, when energy of moderate degree is conveyed to the stomach region and percussion is executed, the stomach shows alternate tympanitic resonance (never pronounced) and dulness at intervals of from 3 to 5 seconds (page 27).

In hypermotility of the organ which however is not frequent, the spontaneous alternate tonicity and relaxation of the stomach will create dulness and tympanitic resonance even though no energy is conveyed.

Fig. 9 shows the posterior view of the stomach. When energy is directed anteriorly to the stomach region, an area of dulness is evoked posteriorly, surmounting the splenic dulness which corresponds to the gastric area. The latter is essentially the *dorsal gastric nucleus of resonance*.

CHAPTER III.

POLARITY AND MEASUREMENT OF HUMAN ENERGY.

Until a better acquaintance with human energy is attained, we are constrained to consider biodynamic processes in conventional technicalities.

POLARITY.—As an aid in differential diagnosis, it is necessary to determine the polarity of energy. The polarity of energy may be determined by a bar-magnet. If dulness of the stomach is elicited by conveyed energy, have an assistant or the patient hold first one end marked N (positive), and then the other end marked S (negative pole), in the direction of the stomach during percussion. If the dulness persists with the N pole and is dissipated by the S pole, the energy conveyed is positive. The opposite also holds good.

When the stomach dulness is dissipated by both poles of a bar-magnet, it is **NEUTRAL** or **isoelectronic**, and when it persists despite the flux emanating from both poles, it is positive and negative. The energy discharged in health and disease may be:

1. Positive.
2. Negative.
3. Neutral (Isoelectronic).
4. Positive and negative.

An assistant may be eliminated by using a small disk which is fixed to the electrode approximating the stomach. The disk is covered on one side with a positive and on the other side with a negative discharging chemical.*

*These disks are furnished by Philopolis Press, 711 St. Paul Building San Francisco.

Polarity can only be determined during the time the energy is conveyed to the stomach region. Like care must be employed in holding the magnet as in holding the electrode (Fig. 16). If dulness of the stomach is evoked by exposure to the flux of one pole of a bar-magnet, the opposite pole of another magnet acting in the same direction will neutralize its effects, and the dulness is dissipated. Exposure of the subject to two like poles of a magnet multiplies the intensity of the dulness; the streamings being concentrated anteriorly on the stomach region.

Care must be exercised in interpreting the lettering on a magnet. If a bar-magnet is suspended, the pole of the magnet which turns North, is the north seeking pole or positive pole in Germany, and all English speaking countries. This pole is marked N. According to the law of magnetic attraction and repulsion, the earth must be considered as a ball with a bar-magnet in its axis, but shorter than its axis, the poles of which are negative at the North pole, and positive at the South pole of the earth. In accordance with this conception, the French magnets are marked N (being negative) and S (positive). S will seek the North and N, the south of a suspended French magnet. The N seeking pole of a compass needle will be repelled by the N marked pole of an English or German bar-magnet, and will be attracted by the N marked pole of a French magnet.

The bar-magnet should not exceed 6 inches in length, $\frac{3}{4}$ inch in width and $\frac{1}{2}$ inch in thickness. Otherwise, the potentiality of human energy cannot cope with the polarity of the magnetic flux. For a like reason, the end of the magnet must not be held too close to the stomach region; just far enough (before making the biophysical examination) to produce stomach dulness.

Dr. George White, standardizes his magnet by employing

one which causes a deflection of a compass needle at a distance of 6 inches.

OWING TO MY FAILURE TO CORRECTLY INTERPRET THE MARKINGS ON MY BAR-MAGNET, THE ELECTRONIC REACTIONS CITED IN THE FIFTH EDITION OF 'SPONDYLO THERAPY' MUST BE REVERSED: POSITIVE, SHOULD READ NEGATIVE AND NEGATIVE, POSITIVE. POSITIVE AND NEGATIVE AND NEUTRAL REACTIONS ARE ALONE CORRECT. THE POLARITY OF THE ENERGEIAGENIC CENTERS MUST LIKEWISE BE REVERSED. THE REACTIONS IN THIS BOOK ONLY HOLD GOOD WITH A MALE SUBJECT FACING THE WEST (page 34).

The polarity of energy is determinable directly by the SPLANCHNIC VASOMOTOR REFLEXES (page 81).

NON-DULING ENERGY.—Reference has heretofore been made to energy of sufficient polarity to elicit the stomach reflex as indicated by dulness on percussion of the lower stomach border.

Non-duling energy signifies that, although energy is discharged, it is insufficient to evoke the stomach reflex, but is nevertheless capable of neutralizing either or both poles of a magnet so that the poles which in the norm elicit the reflex, can no longer do so during the time energy is conveyed to the stomach.

Non-duling energy may be positive, negative, positive and negative or neutral. In the norm a neutral duling energy emanates from the 7th cervical spine (Fig. 28). If the electrode is held away about one inch from the latter area, while no stomach dulness can be evoked, the energy conducted is sufficient to prevent either pole of a bar-magnet from discharging a reflex.

Therefore, the energy from the 7th cervical spine with the electrode in contact with the skin will produce a neutral duling energy, at a distance of one inch a non-duling neutral

energy is manifested. Non-duling may be converted into duling energy, in two ways; 1. By condensation (page 70) and 2, By passing it through an induction coil (page 275).

POTENTIALITY OF HUMAN ENERGY.—We are constrained to employ electrical terms and electrical methods of mensuration until our knowledge of this form of energy is better understood. From the viewpoint of the utilitarian, the

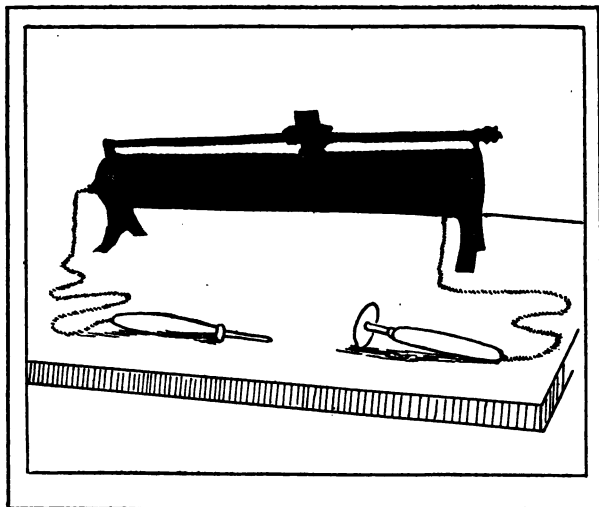


FIG. 18.—Biodynamometer.

latter subserve our purpose. To paraphrase the law of OHM, the strength of human energy varies directly as the biodynamic force and inversely as the resistance. The greater the resistance, the smaller is the quantity of energy which a given biodynamic force will produce. The latter force is measured in Ohms or fractions of an Ohm.

The rheostat which the writer employs for this purpose (Fig. 18) is neologized for the convenience of future reference as "BIODYNAMOMETER."

It is wound to carry 100 milliamperes with a voltage

of 20. The scale is marked in one-twenty-fifths of an Ohm to one Ohm and then up to 1000 Ohms.

To secure uniform readings in my physiodiagnostic methods, the conducting insulated flexible cords (copper wire), are 80cm. in length. The electrodes are made of aluminum; the one affixed to the stomach region is $4\frac{1}{2}$ inches in circumference whereas the other for receiving energy is pointed to permit exact localization (Fig. 19). Use the latter only as a distal electrode (p. 125).

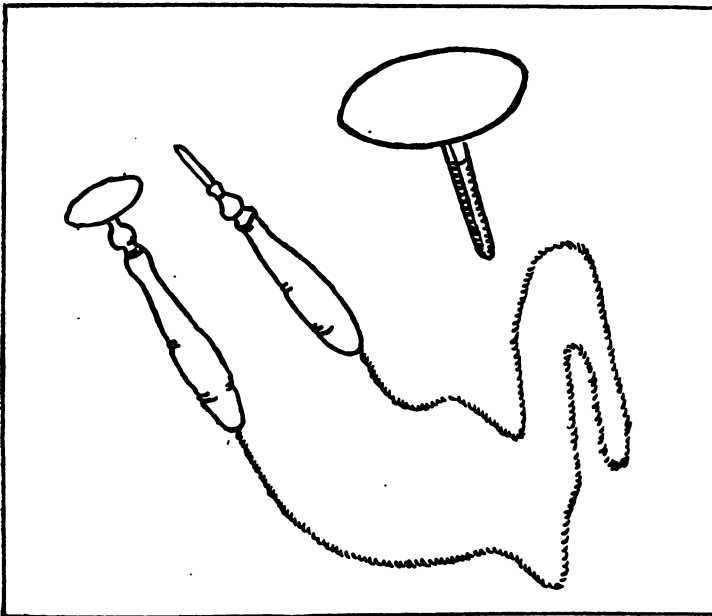


FIG. 19.—Distal and proximal electrodes. The latter must not be rod-shaped (p. 125). The large electrode is for receiving energy from extensive areas (supposititious tuberculous lung) and if energy is conveyed, the lesion may be localized by a smaller electrode.

The method of using the biodynamometer is essentially as follows:—Let us assume that the biodynamic force

sought, is from a carcinoma. Place the pointed electrode over the site of the neoplasm and the other electrode at the usual area near the stomach. Note that at zero the dulness of the stomach is pronounced, then gradually interpose more and more resistance until the stomach dulness on percussion disappears. When the latter point is attained, the scale on the instrument will indicate the Ohmic resistance of the growth.

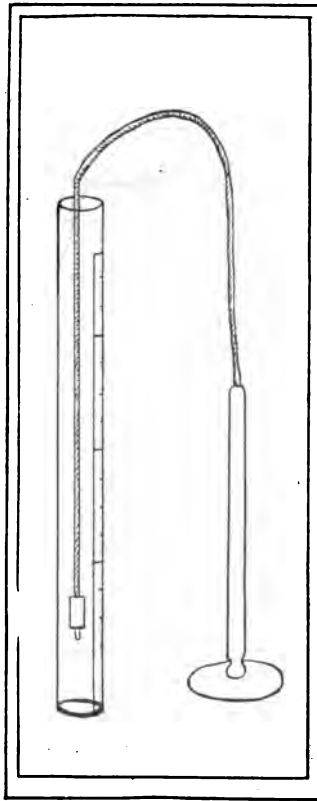


FIG. 20.—Calibrated glass tube for measuring energy. The open end of the tube is fixed to the energy source and the distal metallic tip (aluminum) is gradually withdrawn during execution of percussion. The electrode is fixed to the stomach region.

After this manner one may gauge the progress of the growth. As a rule, the Ohmic resistance diminishes with amelioration of the condition. A crude method for measuring the intensity of energy is based on the principle that the further away the end of the conducting cord is from the SOURCE OF ENERGY eliciting stomach dulness, the greater is the energy discharge.

For this purpose a calibrated glass tube (Fig. 20) is used. The conducting cord passes through the latter and is gradually withdrawn until the energy discharge is no longer able to evoke stomach dulness. Thus, in the average male, dulness of the stomach produced by energy derived from the left psychomotor region is rarely elicited if the conducting cord is further distant than one-quarter inch from the region in question.

VIBRATION RATE.—The writer has specified the energy of the human organism as ANTHROPODYNAMIC because it is a specific electronic energy. A nerve impulse resulting from the action of a stimulus liberates energy stored within protoplasm. Heretofore, the only evidence of the liberation of energy was the electrical change; the wave of negativity. This energy was assumed to be electrical but this was supposedly disproved by the measurement of its velocity.

The new philosophy regards an electric current as nought else but a series of electrons "handed along" from one atom to another through the conductor. The current flow is from a place of high to a place of low potential.

Velocity is a question of the character of the conducting medium (page 6). A conductor is a substance containing electrons which are free to move, whereas in non-conductors, the electrons are fixed and unable to follow the impulse of the field.

The writer conceives atomic differentiation as vibration frequencies, and each atom is endowed with a specific rate of vibration. *Colors* are the effect of particular frequencies of vibration and polarities.

All electrons are characterized by the uniformity of vibrations. This is evident when one observes the sharpness of the lines of light making up the spectrum of an element.

These lines develop from the vibrations of electrically charged systems, and if the vibrations of different atoms were not attuned to each other, the spectral lines would be blurred and diffused.

The stomach does not respond (as revealed by dulness) to all degrees of vibration. The vibrations of a vibrating tuning-fork during the stomach can be shown to be endowed with a definite polarity.

The nerves of taste and smell must be endowed with specific electrons which are only attuned to different vibration rates, hence the differentiation of taste and smell like the differentiation of color.

The energy evolved from the human is as characteristic of the human as the energy evolved from the lower animals is distinctive for the lower animals. Furthermore, one man differs from another man only in the sense that his electrons show varying rates of vibration. The diamond, lampblack and charcoal, are all practically identical in composition. Oil of roses and coal gas have the identical composition (4 atoms of hydrogen and 4 atoms of carbon), yet the mephitic odor of the one, and the delightful odor of the other, is merely a question of rate-vibration.

It is strange, but nevertheless true that, the attunement of the organism shows no apparent physiologic rhythmicity. Each atom of our organism is endowed with a definite

vibration rate, and the author believes he can demonstrate what Baraduc anticipated (page 11).

Just as there is a "PERIODIC LAW" with reference to the periodicity of the atoms of the elements, so there is a law with relation to morbid processes. The periodic law, emphasizes the relationship of atoms and periodicity of properties, and shows that, family relationships of atoms is as assured as are the organisms of the biologist.

In executing our physico-clinical methods, we must not only determine the energy evolved in a quantitative direction but we must also determine its vibration rate.

The essential factor embraced in my investigations concerns the ATOM IN VIBRATION. The fact has been definitely established by physicists, that when a moving electric charge is accelerated or RETARDED in any way, a wave of ELECTROMAGNETIC DISTURBANCE radiates out through the surrounding space. Such pulses are given out when cathode rays strike the solid anticathode, and are called X-rays.

If the charge is not suddenly arrested but is permitted to oscillate about a mean position, a series of electromagnetic waves move out from the vibrating electron.

If white light is passed through sodium vapor, the spectroscope shows two dark lines across the ordinary colored spectrum. This effect has been likened to a form of resonance. The electrons of the sodium atom when excited, yield light of the frequency corresponding to the two sodium lines because it is tuned to this frequency, and it vibrates if oscillations of this frequency fall upon it. By so doing, it abstracts the energy of the radiation in tune with itself, whereas light of frequency remote from this, passes on practically unaffected.

VIBRODYNAMOMETRY.—As already observed, when a moving electric charge is suddenly arrested, electromagnetic waves move out from the vibrating electrons. The

latter is determined by aid of the biodynamometer (page 44). The point on the scale of the instrument indicating this electromagnetic disturbance I have specified for convenience VIBRATION RATE.

The instrument is employed after the manner indicated in determining the potentiality of human energy (page 44).

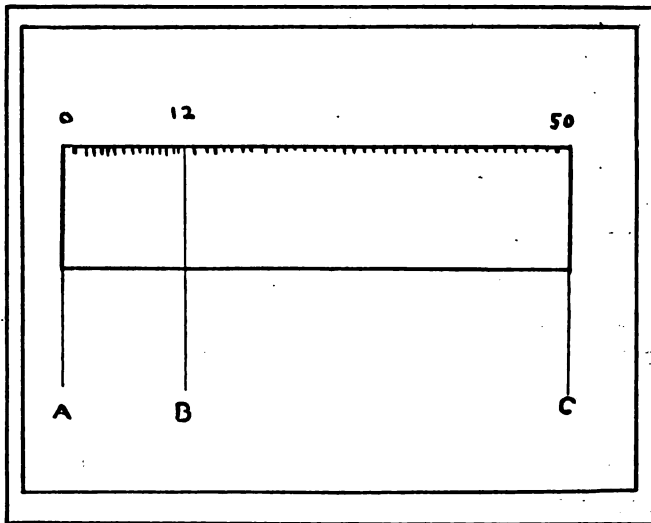


Fig. 21. Carcinomatous electronic reaction. A to B, stomach reflex; B to C, on stomach reflex; C, sudden reappearance of stomach reflex (vibration rate).

Accepting the stomach reflex as an index and employing a carcinoma as a test object, we note the following phases (Fig. 21):

1. Dulness of the stomach from 0 to 12 Ohms on scale.
2. Non-dulling energy from 12 to 50 Ohms.
3. Sudden reappearance of stomach dulness at 50 Ohms.

The latter point indicates the vibration rate. Beyond 50, the dulness evanesces. It is important to remember

that when the index on the scale is GRADUALLY moved from 12 to 50, there may be intermediate grades of dulness, but they are of short duration and not permanent as is the case when 50 is attained. Therefore, the point selected on the scale for determining vibration rate is when the stomach dulness has attained its maximum intensity and is permanent during the energy flow.

The vibration rate in health is practically constant and each individual has his own rate of vibration, so that after the lapse of months, an individual can be identified with almost the same accuracy as in the Bertillon system of anthropometry.

In addition to the foregoing, each organ has its specific rate of vibration which is equally specific for the individual (page 53). The following vibratory rates in normal individuals were practically the same during a period of six months. The rate from the male was taken with energy from the tips of the fingers of the LEFT hand approximating the electrode; with the female, the finger tips of the RIGHT hand were used:

1.	Male, Vibrating Rate at 400 Ohms			
2.	" " " " " "	525	"	
3.	" " " " " "	460	"	
4.	" " " " " "	320	"	
5.	Female, " " " "	350	"	
6.	" " " " " "	300	"	
7.	" " " " " "	316	"	

In a psychasthenic, the rate was at 1125 Ohms but when his condition was ameliorated it was reduced to 825 Ohms. The rate however, fluctuated considerably insomuch as his condition varied from time to time.

As already observed each organ has its specific vibratory rate.

Whereas the potentiality of energy may vary in health, the rate is relatively constant. Thus, in a male when the potentiality of energy from the left psychomotor region (Fig. 22) was determined, it was found to be $\frac{2}{25}$ of an

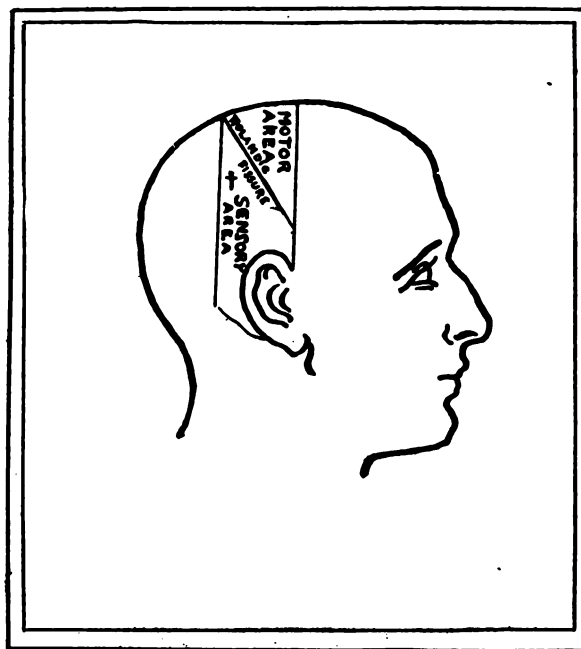


Fig. 22. Localization of the psychomotor area. Determined approximately by two perpendicular lines; from depression in front of external meatus and from the posterior border of the mastoid process at its root; †, most prominent part of parietal eminence. The area in question is approximately 4x6 cm. (electronic reaction).

Ohm, but during the time he was engaged in solving a problem, the potentiality was raised to 2 Ohms; the vibrating rate however being uninfluenced.

The following measurements from the left, in the male, and the right psychomotor region in the female, may serve as a nucleus for future research work:

- | | | | | | |
|-----|------------------------------------|-------|-----------|---|--|
| 1. | Female, Average intellectuality... | 4/25 | of an Ohm | | |
| 2. | Male, Low grade of intelligence. | 2/25 | " | " | |
| 3. | " Pronounced intellectuality | 4 | Ohms | | |
| 4. | " Intelligent..... | 14/25 | of an Ohm | | |
| 5. | " Physician..... | 1 | Ohm | | |
| 6. | " " | 14/25 | " | " | |
| 7. | " " | 17/25 | " | " | |
| 8. | Female, Intelligent..... | 16/25 | " | " | |
| 9. | " Child..... | 3/25 | " | " | |
| 10. | " Intelligent..... | 11/25 | " | " | |

Psychasthenics as a rule, show high potentiality and when rested or bromidized, the potentiality is very much reduced. Intellectuals after brain rest show a like reduction.

CHAPTER IV.

PHYSICS AND PHYSIOLOGY OF HUMAN ENERGY.

VOLTAGE.—In the subsequent observations the stomach reflex was employed as an index of human energy. My results show that, the emission of ionizing radiation is an inherent property of all things in nature. This conclusion could not have been attained were it not for the sensitivity of the stomach reflex. The sense in which emission radiation is employed by the writer, is not identified with radioactivity, if by the latter, reference is made to ray emission associated with atomic decomposition. The atom is constantly in a state of dissolution into helium and supposedly hydrogen.

When Voltage and frequency are high, it is unnecessary to make a closed circuit to obtain a flowing current.

In the latter instance contact with one terminal suffices. In consequence of the high Voltage, and great periodicity of oscillatory currents, a metallic conducting circuit is not required.

The denser a current, the greater is its stimulating effect. Unipolar action is recognized by the physiologist. In the stimulation of a preparation, the complete circuit of an electric current is necessary.

Exceptionally, one wire of a secondary coil leading to the nerve is sufficient to excite it when the primary circuit is opened owing to the charge generated in the secondary coil.

It will be noted in our preceding investigations that, unipolar conduction was employed in transmitting human

energy and that, the only other requisite was grounding (page 35).

Human energy is of high frequency and Voltage. If it were not so, its action could not be exhibited through dry air; one of the best known insulators.

The conductivity of this energy is most pronounced with aluminum wire although the latter, as a conductor for electricity, is but 64% of that of copper.

It is generally believed that the POLES of cells of batteries (Galvanic or storage) do not emit waves expanding in ether. This is supposed to be only the prerogative of high pressure electrostatic machines, condensers, induction coils etc.

The foregoing is incorrect. One may obtain a positive discharge from the positive, and a negative discharge, from the negative pole if the stomach reflex is used as an index. The Voltage compared with human energy is low.

Thus, a dry cell of 1 Volt elicits a reflex from the negative terminal at a distance not greater than 1 inch, whereas a negative discharge from an average individual, will evoke the reflex at a distance of 70 inches.

The energy from either pole of a bar-magnet may be conducted through a wire as evidenced by the stomach reflex; from the *N* pole a positive energy is transmitted, and from the *S* pole, a negative energy.

ENERGY OUTPUT.—The stomach reflex may be elicited with all the fingers extended (Fig. 48 and page 112); the discharge emanating from the finger tips.

Human, like all energy traversing space, passes out of the body in straight lines and is not deflected by a magnet.

Emission radiations are streams of electrified particles or merely pulses or vibrations of the ether. In the former instance they must be deflected by the approach of a magnet; in the latter instance, not necessarily so.

Differentiation of electronic energy is now possible by aid of the stomach reflex. EMISSION RADIATIONS WILL EVOKE THE REFLEX THROUGH AN INSULATOR BUT ETHERIC VIBRATIONS WILL NOT.

This cannot be attributed to potentiality. Magnetic flux relatively more potent than radium, is intercepted by an insulating substance.

If the fingers discharging energy are wet, no energy is discharged, and dry hands discharge more energy than moist hands. Similarly, less energy is discharged in humid than in dry air. If an individual discharging little or no energy from the hands, takes an electrode for several minutes in either hand from a moderately strong Galvanic current and then directs his fingers at a distance of many feet from another subject, he can elicit in the latter, the stomach reflex. This ability to discharge energy will continue for several minutes. A like effect may be noted with the energy from a magnet or the energy from an electric lamp directed on any part of the body for several minutes. The same action may be noted by aid of a very sensitive Galvanometer.

The energy output of an individual may be accurately gauged (page 60) and is modified by many factors (page 59).

During cerebation (thinking), the energy output is increased and stomach dulness by the extended fingers may be elicited at enormous distances.

The effects of *anesthetics* on energy may be easily determined. A few inhalations of ether or chloroform will inhibit the output of energy, but if to the ether or chloroform, oil of orange is added, there is little or no effect on the energy output.

Gwathmey, has shown that oil of orange* added to ether, produces anesthesia with less discomfort, quicker results, no preliminary excitement, rapid recovery from effects with neither nausea nor vomiting and with half the quantity of ether.

Dr. George Jarvis, utilizing the stomach reflex has rationalized the *Gwathmey Method*.

ANIMAL EXPERIMENTATION.—Several prominent clinicians have contended that, the demonstration of the stomach and other reflexes by animal experimentation, is necessary before the reflexes can be accepted as scientific facts.

“CLINICAL PHYSIOLOGY” has been neologized by the author to emphasize the fact that, “The proper study of mankind is man,” and to protest against the tendency to substitute the guinea-pig for a human, and the laboratory for the bedside. Pathology, is founded on physiology, and pathology, is nought else but the physiology of the sick. Instead of regarding morbid tissue change as a primary requisite of disease, it is in reality secondary to physiology in a state of disequilibrium. Anatomic changes are sequential to a disease, and not the disease itself.

Therapeutic nihilism owed its conception to the pathologist, who sought to identify every disease with definite anatomic changes, and his coadjutor, the clinician, studied disease only in relation to these anatomic conditions.

The same egregious error is perpetrated by the therapist who is responsible for the creation of a toxicotherapy.

The author was constrained to discontinue his experimentation on animals for various reasons.

The stomach reflex is dependent on visceral tone (page 27) which is the resultant of not one, but a summation of

*Gwathmey, has informed me that he prefers the bitter, to combat any possible nauseating action from the sweet oil.

peripheral sensory stimuli, and that the continuity of tone may be blocked by annihilation of a single stimulus. Therefore, the use of anesthetics (local or general) will inhibit the reflexes.

Vivisection under pain creates the *sympathicotropic action* of adrenalin, which by depressing the vagus annihilates the stomach reflex.

In his elaboration of the "KINETIC THEORY," Crile, found that electric fish could not discharge their electricity when under anesthesia. In deep morphia narcosis and anesthesia, the production of fever is hindered owing to the depressing influence on the brain cells, thus causing diminished activity. These conclusions were largely based on histological studies of the brain. The cells are classified as hyperchromatic, active, fatigued and exhausted (stages only). The experimental animals were subjected to exertion, fear, traumatism etc. The characteristic condition was hyperchromatism which disappeared in a few hours, but if the stimulus were extreme, hyperchromatism was succeeded by the fatigue and finally exhausted stage.

My investigations with the exsected stomach were negative. Smooth muscle cut out of the body passes at once into a state of tonic contraction lasting for hours. Like negative results followed investigations with the musculature in warm oxygenized blood. Physiologists who discredit observations without the domain of the laboratory forget that, disease is practically an experiment of nature under abnormal conditions. Physiologic laboratory experiments are conducted under like adverse conditions. Pavloff, contends that the physician gives a more correct verdict concerning physiologic processes than the physiologist.

Dr. George C. Jarvis, whose accuracy as an observer, and skill as a surgeon are conceded, authorizes me to say that, in his research work embracing a new departure in

surgery, the publication of which is anticipated, that in anesthetized subjects AT THE OPERATING TABLE, THE VISCERAL REFLEXES MAY BE ELICITED WITH A STRONG SINUSOIDAL CURRENT (one electrode at the sacrum, and the other, over definite vertebral regions as described in "*Spondylotherapy*"). The stomach reflex is elicited (contraction of the organ) to approximately one-fourth of its original volume. Associated with the reflex is a marked anemia of the stomach. The *gall-bladder reflex of contraction* is likewise evocable. The subjects were under narcosis with nitrous-oxid and oxygen, and in addition, in some instances, even scopolamin and morphin were used.

When spinal anesthesia was alone employed, although visceral reflexes could be elicited, they were not as accentuated as under narcosis.

POSITION AND POSTURE.—Brief reference has already been made (page 27) to the varying tonicity of the viscera with relation to posture and position.

Energy is appropriated from the physical forces which make up the environment of man. When a subject without physical effort places himself in the magnetic meridian, there is a momentary inhibition of the pulse. There are also slight variations in blood-pressure depending on the position of the subject with relation to the points of the compass. With the subject in the magnetic meridian, the stomach dulls of its own accord, and the energy in the magnetic meridian (facing the North or South) is NEUTRAL. Another subject standing in the magnetic meridian (male or female) can dull the stomach of another subject by the extension of either hand. Thus no distinct type of polarity is displayed; the subject discharging a neutral energy. The latter fact is of great importance in determining sexual polarity (page 110).

By aid of the biodynamometer (Fig. 44) and connecting one electrode with the finger tips of the right hand, the following output of energy was estimated:

1.	Standing toward the NORTH	.....	1/25	of an Ohm		
2.	“	“	“	EAST	.....	2/25 “ “
3.	“	“	“	WEST	.....	5/25 “ “
4.	“	in	“	MAGNETIC		
				MERIDIAN	8/25	“ “

SUBJECT IN THE RECUMBENT POSTURE

1.	Head toward the NORTH	.....	1/25	“	“
2.	Feet	“	“	NORTH	..... 3/25 “ “
3.	“	“	“	WEST	..... 4/25 “ “

Standing and facing the North, there is the least, and in the Magnetic Meridian, there is the greatest energy discharge.

In the RECUMBENT POSTURE with the head to the NORTH, the energy output is at its minimum. The moon and sun augment visceral tonicity. When the lunar or solar rays fall directly on the subject irrespective of position, the stomach reflex is elicited at once and maintained during exposure, and the energy is of the neutral variety.

The sun as far as human knowledge extends is an inexhaustible source of physical energy, which pours upon our earth, and maintains the activity of everything which moves upon the globe.

All forms of mechanical movement are a transformation of the heat of the sun.

THE PHYSICS OF THOUGHT.—Many literary men develop a sort of “work fever” before the brain can yield its best work. Thus, the brain condition of the intellectual laborer is somewhat analogous to that occurring in fever. A little fever increases the readiness of the tongue, and makes the imagination more fertile. *Light* as an agent in hastening

chemical change is everywhere witnessed in nature. Some writers work better in proportion as the heat and light are more intense, and many cannot think well in the dark.

The author believes he was one of the pioneers* in establishing the therapeutic value of the solar rays at a time when Finsen was gathering evidence which later startled the scientific world.

While the author at that time recognized the merits of the solar rays, he was also cognizant of the injurious effects. The energy output is diminished in the dark and augmented when the body is subjected to the influence of intense light or the solar rays.

Thus, energy from a subject (male) from the finger tips of the left hand shows an output in the DARK of $2/25$ of an Ohm; standing in the SUN, the same subject discharges energy equal to $8/25$ of an Ohm.

From the right psychomotor region of a subject (female), the energy output in the DARK is $1/25$ of an Ohm; in the SUN $17/25$ of an Ohm. The foregoing data suggest the pathogeny of Tropical Neurasthenia.

CONDUCTION OF ENERGY.—Insulated aluminum wire is the most effective material for conducting human energy, and for this reason aluminic electrodes are employed (Fig. 19).

THE FINGERS MUST NOT BE IN CONTACT WITH THE NON-INSULATED METAL; otherwise a short circuit of the energy current will ensue, and no stomach reflex can be elicited (Fig. 16).

Bodies like glass, porcelain, oils, wax, vulcanite, etc., which do not permit electricity to escape as soon as it is developed are called non-conductors, insulators or dielec-

*The author's contribution was published in March, 1899, and that of Finsen, September, 1899.

trics (page 124). These bodies are likewise non-conductors for normal human energy.

Dry air at atmospheric pressure is almost a perfect insulator of electricity, but this statement does not apply to human energy (page 55).

Energy from PATHOLOGICAL SOURCES passes through non-insulating material; a fact of importance in differential diagnosis (page 124).

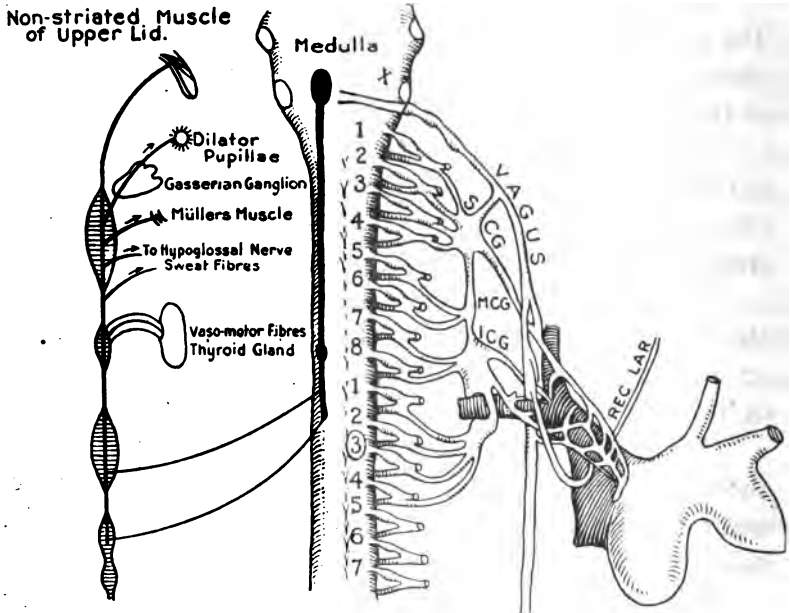


Fig. 23. Diagram of course of oculopupillary fibers of the cervical sympathetic. The pupil-dilating fibres arise from the pupil-dilating center in the medulla, and descending in the lateral column of the cord they emerge in the anterior roots of the first and second thoracic segments. Entering the inferior cervical ganglion by white rami communicantes, they ascend in the cervical sympathetic to the Gasserian ganglion and pass to the orbit along the ophthalmic division of the trigeminus. The other half of the diagram shows the origin and course of the cardiac nerves. The stimulus applied at the seventh cervical spine corresponds to the third dorsal segment of cord and approximately to the 2nd and 3rd dorsal nerves.

Whereas the energy of light rays sufficient to elicit the stomach reflex do not traverse glass, yet a large lens in front of the stomach EXACTLY IN FOCUS will invoke the reflex in question.

DISCHARGE OF ENERGY WITHOUT CONDUCTORS.—There are many individuals notably temperamental ones whose mere presence will evoke the stomach reflex. Let such a one, if a male, point his left fingers at the region of the stomach of the subject, and the stomach will immediately dull. A temperamental female will achieve the same object with her extended right fingers.

It has been shown *elsewhere* that, stimulation of the spinal centers (which are related to definite spinous processes), elicits reflexes which may be executed, and demonstrated with the same certainty in the living human, as is done by the laboratory vivisectionist. Thus, stimulation of the seventh cervical spine will inhibit the pulse and diminish the area of heart. This temporary inhibition of the heart beat is also determinable by auscultation. The course of the energy conduction to the vagus by stimulation of the 7th cervical spine is shown in (Fig. 23).

Temperamental individuals may achieve the same object (on a subject) by placing the finger tips at the 7th cervical spine. Some individuals with a great output of energy may attain this phenomenon when the fingers are several feet distant from the spine in question (page 86). The foregoing is best observed in a subject with a feeble pulse.

Sphygmography and tracings direct from a sphygmomanometer (Fig. 24), likewise show the effects of human energy.

When a subject's heart is viewed with a fluoroscope during the time the X-rays traverse the chest and energy from the fingers is permitted to act on the 7th cervical

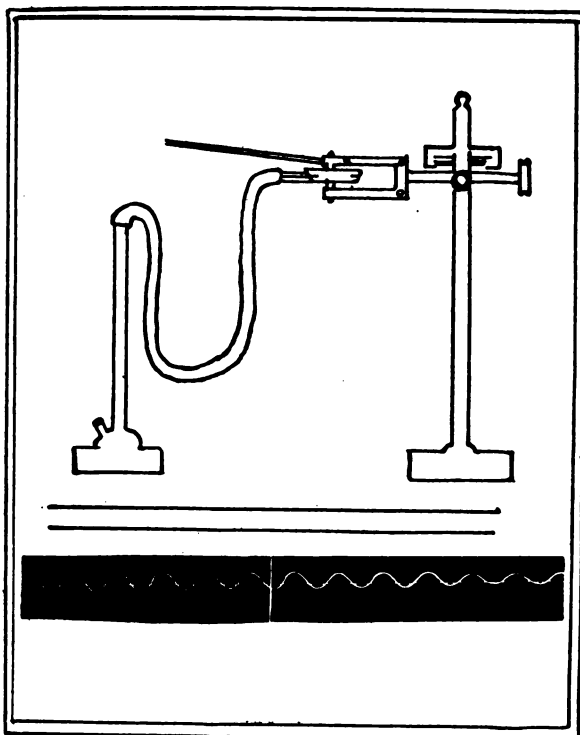


Fig. 24. Tambour connected directly with a sphygmomanometer for sphygmomanograms. The tracing (read from right to left) demonstrates the augmented amplitude of the pulse when energy conveyed to the epigastrium (p. 277) causes reflex vagus stimulation.

spine, the borders of the heart recede during systole and diastole of the latter (*heart reflex of Abrams*).

If the fingers impinge on the area between the 3rd and 4th dorsal spines, there ensues an immediate increase in the cardiac diameter.*

Another clinico-physiologic phenomenon observable by skiascopy is the opening of the pylorus (*Pyloric*

*These heart reflexes are discussed *elsewhere* in detail.

reflex of dilatation) when the fingers are in apposition with the 5th dorsal spine.

Here, the appearance of the stomach can be likened to the flow of water from an inverted pitcher when the bismuth is pouring into the duodenum.

Dr. Patrick S. O'Donnell, an expert Roentgenoscopist, observes that after the ingestion of the conventional bismuth meal, it takes approximately one hour and fifteen minutes for the stomach to void its contents, whereas after stimulation of the 5th dorsal spine, the stomach voids the bismuth in $1\frac{1}{2}$ minutes.

Lebon and Aubourg, recently presented before the *Société de Radiologie Médicale de Paris* comparative radiographs showing modifications of the large intestine, after stimulation of different vertebral spines by the author's methods.

The author has shown in numerous publications that if any form of energy is applied at the 7th cervical spine, the lungs dilate whereas if a like energy is brought to bear at a point between the 3rd and 4th dorsal spines (excitation of the depressor nerve), the lungs contract. The position of the lower lung border posteriorly is first determined by percussion. Energy discharged from the finger tips at the 7th cervical spine will show a descent of the lung border by percussion. Energy from the finger tips directed between the 3rd and 4th dorsal spines will show on percussion a temporary ascent of the lung border.

PHYSIOLOGICAL PHYSICS OF PSYCHIC ENERGY.—It is difficult to conceive the mind as a simple thinking organ, on the contrary, it is psychodynamic and must be regarded as a form of energy, like heat, light and electricity. This dynamogenic or energy producing power of mind is capable of demonstration.

On page 12, action currents were discussed. Psychic action currents conform to like laws. The action current is associated with the process of excitation and is produced by all kinds of stimuli but varies in strength with the strength of stimulation.

My investigations concerning the action of stimuli have been discussed *elsewhere*.

Thought yields an energy, the presence of which can be exhibited by the stomach reflex. This energy is not revealed if the brain functionates in its entirety unless both psychomotor regions are covered with a piece of red coloring material (page 69). Without this color, it is impossible to evoke the visceral reflexes.

With the first subject in one room with closed doors, and the other subject in another room, the energy provoked by thought may be transmitted from the latter to the former over a distance of forty or more feet as revealed by stomach dulness in the first subject. Psychic energy passes through metal and all other media thus far tried.

Anger and emotions yield an energy which may be transmitted over a distance of eighty or more feet.

The potentiality of psychic energy is determinable by the intensity and duration of the stomach dulness and the distance of the subject from the person engaged in thought. The position of the recipient with reference to the person occupied in thought is of no moment, but the recipient must be standing to elicit the reaction of stomach dulness.

In my experiments, the person engaged in thought was instructed to perform examples in mental arithmetic.

The Cartesian conception that matter cannot act where it is not, was overthrown by Newton, in his law of universal gravitation.

If in my experiments I have utilized the stomach muscle

as an index in revealing energy and its transmission, conventionalism has not been disregarded.

Frogs' legs are now employed for recording wireless messages (page 19). Psychists have accepted the contracting muscles of the frog as the first definite index of thought transference. Our nerves and muscles are more complex and responsive than those of a frog. The influence of color on psychic energy is noted on this page.

COLOR.—The therapeutic value of colors (*chromotherapy*) has been acknowledged on empirical lines.

Percussion demonstrates that in the light, the organs show more tonicity and better definition (page 103) than in the dark. Yellow augments the tonicity of all the organs, whereas other colors diminish the tonicity of the organs.

To relax the organs and thus secure a "VISCERAL REST CURE" green, violet or blue may be used, and yellow when a tonic effect is desired.

For diagnostic purposes, I employ a screen (Fig. 25) which permits different colored sheets of gelatine to filter light on to the body of the subject.

Yellow material on the subject used for eliciting the stomach reflex must be avoided as the color itself will produce the reflex in question.

Color influences the transmission of *psychic energy* as can be noted when the person engaged in thought holds large colored sheets of gelatine in front of the head. Green and violet, obstruct the passage of the energy, whereas blue and notably yellow intensify the action of the energy as revealed by the intensity and duration of the stomach dulness. Light acting on the head through a yellow medium minimizes psychic activity.

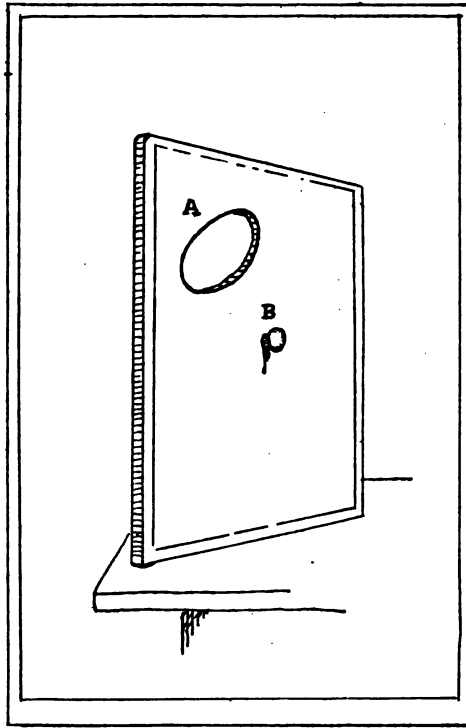


Fig. 25. Screen for chromo-diagnosis. B, knob for shifting the colors at A.

Some writers work better in proportion as the heat and light are more intense. Some cannot think well in the dark. Red excites some individuals and most animals. Witness the Matador as he excites the infuriated bull to charge by manipulations of his red cloth.

There is reason for the foregoing. Electric light thrown on one side of the head stimulates like a blow and excites the stomach to contract. Directed on the center of the head, it is negative. Light passed through a red medium covering the head is negative when directed on one side of the head but produces a powerful contraction when directed on the center of the head.

This exciting effect on protoplasm is the same whether resident in muscle or brain.

Psychic energy may be transmitted to another (as revealed by stomach dulness), if during thought, the head is covered (covering other parts does not suffice) with some red material or, if the latter is held in front of the stomach of the second subject.

This experiment dispenses with the necessity of *demagnetizing* one side of the head. Furthermore, the stomach of the patient engaged in thought may be used provided any red material is thrown over the head or held near the stomach-region. If red paper or any other red material is thrown over the head of an intelligent dog, the stomach of a subject in proximity to the animal shows dulness, and the latter disappears when the colored material is removed. The energy thus transmitted differs in no respect from the psychic energy of the human as far as its physiologic effect (visceral reflexes) is concerned.

Red yields a neutralizing energy. Thus the polarity of the two hemispheres is neutralized, and the stomach reflex is evocable. Nullification of aural polarity by a strip of aluminum across the psychomotor regions (page 108) of the subject on whom percussion is executed will likewise evoke the reflex by another engaged in thought. The same maneuver on the person engaged in thought prevents the exit of psychical energy (page 109). *Elsewhere*, it has been shown that *colors are capable of differentiation by rate of vibration and polarity.*

The foregoing experiments may explain some of the phenomena of telepathy.* Thought transference is a reality despite the fact that the most heretofore known about it was practically nothing, and we were not sure of that.

*Appendix, Note V.

The proceedings of the "Society for Psychological Research" reveal many pertinent paradigms which demonstrate that, in man there is a faculty which permits him *at times* to communicate directly with the consciousness of another individual.

I have purposely italicized "at times" for the reason that my investigations show that, the energy is only propagated during the time one side of the brain is temporarily incapacitated unless further experiments show that it is possible for an individual to inhibit voluntarily one side of the brain (pages 69, 233, 250).

Cerebration does not evoke visceral reflexes; the positive energy from one hemisphere neutralizes the negative energy from the other brain half. This is equivalent to the energy discharge from the finger tips (page 112). One hand may evoke the stomach reflex but when the other hand is simultaneously extended, no dulness ensues.

CONDENSATION OF HUMAN ENERGY.—For this purpose the best results are attained by using a Leyden Jar, although other condensers are more or less efficient. In any Leyden Jar one may store normal or pathologic human energy for about one hour or longer, in jars specially constructed to minimize leakage. Not long ago I saw a patient remote from my city with a supposititious carcinoma of the breast. The energy from this growth was condensed in a specially constructed jar, and *eight hours* later, tests with the condensed energy demonstrated the electronic reactions of a cancer which were later corroborated by histological examination.

Leakage is insignificant from a paper condenser. Charging the latter with carcinomatous energy for 5 minutes, it shows a potentiality of $11\frac{1}{2}$ Ohms, and after 24 hours, 9 Ohms.

Leakage is prevented by enveloping the condenser with insulating tape and likewise the wire for receiving energy after charging. This wire is primarily covered with rubber dam to exclude the entrance of normal energy. The other wire of the condenser is not used, but is covered with insulating tape. In taking the reaction use the rubber covered wire after removal of the tape.

Care must be exercised in discharging the jar, before charging it with a new source of energy.

Employing the stomach reflex as an index, it will be observed that when a male permits the finger tips of his right hand to remain for several minutes in contact with the metal knob, the condensed energy will be positive; from his left finger tips negative, and when the finger tips of one hand are placed on the outer coating of tin foil, and the fingers of the other hand on the knob, it will be neutral. The opposite polarity is obtainable in a female excepting when the fingers of both hands are used after the manner indicated, the charge will be likewise neutral.

One may obtain either a positive or negative charge from a bar-magnet or a neutral charge from a hores-shoe magnet.

In testing the polarity of the condensed energy, present the jar to the stomach region by grasping the glass only, or conduct the energy to the stomach from the knob by aid of insulated wire.

ENERGELIAGENIC CENTERS.—Practically every area of the body discharges energy which can be determined by the stomach reflex. Energy discharge conveyed by conducting cords only (Fig. 19) may be of the **DULING** or **NON-DULING** variety (pages 41 and 43).

The centers shown in Figs. 26, 27, 28, refer only to areas from which energy conducted to the stomach region will produce duling energy.

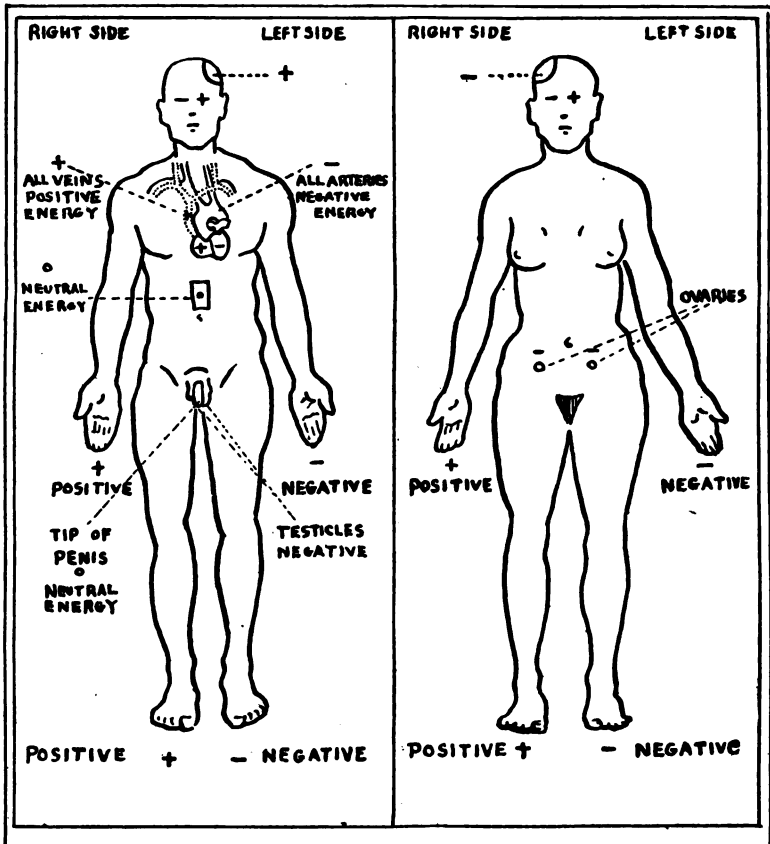


Fig. 26. Normal energiegenic centers in a male.

Fig. 27. Normal energiegenic centers in a female.

Whereas the energy polarity is the same in the sexes from both psychomotor regions (p. m. r.) yet an energy sufficient to DULL THE STOMACH can only be drawn off from the LEFT p. m. r. in the male and from the RIGHT p. m. r. in the female (p. 111). From the right p. m. r. in the male and from the left p. m. r. in the female, the energy polarity is non-duling (p. 43).

The polarity discharge in the sexes was determined by the method shown on page 41. Figures 26, 27, 28, are marked by + (positive), - (negative) and O (neutral)

signs; indicating the polarity of the energy emanating from different body regions. The discharge of duling energy relative to the extremities only occurs at the *tips* of the fingers and toes.

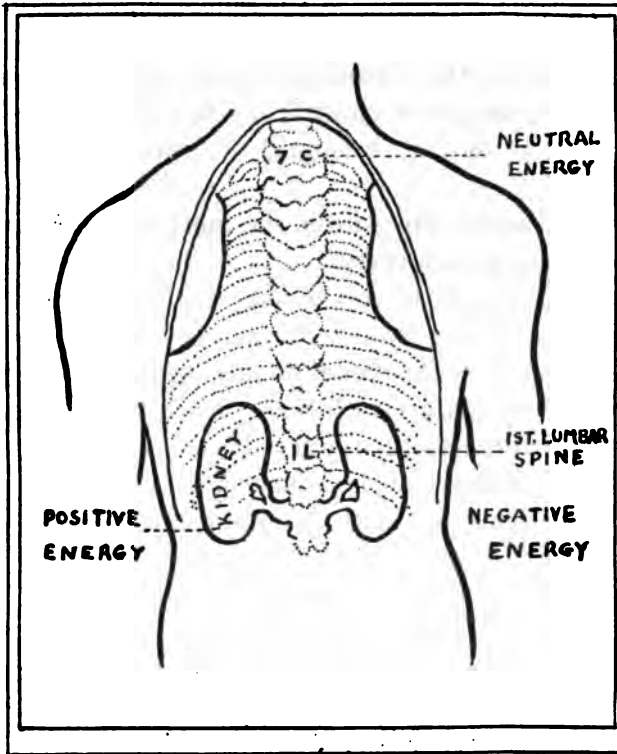


Fig. 28. Normal energiegenic centers in the back common to both sexes.

Common to both sexes, the duling energy is as follows:

1. NEGATIVE (—) discharge from the arteries.
2. POSITIVE (+) discharge from the veins.
3. A NEUTRAL (O) discharge from the 7th cervical spine, and negative (—) discharge from the 1st lumbar spine.
4. NEGATIVE discharge from the left ventricle.

5. POSITIVE discharge from the right ventricle.
6. A POSITIVE discharge from the regions occupied by the kidneys.
7. An EPIGASTRIC AREA discharging neutral energy limited to the central line of the abdomen, and extending upwards to a distance of about 5 cm. above the navel.

From any of the foregoing centers, one may conduct the energy by means of an ordinary flexible insulated cord (approximately 80 cm. in length) of copper, or aluminum wire.

Insulated aluminum wire is the most effective material for conducting human energy.

The metal tips of the conducting wire in contact with the fingers must be insulated. Placing one tip of the cord (which must not be insulated) to any center of energy and the other tip in contact with the stomach-region or several inches away (if the energy conveyed is of sufficient potency), an immediate dulness of the stomach is elicited, and by aid of the bar-magnet one may determine the polarity of the energy during the flow of the latter.

Other visceral reflexes are similarly elicited.

POLARITY OF HUMAN RADIOACTIVITY.—Irrespective of the source of the energy a differentiation of polarity is possible;

SHELLAC permits only the positive rays to pass;

VULCANITE permits only the negative rays to pass;

LEAD permits only the neutral rays to pass.

Refer to **HYPERMOTILITY** of the stomach (p. 40). This may often be obviated by concussion (Fig. 54) of the 5th dorsal spine (p. 64) which discharges the stomach contents. The latter maneuver will also empty the stomach when necessary (p. 65).

CHAPTER V.

AUXILIARY METHODS FOR DEMONSTRATING HUMAN ENERGY.

VISCERAL TONICITY.—Reference has been made to this subject (pages 27 and 75). Visceral tone may likewise be modified (page 77). Whereas the stomach reflex is cited, other visceral reflexes may be similarly employed.

In **ORGANOTONOMETRY**, Dr. George Starr White (Los Angeles), has perfected a device for translating the tonicity of the viscera into audible tones; the vibrations yielding these tones from the organotonometer change in wave length in proportion to the tension or tonicity of the viscera.

The Organotonometer (Fig. 29) is a tambour made by covering the opening in a wooden hoop itself with a specially prepared parchment and forcibly pressing over all another wooden hoop, which makes the parchment very tense. These hoops are securely fastened to a wooden handle which has a cloth shock absorber fastened to it close to the hoops. The hammer for striking the Organotonometer is made of piano felt glued to a wooden handle.

To vibrate the Organotonometer, the handle is held firmly in one hand, and the shock absorber on it is hit with the felt hammer with a staccato stroke. The tone varies with the tension, substance, and proximity of the neighboring material.

The same observer has constructed a drum (Fig. 29) made of a metal cylinder tightly closed at one end with metal, and at the other end, with the specially prepared parchment so put on that it is air tight and very tense.

In the side of the cylinder is soldered a nipple to which one end of a rubber tube is attached, and a mouth piece is

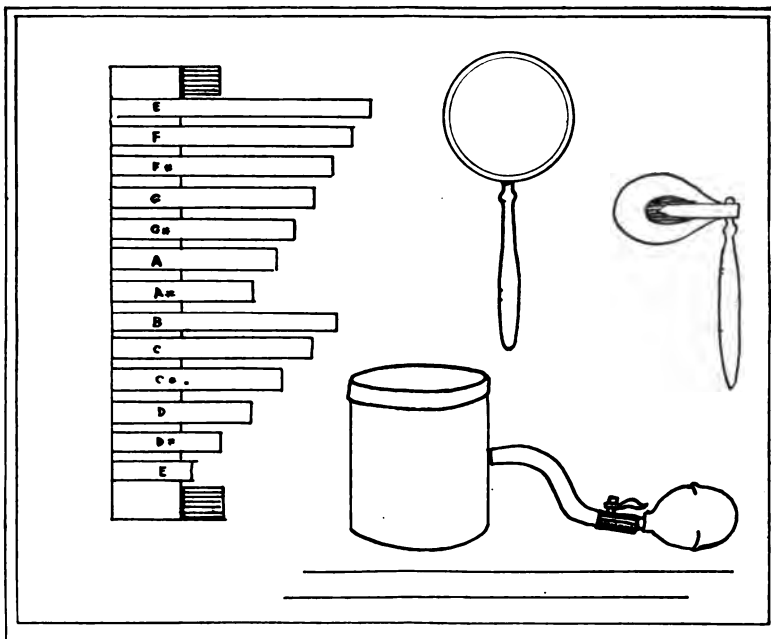


Fig. 29. Figures above and to the right, organotonometer and hammer. Beow, to the right, drum; inflation of latter regulated by a bulb. The figure to the left is a tonometric scale of one octave devised by Dr. Geo. Jarvis. When a percussion sound is elicited this is translated by the tonometric scale (struck by felt hammer) and a record made. Employed for interpreting and confirming sounds elicited by ordinary percussion.

put on the other end. By varying the degree of inflation of the cylinder all nuances of sound may be elicited during the time the organotonometer is used.

The writer has employed for a similar purpose* percussion of the cheek with the mouth closed. By inflation and deflation of the cheek all shades of sound are evocable.

The present standards of recognizing various grades of dulness are indefinite and misleading and militate against progress in percussion. A notable advance in

*Clinical Diagnosis, Abrams.

this direction has been made by Wood²², who studies the pitch of the various percussion notes from a musical standard. It is not unlikely that the recently devised tonoscope may solve this perplexing problem.

Define the left cardiac border by percussion and then note that, when the energy from either pole of a bar-magnet is directed toward the heart region, the left border extends one or more centimeters further to the left, and the cardiac area of dulness is accentuated.

Energy from whatever source will produce like results. In the percussion of the viscera the subject must face toward the WEST (page 77).

Define the lower border of the lung by percussion and note that, when energy from a magnet or the finger tips is directed at the 7th cervical spine, there is an immediate descent of the lung border. Here the effect is secured indirectly by stimulation of the vagus* which furnishes innervation to the viscera.

This biomechanic effect of energy is not available for determining polarity of the energy inasmuch as a neutral energy emanates from the 7th cervical spine. (Fig. 73).

LIVER BORDER.—The right or left lower liver border is frequently utilized by the author for determining the presence and polarity of energy when the stomach reflex is exhausted. As a rule, the liver reflex can be elicited when the stomach reflex is exhausted, but in exceptional instances the loss of both reflexes is synchronous. The *liver reflex* is decidedly less sensitive than the stomach reflex. The polarity of the LEFT lower liver border corresponds to that of the stomach in the male. The polarity of the RIGHT

*The writer demonstrated the presence in the vagus of broncho-constrictor and bronchodilator fibers. This observation was later confirmed by the English physiologists; Dixon and Brodie¹³.

lower liver border has an opposite polarity to that of the stomach and left lower liver border in the male. In the normal female subject, these polarities are reversed. An energy which is positive over the stomach in the male, would be negative over the right liver border.

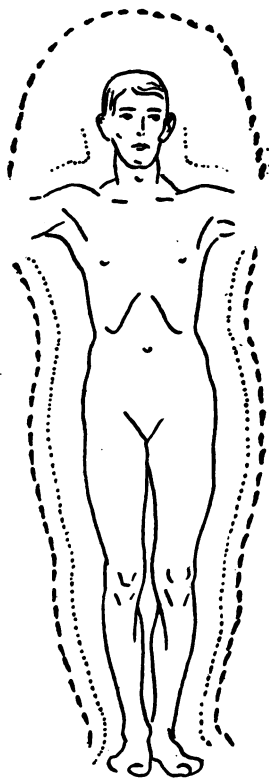


Fig. 30.—Visualized aura (Kilner, "The Human Atmosphere," Rebman Co.) consisting of an inner and outer aura.

Neutral and positive and negative polarities however, would be the same either over the stomach or liver borders in males or females.

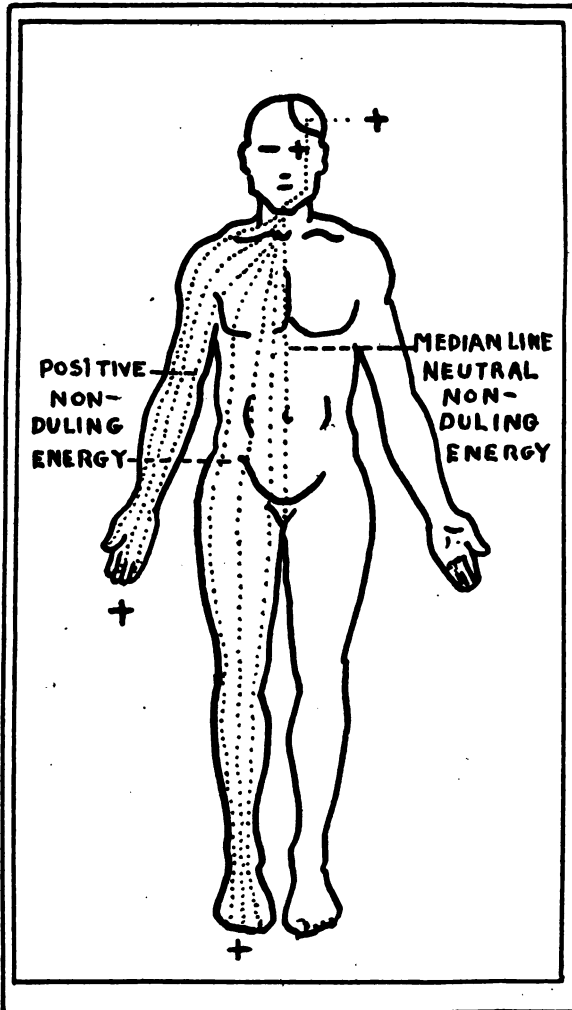


Fig. 31.—Decussation of aural energy in a male subject. Whereas polarity in the sexes from both psychomotor regions is the same (p. 113) the energy producing value is greater (duling energy) in the left brain in the male and the right brain in the female. A like disparity is noted in the bullfinch (p. 198). Changes in sexual polarity (p. 115) are evidently a defensive mechanism to secure a sexuality in the mental (p. 114) and physical unfit.

AURAL ENERGY.—The foregoing reversed polarity is caused as follows: The human organism is an energy producing machine; the extremities representing the poles. Surrounding the body to a variable distance is an aural area of energy (extending in the average male a distance of about 7 cm. from the waist) corresponding to the visualized aura (pages 9 and 78, Fig. 30).

The aural energy yields a positive non-duling energy on the right and a negative duling energy on the left side in the male (Fig. 31) which is reversed in the female. Exactly in the median line of the body from the vertex to the termination of the trunk, the energy is neutral (non-duling).

Note that in the male, the positive energy over the left psychomotor region (non-duling in the female) is transferred to the right side of the body by means of the crossed fibers of the pyramidal tract. Any non-duling energy may be converted into a duling energy by an induction coil (page 275). Here, the induction coil only must be used. Employed in conjunction with a condenser, a non-duling cannot be transformed into a duling energy.

The study of organology in the dissecting room furnishes an inadequate conception of the topographic anatomy of the living viscera.

The liver border is always lower than described. The liver border is immersed in an atmosphere of tympanitic sound and its edge does not exceed 1 cm.

In the norm, one must proceed upward a distance of several centimeters before eliciting a dulness peculiar to the liver and this point is erroneously accepted as the lower border. If however, the liver is endowed with tonicity by energy from any source, the very edge of the liver will yield dulness.

With the patient facing West, energy is conveyed to the liver in the conventional way. Inasmuch as the right border is usually used, place the electrode about 5 cm. to the right of the median line of the abdomen, otherwise the neutral energy above the navel (page 74) may modify the polarity of the extraneous source of energy. The method of procedure corresponds to that employed in eliciting the polarity of energy by aid of the stomach-reflex (*q. v.*).

When the liver border is defined in the usual way by percussion, conveyed energy will yield an area of dullness one or more centimeters lower.

If the latter is dissipated by the positive pole and maintained by the negative pole, the energy is negative; if it is dissipated by both poles it is neutral, and if it persists with both poles, it is positive and negative.

POLAR EXPRESSION OF ENERGY.—The writer first described a clinical entity now known in the literature as, “**SPLANCHNIC NEURASTHENIA***.” The splanchnic nerves are the vasomotors of the abdominal vessels. Clinically, like in laboratory experiments, one may contract or dilate the vessels. The physiologist knows that stimulation of any centripetal nerve augments blood-pressure, and the essential factor in this reflex is vasoconstriction in the splanchnic area. The only exception to the foregoing rule is stimulation of the *depressor nerve* which lowers pressure by dilating the splanchnic vessels.

It may be shown *clinical'y* that, when a stimulus is applied between the third and fourth dorsal spines (stimulation of the depressor), the splanchnic vessels dilate as revealed by areas of abdominal dullness which disappear after forced inspirations. The **ABDOMINAL BRAIN** (pages 81

*Abrams; 4th Edition, 1911, E. B. Treat & Co., New York. This subject is also discussed in the 5th edition of *Spondylotherapy*.

and 249) is not a misnomer; it even fails to portray the autonomy of a nervous system which, in its reflex functions, performs tasks that from a utilitarian viewpoint transcend intelligence. According to the polarity of the energy conveyed by a magnet to the area between the 3rd and 4th dorsal spines, the areas of abdominal dulness vary in position as shown in fig. 32.

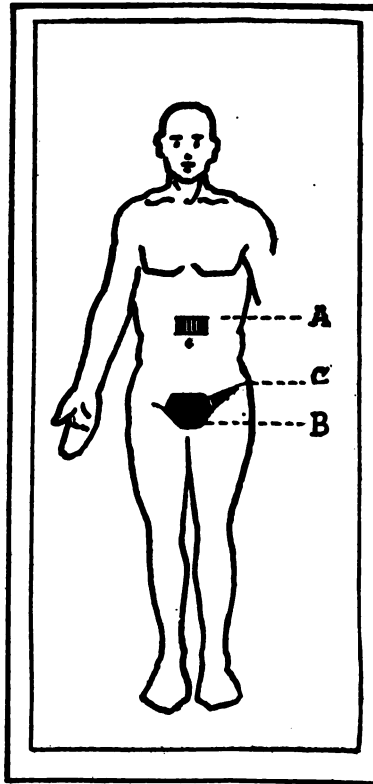


Fig. 32.—Areas of ventral dulness superinduced by magnetic energy. The areas refer to the latter only. The splanchnic expression of specific pathological energy (splanchno-diagnosis) is discussed on page 291. A, neutral energy (horse-shoe magnet); B, positive energy from a bar-magnet; C, area of negative energy superimposed on B.

These splanchnic vasomotor reflexes are only evocable with the subject standing; are alike (site of areas) in the sexes and readily demonstrated by even the maladroit. The subject faces West. About thirty seconds elapse before the dull areas develop during the time energy is conveyed.

PULMONARY VASOMOTOR REFLEX.—Analogous to the foregoing without any evidence of polarity however, is the augmentation in area of the *paravertebral triangles* when energy is conveyed to the tenth dorsal spine and diminution of the same, when energy is conveyed to the 7th cervical spine.

The **RETINAL** vasomotor reflexes are described on page 97.



Fig. 33.—Phonograms: D, dulness and T, tympanitic sound.

PHONOGRAMS.—Percussion is an empirical procedure with limitations best realized by the expert with trained hands and ears. Maladroit percussion yields untrustworthy results (page 28).

Percussion depends on variations in vibrations elicited by blows on different structures, and the recognition of clearness, tympany and dulness, is only a matter of experience not unlike that of the carpenter, who determines the position of a stud in the plastered wall by aid of his hammer, or the gauger striking his mallet upon the cask, ascertains the level of the wine.

To eliminate the personal equation, I have sought to make tracings of the percussion sounds by fixing a cardio-

graphic attachment in proximity to the site of percussion. The cardiograph communicates with a sensitive tambour, and the records are made on a revolving cylinder.



Fig. 34.—Sphygmomanometer with a dial 8 inches in diameter and may be read across a room. This large dial magnifies the oscillations of the needle. The range is 300 mm. The dial is adjustable to any position.

Fig. 33 represents such a tracing by percussion of the stomach before (tympanitic sound), and during the time energy was conveyed to the stomach region (dulness)*.

SPHYGMOMANOMETRY.—It occurred to the author that the heart could be utilized for the clinical recognition of energy by vagus stimulation.

*The author is indebted to Professor J. E. Coover, Department of Psychology, Leland Stanford Junior University, for his valuable aid in making the tracings.

Physiologists concede that when the ventricle is inhibited by MODERATE vagus stimulation, the beats although slower are STRONGER whereas when stimulation is greater, the contractions are diminished in strength and rate (page 277).

My primary efforts in this direction were made with the largest size Faught aneroid barometer. One may employ any other sphygmomanometer with less convenience inasmuch as the fluctuations in the column of mercury must be determined by aid of a lens. The apparatus is applied in the conventional manner for taking blood-pressure. One must note the following:

1. Select an individual with a responsive vagus. This is easily determined by palpating the pulse during the time energy is conveyed by the finger tips to the 7th cervical spine. If there is vagus response a momentary inhibition of the pulse will be noted, specially if a weak pulse is palpated. It must be noted however that when the pulse is weak, the energy response of the ventricle will be correspondingly diminished.

2. After inflation of the arm-piece, gradually deflate until the maximum oscillations of the needle are noted (or mercury, if another instrument is used).

3. The subjects eyes must be closed, and not even the slightest movement must be permitted and breathing must be regular during all observations.

The effects of energy may be noted by deflection of the needle toward a higher point on the scale when stimulation of the vagus is achieved by conveyance of energy to the 7th cervical spine or the epigastrium (page 277) The latter is more effective than the former site (page 277).

The needle will be deflected toward a lower point on the scale when the vagus is depressed by conveyance of

energy to a site in the median line between the 3rd and 4th dorsal spines (page 81).

Concentration of energy to the sites indicated is best secured by preparing a screen of cardboard covered with tin foil or other non-conductor (impervious to human energy) in which an opening is cut about one inch in diameter (Fig. 35).

If the opening in the screen covers the 7th cervical spine or the area indicated in the epigastrium, a person discharging an abundance of energy may with extended fingers directed toward the opening, cause a rise of blood-pressure as indicated by the movement of the needle.

Depression of vagus tone and a fall of pressure is noted when the energy from the fingers is directed at the opening in the screen fixed between the 3rd and 4th dorsal spines. These effects may be achieved by persons discharging an abundance of energy at a distance of several feet, whereas with others, apposition of the finger tips to the sites indicated is necessary.

The determination of polarity by aid of this apparatus requires much patience. Let one assume by aid of the conducting cord (Fig. 19) energy is conveyed to the epigastric area from a supposititious carcinoma. To avoid any movement on the part of the subject fix the electrode to the epigastric area with plaster or a band.

The primary effect of such conveyance of energy is augmented blood-pressure.

Polarity as has been shown (page 41), may be modified at its source or point of exit (from electrode in proximity to the stomach).

If the pressure rises when the positive pole of the magnet is directed at the site corresponding to the electrode over the growth, the conducted energy is positive. The nega-

tive pole of the magnet directed toward the same area would inhibit any rise. If both poles of the magnet inhibit a rise of pressure, the energy is neutral assuming of course that, there has been a rise of pressure prior to the use of the magnet.

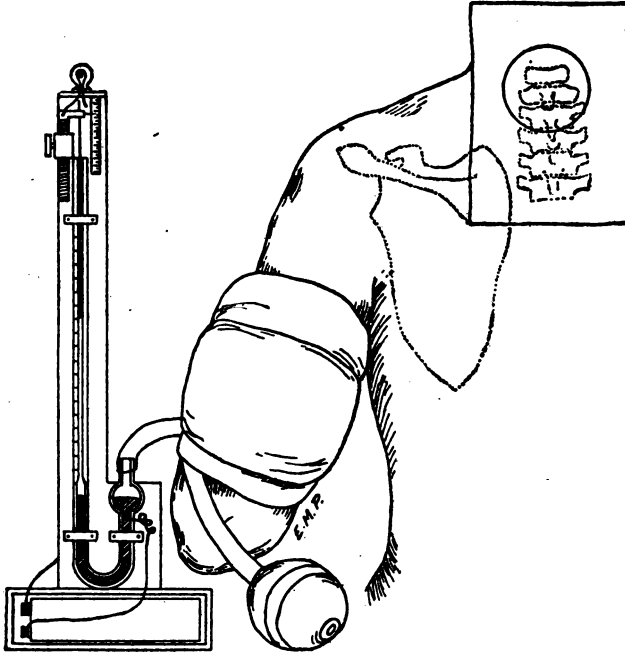


Fig. 35.—Psychophanometer (Planck) and screen (p. 25). Fenestra of the latter over the 7th cervical spine.

PSYCHOPHANOMETER.—This ingenious apparatus (Fig. 35) devised by Dr. F. M. Planck, consists of a collar for the arm similar to the collars used in blood-pressure instruments. This collar connects by a rubber tube with the short arm of a well of mercury. The long arm of the latter is adjusted to an adjustable copper contact point which in turn connects with a battery strong enough to light a small electric bulb. The collar is inflated to about the limits of blood-pressure.

The copper point is adjusted so that the fluctuations of the mercury in response to the impulse of the heart make and break the contact with the copper point and with the battery, thus lighting the electric bulb at every systole. By this means which is the well known method of relaying, the current is reinforced by the subject, and the demonstration is made through the physical results of energy stimulation.

By decreasing the caliber of the long limb of the mercury well, the oscillations at systole can be lengthened. By making the contact of the copper point with an adjusting ratchet with a delicately graduated Vernier or with a gauge, the transmitted energy can be measured. The moment energy is conveyed to the epigastrium or the 7th cervical spine, the current will no longer make and break but will be a continuous contact, and the light will burn steadily.

While the pressure is high (continued burning of the light) and energy is conveyed over the opening in the screen placed between the 3rd and 4th dorsal spines, vagus tone will be decreased so that the column of mercury no longer makes contact at systole, and the electric light goes out.

The apparatus of Dr. George Starr White, (Fig. 36) surpasses the Planck apparatus in sensitiveness. Its application is similar to that of the latter.

Four electric lamps of different colors approximate the scale. Between the first and second lamp there is a distance of 2 mm.; between the second and third $1\frac{1}{2}$ mm.; between the third and fourth, 1 mm.

The metallic contact with the fluctuating mercurial column may be adjusted to give systolic and diastolic readings by alternate lighting of two differently colored lamps.

The conveyance of energy is demonstrated by the lighting of one or more superimposed lamps.

Not infrequently the primary effect of conveyed energy to the epigastrium or the 7th cervical spine is to diminish blood-pressure owing to the strength of the stimulus (page 85). Again, when the energy is conveyed to the region between the 3rd and 4th dorsal spines, the primary effect may be stimulation, but this momentary excitation is succeeded by depression of the vagus.

By aid of the foregoing apparatus, the effects of color (page 48) on human energy may be demonstrated. If between the fingers of the operator and the subject a red screen is interposed, a continuously lighted lamp will light intermittently, because red intercepts the transmission of energy. If however, the red screen

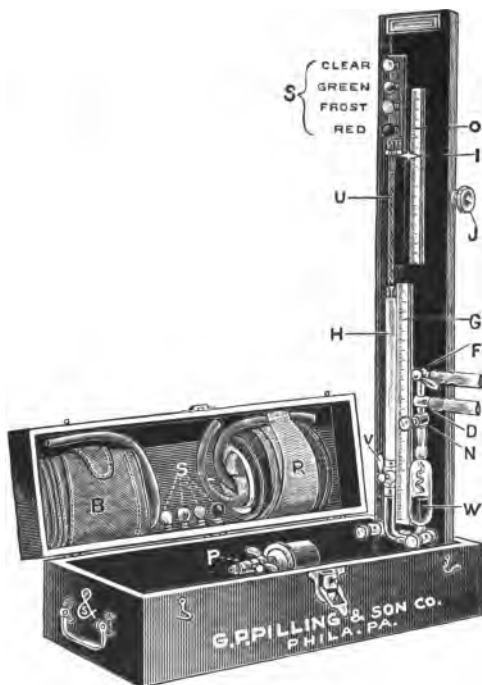


Fig. 36.—Psychophanometer (White).

is placed on the head of the operator, there is an increased output of energy and the column of mercury rises (continuous lighting of the lamp).

These instruments may be utilized for measuring psychic energy (page 65). They open the field of research concerning the effects of colors, of color harmonies, clothing, music, discord and thousands of other questions which have hitherto been problematical in psychoneuroses and psychotherapy.

To show Diastolic Pressure with the psychophanometer of White, lower the lamp carriage until all the lamps light. When vagus tone is depressed by conveying energy between the 3rd and 4th dorsal spines, the top light, the third and even the second and first will go out in proportion to the amount of conveyed energy and the susceptibility of the subject.

SPHYGMOGRAPHIC REGISTRATION.—If one end of a rubber tube is hermetically attached to practically any mercurial sphygmomanometer, and the other end to a tambour, one may make a graphic record of the variable grades of pressure of the column of air superinduced by the fluctuations of mercury.

The sphygmomanometer is attached in the usual way, and the pressure of the arm-piece is adjusted by inflation or deflation so as to secure the maximum oscillations of the mercury. Increase or decrease of pressure is noted by the amplitude of the curves (Fig. 24) when energy is conveyed to the epigastric area or the 7th cervical spine to increase blood-pressure, or to the area between the 3rd and 4th dorsal spines to diminish pressure.

Extensive investigations by the writer with various forms of sphygmographs and the electrocardiograph, with the object of securing characteristic sphygmograms and electrocardiograms by the application of various forms of

energy (normal and pathological) to the 7th cervical spine and epigastrium, were without definite results. *Vide* p. 296.

GASTROGRAPHY.—With the apparatus shown in Fig. 37, attempts were made to make records of the stomach contractions with the results shown in Figs. 38 and 39.



Fig. 37.—Apparatus for recording stomach-contractions incident to the action of transmitted energy. It consists of a stomach-tube to one end of which a rubber-balloon is fixed and to the other end a pump for inflating the balloon in the stomach. The pump and stomach-tube are connected with a piece of V-glass tubing. The stomach-contractions are transmitted to a tambour, the lever of which makes the record on a revolving cylinder.

The stomach faithfully records the dots and dashes from an ordinary transmitter operated at a distance of 40 feet from the subject (Fig 40).

Gastrography is not destined to be of any practical

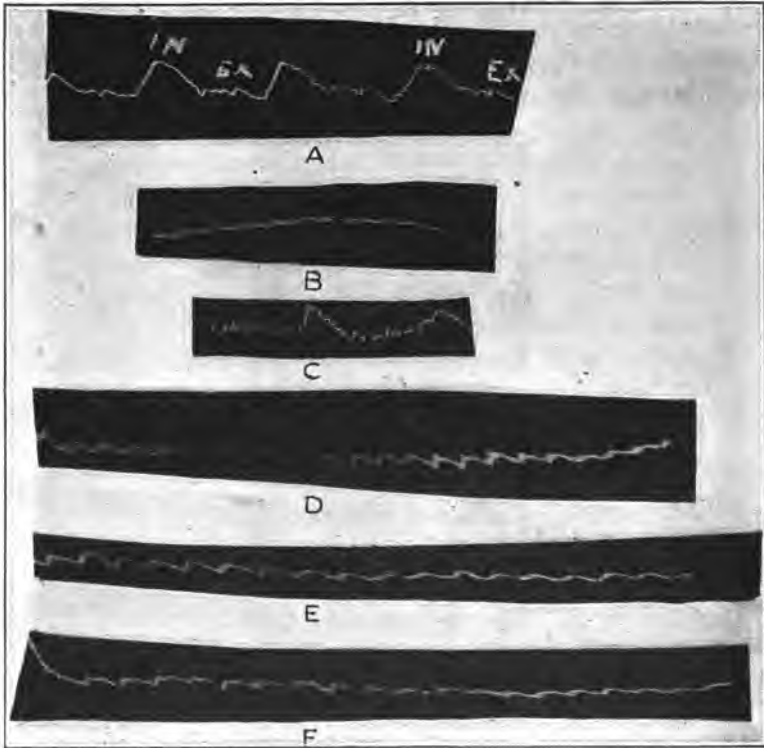


Fig. 38.—Tracings of the stomach with the apparatus shown in Fig. 37. A, normal curves dependent on respiratory excursions; B, normal curves due to transmitted pulsations of the aorta; C, curves caused by concussion of the 7th cervical spine; D, curves caused by contraction of the stomach due to making and breaking of the current leading to an electromagnet in proximity to the subject; E, curves caused by transmitted energy from one subject (by concussing the 7th cervical spine) to another subject; F, curves due to transmitted psychic energy from one subject to another subject. During the making of records of C, D, E, and F, breathing of the subject from whom the records were taken was temporarily suspended. The records of transmitted energy were made during the time one subject was in proximity but not in contact with the other subject.

value insomuch as it necessitates a subject accustomed to the stomach tube and one must eliminate respiratory curves and transmitted pulsations (Fig. 38).

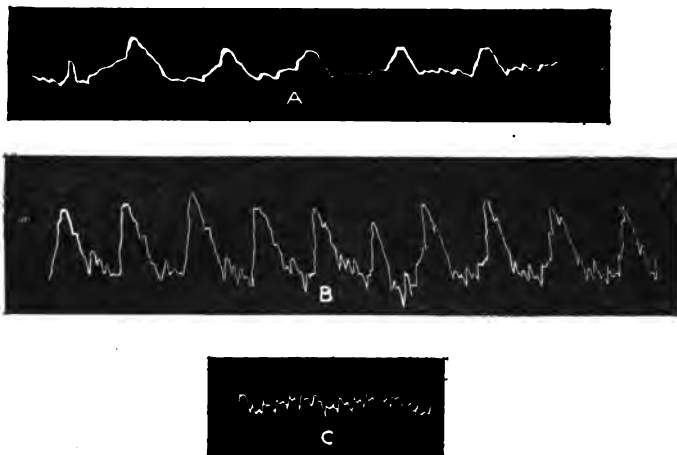


Fig. 39.—Physiological manifestations of the emotions as exhibited by contractions of the stomach; A, joy; B, fear; C, great agitation. These tracings were taken from different subjects in whom these emotions were expressed by aid of the apparatus shown in Fig. 38. Practically identical records were made in other subjects under like emotional conditions.

By aid of a GASTRODIAPHANE, one may note a diminution in the area of the stomach illumination by conveying energy to the seventh cervical spine or the epigastrium. Transillumination in this way however is too gross for recognizing the transmission of energy. Any electrical difference in potential (that is difference in amount of positive or negative electricity) is indicated by the swing of the needle of the Galvanometer.

GALVANOMETRIC measurements were made with a stomach tube converted into a non-polarisable electrode. The tube was introduced into the stomach, and the hand of the subject immersed in a salt solution. Tube and vessel were connected with a sensitive

Galvanometer. When energy was conveyed to either the 7th cervical spine or epigastric area, the readings were invariably negative to the original electrical potential.

This method was of great value in determining the action of psychic energy, but it is not destined to be of practical value to the average physician.

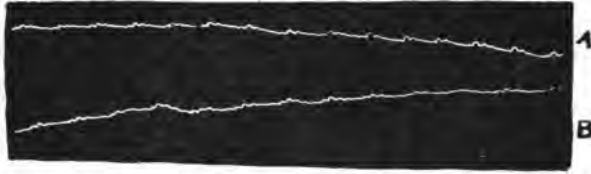


Fig. 40.—Dots and dashes from a transmitter recorded by the contractions of the human stomach; A, dashes and B, dots.

OCULAR REFLEXES.—The writer has shown *elsewhere* that augmentation of vagus tone by conveying energy to the 7th cervical spine or epigastrium, will increase visual acuity and enlarge the field of vision and the field for colors. Contrary effects are observed when vagus tone is reduced (stimulus between the 3rd and 4th dorsal spines).

Dr. George Starr White, comments on this optometric recognition of energy as follows:

“Dr. Albert Abrams, in the fifth edition of his work on Spondylotherapy, makes mention of the ocular reflex in cases of exophthalmic goitre. In our work in translating the visceral reflex (Abrams) into audible tones, we were able to demonstrate by means of various devices that the visceral reflex was really an increase in tension in the viscera. This can be brought about by the change of tension in the blood vessels, in the musculature of the viscera, or of the capsules surrounding the viscera.

Any energy which excites the vague tone will change the tension in every organ of the body, and we could not

see why it should not change the ocular accommodation. To enable us to prove this conclusion, we purchased an Ophthalmo-axonometer, manufactured by the Standard Optical Co., of Waupaca, Wis. This instrument is illustrated herewith (Fig. 41).

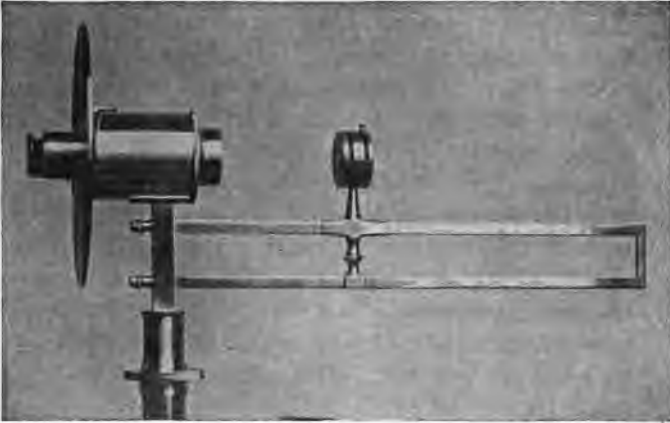


Fig. 41.—Ophthalmo-axonometer.

The principle upon which this apparatus works is:

1. The scaling down of the distance type and fan chart to a range of a few feet and still preserve the requirements of the standard visual angle.
2. The substitution of the focal length of the lens for the actual lens itself.

In the neutralizing telescope there is placed a +8 D lens. The emmetropic eye at the telescope will read the "fogging" type at zero. By sliding the dial carriage on the beam backward and forward according to the gradation engraved on the beam, plus and minus corrections of the dioptric lens indicated is obtained.

By sliding the disc carriage away from the telescope several diopters beyond zero, the "fogging" lens on the disc is in such a position that the eye when looking through the telescope, is "fogged" and can discern nothing. By sliding the disc carriage slowly toward

the telescope, while the observing eye is looking through it, when the proper location on the beam is reached, the observing eye can readily read the letters on the chart.

We make a note of the reading on this beam and immediately slide the carriage away so as to again fog the eye. We must not allow the eye to accommodate but use entirely the "fogging" or "subjective" method.

We now place a bar-magnet in front of the epigastrium or point the "energetic finger" at this location, or concuss the 7th cervical vertebra or direct magnetic or human energy toward that point. We immediately draw the disc carriage to such a location on the beam as to make the letters on the chart of the same clearness as they were at the former test. We make a note from the scale, and generally find that the carriage has been moved from $\frac{1}{2}$ to 2 diopters nearer the telescope than with the previous test. This means that a plus lens would have to be put in the cell frame in front of the telescope to make the eye, after such a stimulation read without accommodation at the same distance as it did before the stimulation. In other words, the stimulation which would produce the visceral reflex has at the same time changed the accommodation mechanism in the eye. The amount of change will depend upon the age of the subject—the older the subject, the less will be the change. The degree of change is apparently dependent upon the consistency of the lens.

This is one of the most remarkable and convincing proofs of the visceral reflex. All subjectiveness is obliterated as the subject has no way of telling what the location of the carriage on the beam is, while the eye is looking through the telescope.

In all new work the innovator is constantly on the alert to find means of proving to skeptical minds that his discoveries are well founded.

All originators know by experience that some men would rather criticise than test the work. In justice to

Dr. Abrams, the discoverer of the "visceral reflex," as we now understand it, we are very glad to have found another fact to prove this remarkable discovery—the visceral reflex of Abrams.

We have discovered several other proofs that there is such a phenomenon as the visceral reflex, but we know of none that is less subjective than the ocular demonstration above described.

Our newest discovery for the demonstrating and proving the visceral reflex is by the interference of sound waves through our organ-tonicity translating device which we have neologized organotonometer (page 75); a measure for the tonicity of the organs. By means of the organotonometer we are able to translate organic tonicity (visceral reflex—Abrams) into audible tones, which tones vary in pitch according to the tonicity of the viscera."

With a simple optometer, purchasable for fifty cents or test-types, an increase or decrease of visual acuity may be determined (less accurately) by transferring energy to produce pressor or depressor effects on the vagus.

MYDRIASIS.—The pupillary responses to light are the effects of energy. The ciliospinal reflex is pupillary dilatation by stimulation of the sensory cutaneous nerves.

The dilator muscle of the iris is innervated by the sympathetic. The mydriatic pupillary tract (Fig. 23) passes out of the cord through the first three dorsal nerves (corresponding to the 1st and 2nd dorsal spines). Stimulation of the latter causes pupillary dilatation. If to the spines in question an electrode is fixed and accommodative efforts on the part of the subject are guarded against in the usual way, the conveyance of energy is followed by an immediate reflex of dilatation.

RETINAL VASOMOTOR REFLEXES.—It has been shown *elsewhere*, that energy to the 7th cervical spine will contract

the retinal blood vessels whereas the counter reflex of dilatation ensues, when energy is conveyed to the 10th dorsal spine. These effects may be noted during the ophthalmoscopic examination by conveyance of energy from the finger tips to the spinous processes in question.

AUDITION.—What has been said of vision (page 170) refers with equal cogency to audition. It has been shown *elsewhere* that this sense is controlled by the autonomic nervous system.

The following simple experiment shows how audition may be improved or diminished; Determine with a normal subject the distance at which the tick of a watch is heard in the ear under examination. Now convey energy with the finger tips to the 7th cervical spine and note that the subject perceives the tick at a greater distance. By diminishing vagus tone (finger tips between the 3rd and 4th dorsal spines), the tick is heard with less intensity and at a diminished distance.

Accurate quantitative tests may be made with Politzer's acoumeter. Let a subject with normal hearing listen to the tick of a watch at the threshold of perception. Observe that when the positive pole of a bar-magnet is held close to the external auditory meatus, audition is increased and decreased, when the negative end of the magnet is similarly employed. Both ears show a like reaction. This method of differentiating polar energy is worthy of further investigation.

PHOTOGRAPHY.—In studying the photochemistry of psychic energy it was found to vary in different individuals. In those who spontaneously discharge large quantities of energy by placing a very sensitive film (enclosed in a black envelope) and interposing a medium which resists the penetration of psychic energy, one may practically always obtain

an impression on the film. These impressions I have neologized as psychograms. At the present time the impressions are so faint that they cannot be illustrated in this work. It is reasonable to hope however, that further experimentation will achieve better results.

Time of exposure depends on the subject discharging psychic energy. The most satisfactory time varies from 30 seconds to 5 minutes. The discharge may be augmented by placing a strip of red material across the head and the action of the psychic rays on the plate may be intensified by interposing between the forehead and the plate a strip of aluminum. The material for obstructing the rays may be a thin layer of shellac or the insulating tape used by electricians. The shellac may be painted on the forehead or envelope (prior to the introduction of the film), and similar disposition may be made of the tape. I have endeavored to obtain similar pictures of the bones of the hand.

The results thus far have not been satisfactory, but there is reason to believe that further efforts with new developers may eventually be successful.

My experiments do not refer to mentoids (thought forms or bodies.) Yamaguchi refers to a woman having the mental faculty of autohypnosis, who was requested to hypnotize herself and strongly suggest to herself a word spelled in Japanese letters. She did and remained hypnotized during one hour. Sensitive dry plates held near her head, upon development, revealed the negative of the word spelled in Japanese.

Photography of human radiations has been largely exploited in the realms of spirit photography. The fogged plates (excluding chicanery) thus secured, demand an inordinate amount of imagination for their interpretation. The heat of the body will produce irregular fogging on dry plates. It is also known that printed characters may impress a plate due to the heat

mentioned, plus the previous exposure of the printed sheet to any bright source of illumination.

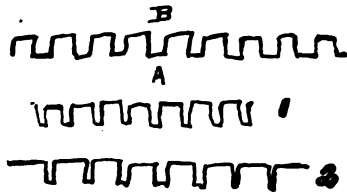


Fig. 42.—Psychomanograph (Planck). The tracings (exact size) represent the systolic (A) and diastolic (B) phases: 1, Psychomanogram from energy stimulation at the 7th cervical spine and 2, from like stimulation at the 3rd dorsal spine.

PSYCHOMANOGRAPH.—The great ingenuity of Dr. F. Marshall Planck (Kansas City, Mo.) suggested the use of this apparatus (Fig. 42) which is employed after the manner of his psychophanometer (page) 87. The instrument records the action of the heart (Fig. 42); systole (A) and diastole (B).

For the employment of the *Sphygmophone* and *Biometer* *vide* page 272.

Vide GYROGRAPHY, appendix, Note IV and Note VIII, biometer and sphygmomanometer and metallic reflex.

CHAPTER VI

TOPOGRAPHIC PERCUSSION

VISCERAL TONE.—This subject has been discussed elsewhere (pages 27). Tone is an essential attribute of all living organisms. The term relaxation may be used as the antithesis of tone. The centers of the brain and spinal cord, are in a state of tonic excitation and from these centers, impulses are constantly passing through nerves to muscles and organs, maintaining the latter in a condition of tonic stimulation. If a decapitated frog is suspended vertically with the hind legs downward and the sciatic nerve of one leg is severed, this leg will hang down more limply than the other leg. Such an experiment shows that tonic impulses are no longer conveyed from the spinal cord to the muscles supplied by the severed nerve.

Repeated reference has been made to the influence of cosmical energy on our organisms. **RADIOACTIVITY** which embraces atomic transformations is practically the main-spring of the universe.

“The natural rate of flow of energy from its primary atomic reservoirs to the sea of waste heat energy of uniform temperature, allows life to proceed at a certain pace, sternly regulated by the inexorable laws of supply and demand, which the biologists have recognized in their field as the struggle for existence. The main part that concerns life on this planet is received as radiant energy¹.”

Every living being transforms energy from the universe in to heat, mechanical motion and nervous energy. Reference

has already been made to the influence of the *magnetic elements* on visceral tonicity (page 103).

The output of energy varies in relation to the posture of the individual (page 269) because the intake of energy is similarly influenced.



Fig. 43.—Illustrating a difference in the topographic area of the viscera by percussion according to the position of the subject. Broken lines (liver, stomach and spleen) indicate the lower borders of the organs cited when the subject faces the north and the continuous lines during the time the subject is facing west. This linear distinction is reversed in the illustration with reference to the heart and the aorta. When the 7th cervical spine is GROUNDED (p. 35), the removal of vagus tone is practically equivalent to the effects obtained when the subject faces north.

Any variation in the proportion and character of the electrolytes in a tissue is capable of imparting to that tissue certain properties. The chief electrolyte in our blood is sodium chlorid. If a muscle is put into a solution of the latter (*i. e.*, isotonic with the muscle)

it twitches rhythmically, while the addition of a soluble calcium salt prevents the twitching.

My investigations show that the stomach musculature exhibits like phenomena. Let a subject ingest 50 Cc. of normal salt solution—a persistent stomach dullness (stomach reflex) ensues until inhibited by the ingestion of the same quantity of fluid containing 5 grains of chlorid of calcium. When the latter is ingested, it is impossible to impart tone to the stomach by the conveyance of energy.

The organs are in a varying state of tonicity. The tone may be normal (orthotonic), increased (hypertonic), diminished (hypotonic) or absent (atonic).

A RELAXED ORGAN WILL YIELD A SMALLER AREA OF DULNESS THAN AN ORGAN WHICH IS IN A STATE OF TONE. To accurately reproduce the area occupied by an organ, it must be put in a condition of augmented tone, otherwise topographic percussion yields untrustworthy results.

Fig. 43, represents topographic percussion of the heart and liver, the subject alternately facing North and West. By conveying energy directly (Fig. 43) or indirectly to the viscera, the increased visceral tonicity permits better delimitation of the viscera.

When the subject stands in the *magnetic meridian* (page 103) supreme tonicity is conferred on the viscera. This maneuver is equivalent to organismal induction from cosmic energy.

VISCERAL DEMAGNETIZATION. — Demagnetization is effected when one subjects an object to a series of cycles of diminishing intensity.

For local demagnetization, a coil of wire is wound around a piece of soft iron (Fig. 44) and connection established with an alternating current.

The viscera are dominated by two sets of fibers, opposite

in action, and for convenience, may be designated as *vagus* and sympathetic fibers. The *vagus* fibers maintain the organs in a state of contraction, and the sympathetic fibers maintain a state of dilatation.

When both sets are in physiologic tone, the viscera are neither contracted nor dilated, but in a condition of equipoise. If one stimulates the *vagus* fibers at the 7th cervical spine (Fig. 23), the heart, aorta, stomach, liver and spleen contract.

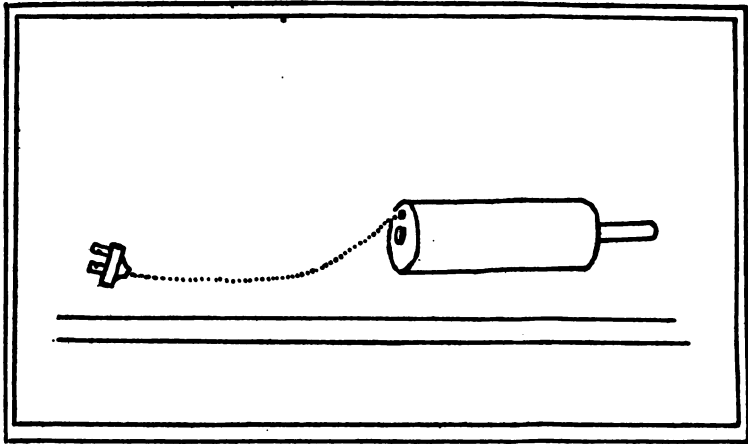


Fig. 44.—Apparatus for demagnetization; removal of *vagus* tone (*vagus* hypotonia).

Stimulation of the sympathetic fibers at a point between the 3rd and 4th dorsal spines (page 81) results in dilation of the foregoing viscera. The foregoing maneuvers impart tone to the *vagus* or sympathetic fibers.

Magnetic flux applied to the regions in question will achieve like results.

Demagnetization corresponds to the removal of tone. If one applies the extremity of the iron rod (Fig. 44) to the 7th cervical spine and executes demagnetization for several

minutes, the tone of the viscera supplied by the vagus is partially annihilated, and the action of the sympathetic fibers on the organs becomes dominant. In consequence of the foregoing, percussion will show:

1. Dilatation of the heart and aorta;
2. Enlargement of the stomach, liver and spleen;
3. Dilatation of the intra-abdominal veins.

VISCERAL ATTRACTION AND REPULSION by aid of positive or negative charges is a fascinating subject, but the scope of this work will not permit of its discussion. Those interested in the subject will find a summary of my observations in the fifth edition of *Spondylotherapy*.

Here it is shown how the organs are maintained in position a new theory for splanchnoptosis, and the probable cause of traumatic neuroses.

AUTOCHTHONOUS ENERGY.—In health the heart and aorta yield an energy sufficiently potent when conducted to the stomach region to elicit the stomach reflex. By aid of the electrodes and conducting cord, the energy from the heart or aorta is transferred to the stomach region. The electrode for demarcating the viscera should be pointed at the tip like a sharpened pencil (Fig. 19). The energy is discharged in straight lines hence the pointed electrode must not slant.

With the stomach region electrode fixed by the patient, an assistant gradually approaches the heart border while percussion of the stomach border (previously ascertained by a bar-magnet) is executed by the physician. The moment the border of the heart is attained, dulness of the stomach is elicited.

Both borders of the heart may thus be determined. The method is absolutely correct if properly executed, and has been repeatedly corroborated by orthodiagraphy. The

same is true with reference to topographic percussion of the thoracic aorta.

Reference to Thymus Percussion will be made later (page 106). The line of demarcation between the liver and heart may also be defined, insomuch as the former organ in health yields no dulging energy. It is possible by this method to determine the ventricular line of demarcation after the following manner. The left ventricle yields a negative energy, and the right ventricle a positive energy.

If the negative pole of a bar-magnet is held in front of the stomach during percussion, the transferred negative energy from the left ventricle will only fortify the energy from the magnet, but the moment any part of the right ventricle is attained, the positive energy from this ventricle neutralizes the negative energy of the magnet and no stomach dulness can be elicited.

In disease the syphilitic energy (page 133) from the liver will permit a definition of that organ, and the same may be said of the spleen. In the norm the KIDNEYS yield a positive dulging energy and for this reason their demarcation by the method in question is easy.

CONDENSED ENERGY.—It has already been shown (page 70) that energy is appropriated from our environment (physical forces of nature). This energy is condensed in our organisms in excess of our momentary demands. When extraordinary physical or mental effort is necessary, we draw on this surplus energy.

By aid of the stomach reflex, it can actually be demonstrated that the spleen and appendix act as energy condensers.

SPLEEN.—This is practically a storage organ in addition to its other *functions*. If the tips of the fingers discharging a positive energy or the positive pole of a bar-magnet be

placed in apposition with the spleen for one or more minutes, one may for hours conduct energy from it sufficient to dull the stomach, and the energy thus discharged is invariably positive. This discharge can at once be annihilated by an opposite charge to the spleen (using the finger tips of the other hand or the opposite pole of a bar-magnet).

If the spleen is charged with a negative energy, the energy dulling the stomach will be negative. By charging the spleen for about one minute, say with the finger tips of either hand, one may delimit it in its entirety by the method of defining the heart and aorta (page 105).

The spleen evidently supplies tone to the vagus and all the viscera innervated by this nerve.

Let us take a concrete paradigm. An individual has a vagus tone (page 154) of $13/25$ of an Ohm. A giant magnet is permitted to discharge its positive energy in the splenic region for about one minute. Immediately, there is an increase of vagus tone up to 4 Ohms. If now the negative pole of a magnet discharges its energy in the splenic region, vagus tone is reduced to $13/25$ of an Ohm (its original tone).

APPENDIX.—What has been said of the spleen applies with equal cogency to this structure. By charging the appendiceal region for one minute with the finger tips of either hand or with a bar-magnet, the energy is retained for several hours as evidenced by the conveyance of energy to the stomach and eliciting the stomach reflex. By this method one may as a rule, locate the site of the appendix. With the pointed electrode gradually passed around the ileocecal region (the other electrode near the stomach region) the moment energy is conveyed to elicit the stomach reflex, there is the site of the appendix. We shall learn later that the colon bacillus may yield a dulling energy and this may be a confusing factor in diagnosis. Error may be obviated

however by the fact that the duling energy is either positive or negative depending on the pole of the magnet used or whether the finger tips of the right or left hand were employed. If the duling energy from the charged appendix were positive, negative energy conveyed to the appendix for a few seconds will not permit the conveyance of energy (neutralization of positive charge) hence there will be no stomach reflex.

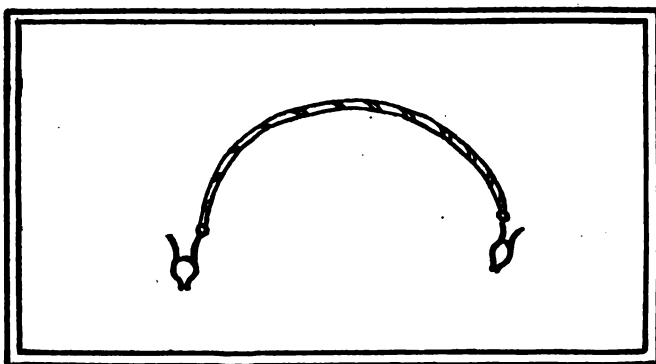


Fig. 45.—Apparatus for short-circuiting the psychomotor regions. It consists of two clamps (for attachment to the hair) united by insulated copper wire.

If the 10th dorsal spine is concussed, the energy from a charged appendix will be shifted downward 3 cm. (provided there are no adhesions) and this downward luxation of the appendix will persist for 15 seconds. It is likely that the appendix stores energy for maintaining the tone of the stomach, insomuch as the dyspeptic symptoms associated with appendicitis may be caused by the appendix failing to act as a reservoir for energy. In *appendicitis* one cannot store energy by the method cited. In appendectomized subjects the foregoing phenomena are not obtainable.

GEODYNAMICS.—The geophysilogic factor in modifying visceral percussion may also be noted with *blood-pressure*.

The latter varies slightly in different positions with relation to the compass points.

If the psychomotor regions (page 52) are SHORT CIRCUITED by a strip of metal across the head connecting the regions in question, there is no energy discharge from the hands sufficient to evoke the stomach reflex. The effect of this short circuiting on the pulse is immediate; on palpation it becomes small or is inhibited for one or more seconds. A sphygmogram is characteristic; the pulse volume is at once restored when the metal is removed. In the norm, within a minute the blood-pressure (as a result of short circuiting) is reduced from 8 to 20 mm.

In hypertension (notably the psychogenic forms, often specified as *hyperpiesis*) the reduction in blood pressure by short circuiting may be as high as 30 mm. In a patient seen with Dr. J. T. Fisher (Los Angeles), the pressure within 5 minutes fell from 220 to 180 mm. Respecting the duration of this reduction, I cannot say, insomuch as my observations in this respect have been too limited. *Vide* page 176.

CHAPTER VII

SEXUAL POLARITY

The present tendency is to refer all phenomena to a sexual basis and the odd and even numbers are regarded as the mathematical sexes. Anatomy has heretofore been invoked to differentiate the sexes. If I appeal to the electronic theory, there can be no absolute differentiation. Humans are mere aggregations of electrons, and there must be transitional forms of humans just as there are transitional forms of metals and non-metals.

It has been suggested by Steenstrup, that sexual characters are present in every part of the body, and that every cell in the body has its definite sexual significance. The electrons characterizing masculinity and femininity are so grouped that definite areas in a woman provide a sexual stimulus for the male and definite areas of the latter for the female.

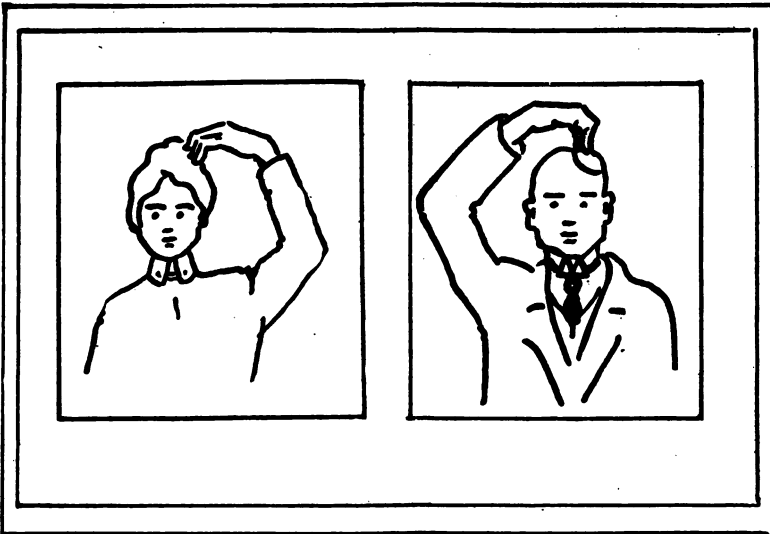
The law of sexual attraction, "that every male type has its female counterpart with regard to sexual affinity" appears to me to be based on the definite law that, 'Like poles repel and unlike attract.'" Sexual attraction and repulsion must obey this law.

Weininger¹¹, referring to the fertilization of some seaweeds, speaks of the lines of force between the opposite poles of magnets as no more natural than that which irresistibly attracts the spermatozoon and the egg-cell.

In the attraction between the inorganic substances, strains are set up in the media between the poles, whereas in the living matter the forces are confined to the organisms.

When the spermatozoa approach the egg-cells they overcome the force exercised by light, hence the chemotactic is more potent than the phototactic force.

Sexual adjustment cannot abrogate the laws of the universe. The adjustment of differences in potential in the sexual sphere are as inviolable as when iron-sulphate and caustic potash are brought together; the SO_4 ions leave the iron to combine with the potash.



Figs. 46 and 47.—Illustrating the female and male type of polarity. Only the finger tips must approximate the psychomotor area.

Attention has already been directed to the differences of polarity in the sexes. We must first make clear what I have differentiated as the MALE and FEMALE TYPES OF POLARITY.

Two methods are available for determining the latter. In the first method only the subject can be employed; in the second method any subject may be used, and for that reason it is the more practical of the two.

FIRST METHOD.—One first localizes the *psychomotor area*

(Fig. 52). If the subject (female) touches the **LEFT MOTOR AREA** with the tips of her fingers of her left hand (Figs. 46 and 47) the stomach reflex ensues, and one may demonstrate dulness of her stomach. This is the female type of polarity.

The male type of polarity is the opposite of the female type; dulness of the stomach only ensues when the tips of the fingers of the right hand are placed on the **LEFT PSYCHOMOTOR AREA** (Fig. 47). The energy evoking the dulness is positive.

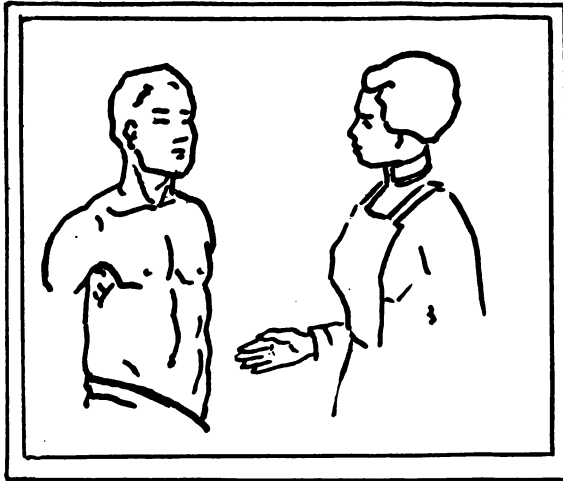


Fig. 48.—Illustrating the method of eliciting the stomach reflex by directing the extended fingers in the direction of the epigastrium.

A male facing a patient (male or female) produces stomach dulness by touching the left psychomotor region with the fingers of his right hand. A female similarly located with reference to the patient (male or female) can only produce like dulness by touching the right psychomotor region with the fingers of the right hand.

SECOND METHOD.—In the norm, if a male extends the fingers of his **LEFT HAND** directly on a line with the exposed

epigastrium of another individual (male) at a distance of one or more feet, the stomach reflex (as elicited by dulness) may be demonstrated (Fig. 48). This dulness is maintained only during the time the fingers are extended. The finger energy may likewise be conveyed by a conducting cord. The latter dulness is only evocable by the female when the fingers of the RIGHT HAND are extended. These types are reversed in LEFT HANDED individuals, but are usually maintained in the ambidextrous. These types are not demonstrable in either sex before puberty, and are usually absent at the MENOPAUSE and in elderly males. No polarity (by these methods) is demonstrable in certain conditions (page 115).

Energy discharge from the fingers is augmented by thinking profoundly. The psychologist may avail himself of this fact in gauging cerebration.

The male and female types of polarity are explained as follows: In the male the aural polarity (page 79) on the right side of the body is positive and on the left side negative. This aural polarity is reversed in the female. The stomach in the MALE is in the zone of negative, and the right lower border of the liver in the zone of positive polarity. When a female extends her RIGHT hand, she dulls the stomach of the male owing to the discharge of negative energy; her left hand 'discharging positive energy is neutralized by the aural zone of negative energy and no stomach dulness ensues. Her LEFT hand and not her right hand for a like reason would elicit the liver reflex (page 77).

If the subject on whom the stomach and liver reflexes are elicited is a female, the foregoing is reversed.

For a like reason the polarity of a CANCER (page 187) is dependent on whether the stomach reflex is elicited in a male or female. In the former it is positive and in the latter,

negative. If one grounds the left side of a male by means of a conducting cord, the grounding of the negative aural energy no longer combats the energy discharge from the left hand of the female, and the stomach dulls when either hand is extended.

By short circuiting the psychomotor regions (page 109), aural polarity may likewise be inhibited and the polarity of normal or pathological energy is alike over the lower liver border or stomach. *Color* has an important bearing in the diagnosis of sexual polarity. RED or YELLOW on any part of the body reverses polarity; converting a male type into a female type of polarity and *vice versa*.

Even the ingestion of yellow fluids (tea), lemon drops etc., will reverse the normal type of polarity for several hours. While the fecal coloring matter has no apparent effect on polarity types yet, in the prediction of sex, the previous employment of a purgative is indicated.

The luetic (permanently) and the patient with auto-intoxication (temporarily) show no polarity. Sodium bicarbonate which yields in the blood a temporary neutral energy (page 41) nullifies the polarity temporarily. Thus, a female with a normal polarity type taking one drachm of sodium bicarbonate cannot dull the stomach of a subject with either hand; after five minutes she dulls the stomach with either hand (*bisexual type of polarity*) and after a further 5 minutes her normal type of polarity is restored.

A syphilitic or autotoxemic subject used for test purposes appears not to influence the polarity of the electronic tests in disease, and may therefore be employed.

Polarity anomalies thus far observed by the writer are as follows:

<i>A polarity</i>	<i>Bipolarity</i>	<i>Reversed Polarity</i>
Syphilis	Tuberculosis (active).	Color (page 114).
Carcinoma.	Menstruation (1st day).	
Autointoxication.	Paranoia.	
Neutral sexuality.	Drugs (page 288).	
Drugs (page 288).	Posture (Person extending fingers while standing in the magnetic meridian).	
	Bisexuality (rare).	

The female type of polarity characterizes the normal sexual life. At the menopause this type disappears, provided all sexual feeling has been lost. In two instances where the ovaries had been removed, the male type of polarity was present, but the latter could be reversed to the female type when ovarian extract was administered.

It would seem that the sexual apparatus is merely a vehicle for the elaboration of an internal secretion which by its action on the electrons of the body endows them with a distinctive polarity.

There are typical and atypical men just as there are typical and atypical women, and humans will eventually be subjected to a biologic-physiological differentiation of positive (+) negative (—) or neutral (O) polarities. *Color* as I conceive it represents different electrical charges.

In the case of a woman whose ovaries were removed, her male type of polarity could be changed to the female type by placing a strip of yellow material over her right psycho-motor area.

Magnetic attraction or repulsion is preceded by induction. The latter refers to magnetization or electrification in a body by the mere proximity of magnetized or electrified bodies. The induced magnetization or electrification is always of opposite kind to that of the inducing pole or body on the side nearest the latter, and of the same kind on the farther side.

I have on several occasions elicited the same type of polarity in husband and wife. When alone each presented the normal type of polarity. Together, when the attraction of the wife was greater than that of the husband, the mere propinquity of the latter, caused in the wife a reversal of polarity, *i. e.*, a male type of polarity by induction. Similar observations have been made on men who demonstrated a preponderance of affection for their wives.

Is affection only a question of polarity? Can the sex problem be solved by the foregoing observations?

Can we predict sex by the type of polarity shown by the pregnant woman? These are the problems which we must investigate. They await demonstration by repeated observations.

OCULO-GASTRIC REFLEX.—This differs in the sexes. Looking through a red medium, stomach dulness in the male is only elicited when the RIGHT eye is thus employed, whereas in the female gazing through the red, the LEFT eye elicits dulness.

LOCALIZATION OF THE OVARIES.—Draw an imaginary transverse line from the anterior superior spine of the ilium to the *linea alba*. Midway between this line on both sides an area (approximately 2 inches in circumference) is found which discharges negative energy. This area changes when the ovary is dislocated. During MENSTRUATION the ovaries discharge a neutral duling energy and the same ovarian reaction is demonstrable in HYSTERIA during the intermenstrual period.

The total energy contained in matter depends on the extent to which it can be changed. Here change predicates functional capacity and if an ovary discharges no energy, its incapacity may be functional or due to disease.

By our method of measuring energy (page 44), the means are at our command of determining the sexual

activity of the average female. Just as we can determine male sterility (page 118), a like condition may be determined in women. The writer here refers to OVARIAN INFERTILITY which has heretofore been accepted in a vague way in explanation of inexplicable sterilities.

The ovarian anomaly may be structural or functional. In either event, there is no ovarian energy discharge. In some instances stimulation of the 3rd lumbar spine will cause an ovarian discharge if absent, or will increase it, if present.

HOMOSEXUALITY.—Is this condition (sexual inclination toward members of the same sex) a mere question of polarity? My observations suggest the latter viewpoint. One may at once recognize homosexuals (due caution being exercised as cited on page 114) by demonstrating the female type of polarity in so-called males and the male type of polarity, in so-called females.

Sexual differentiation is never absolute. There is a permanent bisexual condition, however vestigial and rudimentary. If I suggest to an individual in an hypnotic condition that he is a woman and endowed with some of her attributes, I can reverse his polarity to that of the female. I have frequently reversed this polarity by suggestion even in the non-hypnotic state.

MALE SEXUAL POWER.—If one end of an insulated conducting cord is placed at the meatus of the penis, and the other end in proximity to the stomach, the latter becomes dull on percussion and there is a retraction of the organ in proportion to the energy discharged from the penis.

In individuals with strong sexual power this retraction may amount to 2 or 3 cm. In cases of extreme IMPOTENCY the energy discharged is not sufficient to elicit the stomach reflex. The following observations with the biodynamome-

ter (page 44) show the energy discharge from the meatus in males:

1. Puissant:..... 16/25 of an Ohm.
2. Moderately vigorous..... 12/25 " "
3. Very moderate..... 8/25 " "
4. Slightly impotent..... 4/25 " "
5. Impotent..... 1/25 " "
6. Impotent..... no stomach reflex.

This method of measurement is of extraordinary value in so-called **PSYCHICAL IMPOTENCY**, inasmuch as the psychogenic nature of the affection can be demonstrated (no marked reduction in energy discharge).

Again, one is in a position to gauge the results of treatment. From both **TESTICLES**, there is in the norm a discharge of negative energy. If one of the testicles is made functionless in consequence of previous disease it yields no energy. The absence of any energy discharge would show the futility of an operation for azoospermia consecutive to an epididymitis.

In **X-RAY STERILITY**, the testicles yield no discharge of energy. In several **SYPHILITICS** contemplating matrimony, there was likewise no energy discharge from the testes, despite the fact that no previous disease of these structures existed.

A like condition was demonstrable in married syphilitics without progeny.

MENSTRUATION.—During the entire menstrual period, a very powerful **POSITIVE** duling energy may be obtained from the lower abdomen strictly confined to the uterine region. Menstrual energy does not traverse a non-conductor (*vide* cancer).

Other interesting reactions strictly limited only to the **FIRST DAY** of menstruation are the following: energy sufficient to produce stomach dulness is obtained from extended

fingers of both hands (male and female types of polarity); from the right psychomotor region, a neutral duling energy (positive duling energy in the intermenstrual period, and after the first day of menstruation) and from the left psychomotor region, a duling energy which is both positive and negative (negative non-duling energy in the norm).

This reaction on the first day of menstruation corresponds to that elicited in paranoia (*q. v.*). The latter fact emphasizes the important influence of menstruation on mentality. The normal woman is really a psychoneurotic during menstruation and menstrual psychoses are not uncommon. Dubois¹², observes that there are women who could be shut up every month in an insane asylum.

MENSTRUAL BLOOD yields a positive duling energy, whereas normal blood (male or female), elicits a neutral duling energy when removed from the body.

A MALE HAIR yields a positive and a **FEMALE HAIR**, a negative duling energy.

PREGNANCY.—Strictly limited to the gravid uterus, a **NEGATIVE** duling energy is obtainable. The entire area of the enlarged uterus can be defined and its topography established thus excluding ectopic gestation.

In one case of pregnancy in which the clinical diagnosis was positive no reaction was obtainable. It was assumed that twins were present of opposite sex, and when a wire was attached to one side of the uterine region and grounded, the negative duling energy was elicited. Female polarity was present and a girl was predicted. I am awaiting the outcome of this case examined at the office of Dr. James Moran of New York.*

*This patient gave birth to only one child—a girl. Two weeks after my examination she suffered from uremic convulsions. I am unable to associate in theory any association between my reaction and the uremic convulsions.

DIAGNOSIS OF THE SEX OF THE FETUS.—Reference has already been made to the methods of determining sexual polarity (page 111). The second is the better of the two methods. In addition to the precautions cited on page 114, one must remember that a male in immediate proximity to the female extending her hand **MAY** reverse her polarity. In the prediction of sex, the pregnant woman extends the fingers of first one and then the other hand in the direction of the exposed epigastrium of another individual on whom percussion is executed. My investigations of this method are limited and permit me to formulate only tentative conclusions:

1. Prior to the 4th month, the pregnant woman shows no polarity, *i. e.*, extension of either the right or the left hand fails to elicit dulness of the stomach.

2. After the 4th month, if the extended fingers of the right hand evoke stomach-dulness (normal polarity) a **FEMALE** fetus may be diagnosed.

3. If after the same period only the extended fingers of the left hand cause stomach-dulness, a **MALE** issue may be predicted.

4. For a variable period after confinement, no polarity can be demonstrated by the foregoing method. The following incomplete record has been made by the author:

DATE	DURATION OF PREGNANCY	PLACE	POLARITY	PREDICTION	RESULT
Oct. 9, 1913 Mrs. T.	6 months	Kansas City (Dr. Craig)	Female	Female	Female
Oct. 9, 1913 Mrs. C.	6 months	Kansas City (Dr. Craig)	Male	Male	Male
Oct. 9, 1913 Mrs. V.	3 months	Kansas City	No polarity		
Oct. 20, 1913 Mrs. L.	7 months Patient yields electronic test for syphilis	San Francisco (Dr. G.)	No polarity		
Oct. 17, 1913 Mrs. E.	9 months	San Francisco (Patient of Dr. Koerber)	Male	Male	Male
Oct. 20, 1913 Mrs. G.	9 months	San Francisco Mt. Zion Hos- pital	Female	Female	Female
Nov. 7, 1913 Mrs. J.	9 months	San Francisco City & County Hospital	Female	Female	Female
Nov. 7, 1913 Mrs. S.	9 months	San Francisco City & County Hospital	Male	Male	Male
Jan. 6, 1914	8 months	San Francisco (Dr. A.)	Female	Female	Female
Jan. 12, 1914	7 months	San Francisco (Dr. A.)	Male	Male	Male

Since the foregoing was consummated only a few additional records have been made. Recently in New York, a few predictions were made concerning which Dr. Valdemar Sillo, writes as follows:

“The pregnant cases which you examined in Dr. Moran’s

office have all confirmed your prognosis as to the sex of the child, and I have personally succeeded in three more cases."

Several mistakes have been made by the writer in prognostication owing no doubt to failure in recognizing the liable sources of error (page 114).

PRODUCTION OF SEX.—The law governing the production of sex has been the subject of much speculation. Hippocrates, believed that the right ovary produced boys and the left ovary, girls. In accordance with the foregoing, women who desired male offspring should during coitus lie on the right side, and *vice versa*. The question of sex is dictated by two theories; the one supposing that sex is determined before impregnation; the other, that the embryo is possessed of the elements of both sexes until either one acquires a dominant influence in consequence of factors present during early pregnancy. The latter theory has been evolved from a study of lower animals and plants, and is supported by the fact that, the elements of both sexes in the human embryo, are apparently present in equal force at the commencement of embryonal life.

Minot's theory concerning the POLAR BODIES supposes that, the ordinary cell is hermaphroditic, and that, maturation produces a unisexual germ-cell by a division of the mother-cell into its sexual constituents (genoblasts). The male element is removed with the polar globules leaving the mature egg of a female.

Mere conjecture sustained by numerous investigations on plants, prompts the suggestion that, YELLOW over the right psychomotor region (which reverses polarity from the female to the male type), soon after conception until the 4th month, may eventuate in a male issue.

The citation of a few cases whereby a successful result was thus attained, means little.

Dr. F. M. Planck, reports as follows:

"When you examined the patient in my City (*Vide*, page 121) Mrs. V. Oct. 9, 1913, the polarity was neutral. She expressed a desire for a girl and you advised her to wear yellow coloring material over the left psychomotor region. She says she has one of the finest girls in the country."

When the polarity is reversed by *yellow*, there is also an increased energy discharge. Thus, when this color is placed on the head (psychomotor region) of a female, the energy discharge from the RIGHT finger tips was $4/25$ of an Ohm; from the LEFT finger tips, $24/25$ of an Ohm.

CHAPTER VIII

BIODYNAMGNOSIS OF SPECIFIC INFECTIONS
AND CONSTITUTIONAL DISEASES.*

NORMAL AND PATHOLOGICAL ENERGY.—In electronic diagnosis, these forms of energy may be differentiated as follows:

1. A few whiffs of *choloform* will at once dissipate normal energy, *i. e.*, it is insufficient in potential to evoke the stomach reflex whereas no amount of chloroform appears to deprive abnormal energy of eliciting the same reflex. Even under complete anesthesia the energy discharged from neoplasms persists.

2. To convey sufficient normal energy to elicit the stomach reflex, the tip of the cord or electrode must be in contact with the part supplying the energy. Morbid energy however, may still be conducted even though the electrode is more than one inch distant from the source of energy-supply.

3. When the stomach is the object of investigation another subject should be selected for the elicitation of the stomach reflex.

4. Pathological energy traverses glass or other non-conductor (rubber *etc.*); normal energy does not. The non-conductor may be interposed between the source of energy and the electrode or even better, the stomach electrode (pointed) passes through a cylinder of glass like the closed

*When (C) follows the caption of an infectious disease it signifies that, the reaction was obtained from cultures of the pathogenic germs.

end of a test tube or a rubber nipple (*Vide* further application of this method on pages 61 and 192).

ALL RODS IRRESPECTIVE OF MATERIAL HAVE POLARITY (page 228) AND MODIFY POLARITY WHEN EMPLOYED AS PROXIMAL BUT NOT AS DISTAL ELECTRODES FOR RECEIVING ENERGY.

ALL POLARITIES UNLESS OTHERWISE SPECIFIED REFER TO THE STOMACH REFLEX AS ELICITED IN A MALE SUBJECT FACING WEST (pages 59, 103).

When use is made of the biodynamometer (page 44), pathological energy traverses a non-conductor to the point of its energy value but not beyond. AT THE VIBRODYNAMOMETRIC INDEX, PATHOLOGICAL ENERGY WILL NOT TRAVERSE A NON-CONDUCTOR. At its WAVEMETRIC INDEX (page 281) however, the energy in question will traverse a non-conductor.

TYPHOID FEVER.—Neutral duling energy evocable from the spleen, ileocecal region and blood vessels. The reaction from the SPLEEN may be present for many years after recovery from the primary attack, and I have never failed to elicit the reaction in an individual who has had the disease.

When the spleen yields a reaction it may be defined topographically by the electronic method (page 105).

PARATYPHOID.—Positive duling energy from spleen, ileocecal region and blood vessels.

VACCINIA.—(COW POX).—The preponderance of evidence favors the opinion that cow pox is variola modified by transmission whereas the French, believe in the duality of variola and cow pox.

The prevailing polemic on this subject could possibly be solved by noting whether the reaction in variola corresponds to the VACCINE REACTION, *viz.*, a neutral duling energy.

Vaccine from animal lymph if contaminated, fails to

yield the foregoing reaction (which is obtainable through white but not through yellow glass).

SCARLET FEVER.—A positive duling energy, *i. e.*, stomach dulness persisting with the positive and dissipated by the negative pole of a bar-magnet. Obtainable when pointed electrode is held within either naris. No reaction from the exanthem.

PERTUSSIS.—A neutral duling energy, *i. e.*, stomach dulness which is dissipated by both poles of a bar-magnet. Obtainable from the skin over the larynx, trachea and bronchus. Over the latter, hold the electrode receiving the energy a distance of one inch to avoid normal heart energy.

By aid of this reaction it is important from an academic viewpoint to be able to localize the debatable site of infection in this disease.

In this disease, thymus enlargement (page 159) may be determined by an area of dulness located at or on either side of the manubrium sterni. This dull area was erroneously interpreted *elsewhere* as a dilated aorta. The author's treatment of pertussis (concussion of the 7th cervical spine) will also reduce an enlarged thymus.

INFLUENZA.—A neutral duling energy from the nostrils, and when infection is generalized, the same energy from the blood vessels.

The SPUTA in influenza will yield a like reaction.

MENINGOCOCCIC INFECTION (c).—A duling energy which is positive and negative, *i. e.*, stomach dulness persists with the positive and negative poles of a bar-magnet. The reaction clinically is obtainable from the site of infection.

PNEUMONIA (PNEUMOCOCCAL INFECTION).—A positive duling energy obtainable from the site of the lesions.

DIPHThERIA.—A duling energy which is positive and

negative, *i. e.*, stomach dulness is not dissipated by either pole of a bar-magnet. Reaction obtainable about one inch away from the angle of the jaw to exclude normal energy from the blood vessels. This precaution is unnecessary if the energy is conducted through glass (Fig. 49).

ERYSIPELAS (c).—Negative duling energy from the site of the infection.

STREPTOCOCCIC INFECTION (PUS).—Negative duling energy from the suppuration focus.

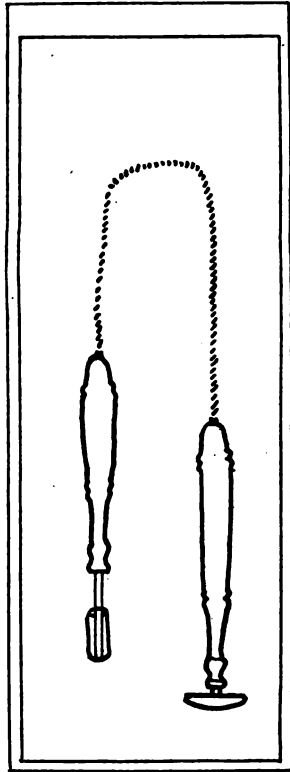


Fig. 49.—Illustrating the conduction of energy through glass (lower end of a test-tube). Owing to the influence of rods on polarity (p. 228), rubber or a glass slide is preferable.

POLYARTHRITIS.—Positive duling energy from implicated joints.

POLIOMYELITIS (acute and sporadic).—Negative duling energy from the spine. (In the norm, the 7th cervical spine yields a neutral duling energy, and the 1st lumbar spine, a negative duling energy). The reaction in poliomyelitis persists even after recovery.

MALARIA.—A positive duling energy from the spleen which persists for years after recovery. In practically every subject who has once had the disease, a paroxysm as shown *elsewhere* may be precipitated (page 132).

ANTHRAX (c).—Negative duling energy.

ACTINOMYCOSIS (c)* Neutral non-duling energy (page 43), *i. e.*, energy not sufficient to dull stomach but of sufficient potency to annihilate the dulness which would otherwise be evoked, when either the positive or negative pole of a bar-magnet is held in proximity to the stomach.

TETANUS (c)* Neutral duling energy.

GLANDERS (c)*.—Duling negative energy.

HYDROPHOBIA*.—Positive duling energy.

GONOCOCCIC INFECTION.—A duling energy which is positive and negative and is obtainable from site of infection (urethra, joints etc.). In women, the material may be obtained directly from the infection nidus placed on a cover glass and the electronic reaction made directly from the pus. Smears may be taken from the infection nidus; urethra (most frequently) cervix and vulvo-vaginal glands.

SYPHILIS.—The electronic reaction in this disease is absolutely pathognomonic provided due care is exercised.

In hundreds of patients thus far examined, this reaction was positive despite the fact that in many cases the Was-

*Cultures and specimens were placed at my disposal in the laboratory of the Veterinary Department, University of Pennsylvania.

sermann, Noguchi-luetin and other reactions were negative.

Unlike conventional tests in this disease, the electronic test appears to have no limitations.

Thus in the Noguchi-luetin reaction, the test is not applicable in the primary and secondary stage; the chief response is in the treated and late cases.

The Wassermann is not absolutely specific for syphilis inasmuch as it is not dependent on syphilitic antibodies in the blood, but upon admission to the latter of abnormal products from morbid tissues.

Again, it has been found positive in scarlatina, appendicitis, cancer, typhoid, sepsis, phthisis, diabetes and other diseases. Syphilographers concede that 50 *per cent.* of all serological tests are valueless.

"A negative Wassermann is not sufficient evidence of the cure or absence of syphilis and a positive Wassermann, unsupported by clinical evidence, is not sufficient evidence of the presence of syphilis" (Keyes).

"Errors in the diagnosis of specific diseases of the nervous system were no greater in the pre-Wassermann days than at the present time" (Weisenburg).

The electronic reaction is obtainable in every case of syphilis notwithstanding the use of Salvarsan, Neosalvarsan, Mercury, Potassium iodid and various organic arsenic compounds. IN ONLY 5 PATIENTS AMONG MANY HUNDREDS EXAMINED, NO ELECTRONIC REACTION WAS PRESENT. IT IS INTERESTING TO OBSERVE THAT, IN THESE PATIENTS (ALL PHYSICIANS) ANTISYPHILITIC MEDICATION WAS EXECUTED AT THE TIME OF THE PRIMARY LESION AND MAINTAINED, FOR PERIODS VARYING FROM 1 TO 5 YEARS.

The electronic reaction is obtainable at the time of the PRIMARY INOCULATION which assures me that even at this time the disease is no longer local but constitutional.

The Wassermann is not in evidence until about the 20th day after the appearance of the chancre. It is only in the secondary and latent period of syphilis that the Wassermann yields the surest and constant results. The specificity of the primary lesion is only determinable by demonstration of the *treponema* with the ultra-microscope.

This is a statement more radical than is usually advanced. In the preroseolar period, the large lymph spaces of the central nervous system are the site of specific infection in association with characteristic changes in the spinal fluid (Wechselmann).

Syphilologists concede from the spinal findings that the nervous system is affected in secondary syphilis (63%, Wile and Stokes). Some assume that, at the outset of the disease before generalization of the spirochetes, excision of the chancre will arrest the disease. With this positive assurance of an early diagnosis at our command, we can annihilate the disease by early treatment as sustained in the previous comment. Patients who have been treated most assiduously for years AFTER appearance of the secondaries always give the electronic reaction and one is justified (in such instances of prorogated therapy) in agreeing with Ricord—"Once syphilis always syphilis."

The electronic reaction will also show the exact site of the primary lesion. With a pointed electrode the patient or an assistant passes slowly over the penis or other suspected area, at a distance of about one-half inch. The very moment the site of the lesion is attained, there is an immediate stomach dulness. The reaction is often obtained some distance from the point of inoculation, but the most intense reaction (determinable roughly by the distance of the pointed electrode from the site of the lesion) is always at the point of inoculation.

The *T. Pallidum*, as is known, may be obtained from the healthy skin around the chancre or from the gland which drains it, even though absent from the sore scrapings.

The *Bacillus Smegmatis* yields a duling neutral energy like syphilis hence, the genitalia must be thoroughly cleansed before making the test. Cleansing of the genitalia must be supplemented by urethral irrigation.

The energy of the smegma bacillus does not traverse a non-conductor hence the use of the latter when seeking the site of primary infection. With a rubber nipple on the pointed electrode, direct contact with the tissues is permissible insomuch as normal energy from the vessels, smegma etc., will not traverse a non-conductor.

I recall an examination made in Chicago, in conjunction with Dr. G. Frank Lydston, the eminent syphilologist. The subject was a physician. The lesion was correctly located on one of the fingers. In my classes, I do not recall having made a single mistake in thus locating the site of the primary lesion. Ascertaining the site of the latter, is of value as corroborative evidence, and as a possible aid in the successful treatment of syphilis.

Reference has been made to the fact that, notwithstanding the use of mercury, the electronic reaction is nevertheless present. The exception to the foregoing is the following: If the site of the primary inoculation is submitted to several mercurial inunctions, the electronic reaction cannot be obtained for several weeks.

In submitting the foregoing fact to an eminent syphilologist, he assured me that a negative Wassermann was most rapidly achieved by using a salve of neosalvarsan at the point of primary inoculation.

Painting the area of local infection and the lymphatic glands (inguinal) draining the site with SAFRANIN

(pages 210 and 212) causes the general electronic reaction of syphilis to disappear but the reaction at the site of infection persists. The writer is disposed to believe from his clinical results that the drug employed after this manner has a curative action in syphilis.

Even when mercurial inunctions at the site of infection failed to cause a disappearance of the reaction in paralytic dementia (*q. v.*), it was effected by safranin.

The discovery of the *Spirocheta Pallida* was an important but not a final event in luetic pathogeny. Numerous observations notably those of Loeffler and Frösch, show that invisible microbes must exist which evade demonstration by culture and are not demonstrable by staining even with the ultra-microscope.

Nor must we forget SPORULATION as a factor in the pathogeny of syphilis. A spore is the most resisting object of the organic world to all chemical and physical agents. The sexual cycle of a spirochete as far as can be demonstrated begins as a sporozoite. Whether the hypothesis of toxins, invisible microbes or spores is advocated, I am firmly convinced that, the periodic exacerbations of syphilitic manifestations are due to the invasion of the organism from the primary site of inoculation, and that the use of mercurial inunctions or safranin, at the area of inoculation is a most important factor in syphilotherapy.

If the potentiality of the liver energy in syphilis is $\frac{23}{25}$ of an Ohm, and the site of the primary inoculation is pinched for about a minute, and the liver energy again determined, the latter will have risen to $7\frac{1}{2}$ Ohms.

Let us seek MALARIA as an analogy. Here the spleen has long been recognized as the habitat of the *plasmodium malariae*. Indeed Laveran, avers that the plasmodium here finds protection from destruction in the circulation.

The author has shown *elsewhere* that one can precipitate

a paroxysm of malaria (even in supposititious cases of cure) by exciting contraction of the spleen. Italian observers, claim that quinization is unable to free the system completely of the malarial parasites, and as long as the spleen is enlarged, the disease cannot be regarded as cured.

The electronic reaction for syphilis (congenital and acquired), is as follows:

Energy conducted from the LIVER, SPLEEN and VERTEBRAL COLUMN (site selected, 7th dorsal spine), causes a stomach reflex (ascertained by dulness) and the dulness is dissipated by the + and — poles of a bar-magnet; *i. e.*, the energy is neutral or isoelectronic.

Energy conveyed from the arteries, veins and heart is also neutral but insomuch as this reaction is obtainable in other diseases, the reaction as first cited should be accepted.

In my early experience with the syphilitic electronic test several egregious blunders were perpetrated. The chief and practically constant error was to differentiate AUTOINTOXICATION (page 143) from syphilis; both diseases yielding the same reaction from the sites mentioned.

In a young girl a patient of Dr. Leo Newmark, the neurologist, symptoms suggestive of a spinal cord neoplasm were present. The electronic reaction was positive and so was the Wassermann.

An operation performed by Dr. Harry Sherman, demonstrated a glioma.

In San Francisco, I saw a lady with arterial hypertension, the electronic reaction for syphilis was positive, but after the use of a purgative and several enemas, the reaction for lues disappeared.

This patient subsequently saw Dr. J. H. Kellogg, of Battle Creek. The serologist at the Sanatorium elicited a pronounced Wassermann reaction. It has been my experience that in autointoxication (page 143)

a Wassermann is invariably present when the electronic reaction could be elicited, but if purgatives and enemata were used (in doubtful cases a milk diet for a day) for one or two days, the Wassermann like the electronic reaction could not be obtained.

It is known that autointoxication owing to the increase of proteids in the blood may give a Wassermann of maximum intensity (+++) and this is also noted after repasts.

Hence, the careful serologist always makes his Wassermann before breakfast. The patient in question was subsequently sent to Noguchi. Three reactions for syphilis were made and all were negative. These were succeeded by a provocative injection which was likewise negative.

Now, in all cases of suspected syphilis when the electronic reaction can be evoked, purgation, enemata and in very doubtful subjects a milk diet are employed before concluding that syphilis is present. Despite the use of the foregoing, the syphilitic electronic reaction persists but disappears in autointoxication.

The electronic test in syphilis is further corroborated by the following:

1. Location of the primary site of inoculation and evanescence of the electronic test by anointing for several days the point of inoculation with mercurial ointment or the use of safranin. Augmentation of the potentiality of the reaction after massage of the primary site of infection (page 130).

2. The syphilitic has neither male nor female polarity (page 114) and no duling energy is obtainable from the psychomotor region (page 52). Normal sexual polarity is temporarily restored and psychomotor energy is obtainable after mercurial inunctions or the use of safranin at the site of inoculation (pages 210 and 212).

Sexual polarity is maintained in intestinal autointoxi-

cation. The absence of polarity in syphilitics may account for sterile marriages, abortions, miscarriages and stillbirths.

The fact that polarity may be restored temporarily by inunctions at the site of primary infection may be of service in avoiding the foregoing.

In syphilis, no duling energy is evocable from the normal epigastric area (Fig. 26); in autointoxication, this reaction is present.

3. In addition to the stomach dulness, there is an area of dulness in the region of the splenic flexure (Fig. 50) which

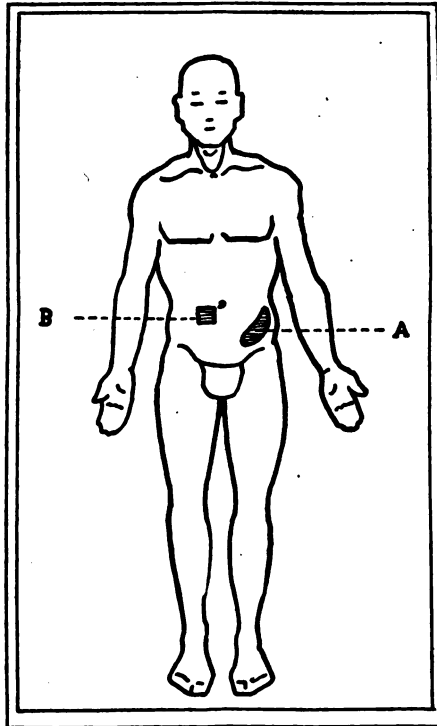


Fig. 50.—Additional areas of ventral dulness when energy is conveyed in the usual way to the stomach-region; A, dull area in syphilis and B, dull area in tuberculosis.

appears in from 15 to 45 seconds after the stomach dulness (which is immediate).

4. In syphilis, the vibrodynamometer (page 49) shows a recurrent stomach dulness at 20 Ohms. This rate is the same in mild or severe cases whether determined from the liver, spleen or spine.

In autointoxication, the same apparatus demonstrates a vibratory rate of 10 Ohms.

Vide also wave rate with the Sphgmobiometer (page 286).

The use of the biodynamometer (page 44) permits us to say whether we are dealing with a QUIESCENT or ACTIVE SYPHILIS.

When the energy is obtainable from the spine or liver in quiescent syphilis, the potentiality of the energy varies from $2/25$ to $10/25$ of an Ohm. In active syphilis, it is from 1-3 Ohms. Roughly speaking in quiescent syphilis, no reaction (stomach dulness) is obtainable when the point of the electrode is in excess of one-half inch from the skin covering the spine, liver or spleen.

Let one assume a luetic lesion of the spine or the liver, the potentiality of the energy at a given point (lesion) would exceed that of the spine or liver in general.

The biodynamometer will gauge the results of treatment. What proof has the syphilologist of his successful cures with salvarsan? Reinfection and neuro-recidives which are not infrequent are his only reliable guides.

INHERITED SYPHILIS responds to the electronic tests. Over half of the children born of syphilitic parents, who survive infancy, give a positive luetin reaction (Stoll).

The electronic reaction may disappear in hereditary syphilis after a thorough mercurial inunction treatment. This is in contrast to the acquired form (page 129).

Hypertension in early life, familial forms of neurasthenia and cardiac disease often respond at once to specific treatment, hence the importance of a diagnosis which is easily determined by the electronic test. The corroboration of the electronic test in PARASYPHILIS can only be successfully attained by the intraspinal use of spirillicides.

Serological tests make syphilitic diagnosis a laboratory question whereas the electronic tests make it clinical. Serological tests become less and less positive the longer the time that has elapsed from the date of infection and the more thorough the treatment.

In syphilitics a **STERILE MARRIAGE** may be predicted in the event the testes show luetic involvement by a neutral discharge of duling energy (page 118).

The citation of the following case is interesting: The patient was treated by several prominent physicians for neurasthenia. Serological tests were negative. Dyslalia and Romberg's sign were present. The electronic reaction was positive for syphilis as well as the reaction for dementia paralytica (page 172). After a single injection of salvarsanized serum by Dr. V. Vecki, all the symptoms evanesced.

Other cases similar in character were likewise observed in consultation with this eminent authority.

Fluid from the spinal puncture yielded a positive Wassermann (+++).

TUBERCULOSIS.—It is generally conceded that the tuberculin reaction is a phenomenon of sensitization. There are many limitations to the tuberculin test which time will not permit me to review.

The electronic reaction in tuberculosis yields a neutral duling energy. One may localize with absolute certainty the site of the lesion and ascertain its area whether located in the lung, larynx, lymphatic gland, bone, joint or other structure.

Observe that the reaction is that of syphilis but the reaction cannot be obtained from the liver, spleen or spine (provided these structures are not implicated by tuberculous lesions).

It is not difficult to differentiate between an active and a healed tuberculous lesion.

In the latter, the reaction is only obtainable when the electrode is in IMMEDIATE CONTACT with the site of the lesion, whereas in an active lesion, the reaction is obtainable when the electrode is held several inches away from the site of the lesion.

THE POTENTIALITY OF THE ENERGY DISCHARGE IS IN DIRECT RATIO TO THE BACTERIAL OR TOXIN CONTENT OF THE LESION.

Healed lesions by the safranin method (page 210) fail to show the reaction in many instances.

When tuberculosis is generalized, the arteries and veins yield a neutral energy. In a quiescent lesion, the biodynamometer may register only $2/25$ to $5/25$ of an Ohm. whereas in an active lesion, the energy potentiality may equal or exceed 10 Ohms.

Varying grades of potentiality may indicate the progress of the lesion. When the tuberculous reaction is present we may exclude MIXED INFECTION.

The coincident presence of PUS annihilates the tuberculous electronic reaction. Here is a source of error in the diagnosis of tuberculosis; the coincident presence of other organisms. When this symbiosis occurs, notably with pus, the vibratory rate gives us no clue in differentiation, inasmuch as pus and tuberculosis have the same rate of vibration, *viz.*, at 15 Ohms (stomach reflex). *Vide* sphygmobiometry (page 272) for differentiation. *Color* however aids in differentiation. If a subject (other than the patient) is

employed and the light is permitted to filter on any part of his body through BLUE coloring material (Fig. 68) one may obtain stomach dulness from tuberculosis but not from pus energy. YELLOW on the subject inhibits dulness from tuberculous energy and elicits dulness emanating from the energy of pus. The electronic reaction from tuberculosis is far more reliable than experimental inoculation in guinea-pigs.

TUBERCULOUS SPUTUM gives the same electronic reaction of tuberculosis. TUBERCULIN yields a non-duling neutral energy. Like in syphilis (page 135) an additional area of dulness to the right of the umbilicus (Fig. 50) occurs in tuberculosis and occupies an area approximately equivalent to 2 inches square. When the tuberculous energy is conveyed, the stomach dulness is apparent at once, but the umbilical area of dulness does not appear until 30 seconds later. The latter like stomach dulness disappears when yellow light is thrown on any part of the subject.

The localization of tuberculous lung lesions by the electronic test is absolutely accurate and is available when the X-rays and sputum examination are negative. On arrival of the electrode at the lesion, duling of the stomach is immediate.

In the light of the pronunciamiento by Koch in 1901, that the bacillus of bovine tuberculosis did not cause tuberculosis in cattle, it is interesting to observe that the electronic reaction for bovine tuberculosis is identical with that of human tuberculosis.

TUBERCULOSIS IN CHILDHOOD.—Primary infection in tuberculosis implicates the regionary glands, notably the bronchial lymph glands. The evolution of glandulo-pulmonary tuberculosis may be determined radiographically into 3 stages: 1. Pulmonary infection and unilateral adenop-

athy. 2. Tracheo-bronchial adenopathy (more or less latent). 3. Reinfection of apex and evolution of chronic pulmonary tuberculosis.

Reactions are taken from regions occupied by the glands (Fig 51) and by conducting the energy through rubber (page 124). In this way the normal energy from the heart, blood vessels and thymus may be excluded. The base or middle part of the lung is in the majority of cases, the primary seat of inoculation in infants and young children, but that in subjects over 10 years of age as in adults, it is the apex which is usually involved (Radiographic deductions, Lerous, Paris).

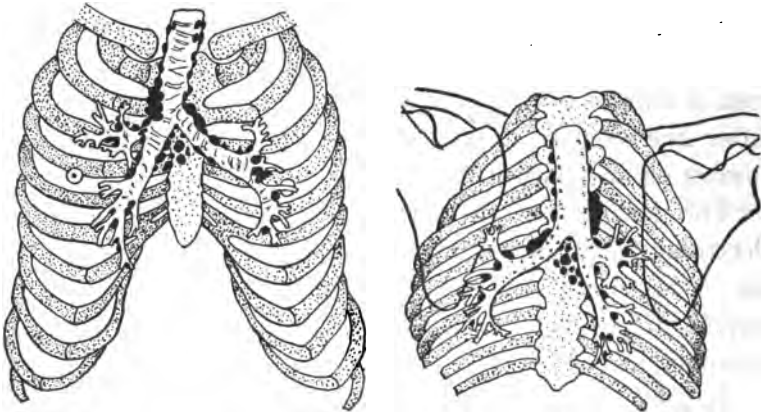


Fig. 51.—Diagrams showing the anatomical relations of the bronchial lymph glands anteriorly and posteriorly (Lucas).

When syphilis coexists with tuberculosis and the question is one of differentiation of a lung lesion, anointing the site of the primary lesion (page 131) causes the disappearance of the electronic reaction in syphilis, whereas the energy from the tuberculosis lesion is uninfluenced. *Vide* sphygmobiometry (page 286).

In ACTIVE TUBERCULOSIS there is bipolar sexuality (the tuberculous subject elicits the stomach reflex by extension of the fingers of either hand).

HYPERTROPHIC PULMONARY ARTHROPATHY.—Enlarged terminal phalanges in this condition yield the electronic reaction of tuberculosis thus justifying either Thorburn's conception that, it is a benign chronic tuberculosis affection or Marie's belief that, it is caused by the absorption of toxins. The reaction is obtainable even in the absence of any evidence of tuberculosis, and is observable in individuals with a tuberculous heredity only over enlarged phalanges or phalangeal articulations. *Vide* arthritis deformans.

LEPROSY.—All varieties of this affection show the same reaction of tuberculosis—a neutral duling energy obtainable from all leprosy lesions. I have not yet determined the vibratory rate in this disease.

ARTHRITIS DEFORMANS.—A neutral duling energy like in tuberculosis from the implicated articulations. In addition to the duling of the stomach there is likewise a dulness corresponding to the splenic flexure (Fig 50). The latter is more pronounced than the stomach dulness.

When yellow is thrown on the SOURCE of energy, no stomach dulness is obtainable in arthritis deformans whereas the opposite is true in tuberculosis. The foregoing neutral energy reaction may be modified owing to the infectious factor in the disease.

Rosenow, in a study of the lymph glands draining the implicated joints found in 35 out of 38 cases, streptococci in 14, bacillus Welchii in 9, staphylococci in 3, bacillus mucosus in 1 and the gonococcus in 1 case.

PARATUBERCULOSIS.—This refers to tuberculous affections in which the tubercle bacillus cannot be demonstrated. Many conditions with an atypic symptomatology are

paratuberculous and this refers in particular to many forms of arthritis deformans. The writer feels justified in this conclusion owing to the corroborative evidence of the electronic reaction, sphygmobiometry and the successful employment of the safranin treatment.

The foregoing assails neither the doctrine of bacillary nor histological specificity, but directs attention to a more sensitive and reliable method of recognition.

GOUT.—A neutral duling energy from the affected joints.

DIABETES MELLITUS.—A neutral duling energy from the liver, heart and blood vessels.

CHAPTER IX.

BIODYNAMGNOSIS OF DISEASES OF THE DIGESTIVE
SYSTEM AND ANIMAL PARASITES.

AUTOINTOXICATION AND COLISEPSIS.—The primary endeavor, before making an electronic reaction in intrabdominal disease, is to recall the fact that, in the norm one obtains an epigastric area of neutral duling energy. If the stomach or bladder contains fluids, a neutral duling energy can likewise be elicited. This energy does not traverse a non-conductor (page 61). Another obstacle to combat is the presence of the COLON BACILLUS. There are more than 60 species of colonic microbes, each yielding its own specific toxin.

The micro-organisms of the gastro-intestinal tract estimated by Herter, at 126 billions for the daily human excreta, yield no reaction in the norm as far as duling energy is concerned. It is always advisable however, before abdominal reactions are made to cleanse the bowels and institute a milk diet if only for a day.

INTRAABDOMINAL CONGESTION yields a positive duling energy which is dissipated (temporarily) after a series of forced inspirations.

THE BACILLUS COLI.—The reaction of the colon bacillus from cultures is identical with that of syphilis and tuberculosis, *viz.*, a neutral duling energy.

Whereas the **VIBRATORY RATE** for tuberculosis is 15 Ohms, and that for syphilis, 20 Ohms, the rate for the colon bacillus rarely exceeds 10 Ohms; in fact, the latter is the established rate for colisepsis. The colon bacillus while

identified with many types of infection, acute invasion of the kidneys and biliary passages is not uncommon. Choroiditis, pelvic exudates and a host of other conditions have with reason been attributed to colisepsis. It has been said that "a colon bacillus is not a colon bacillus, when busy in some other part of the anatomy, than the colon."

When colon bacilli are present in anomalous locations say the kidneys, in lieu of the normal positive duling energy, we would elicit a neutral duling energy. In addition to the foregoing, one would anticipate a colon bacilluria and the GENERAL REACTIONS; a neutral duling energy from the liver, spleen and spine like in syphilis due to blood invasion of the colon bacilli.

Endogenous infection from the latter, occurs usually through the intestinal wall, biliary passages and the urinary tract. My observations show the identity of the reactions in intestinal autointoxication and colisepsis; the only difference is in the grade of infection. In both conditions one finds the general reaction previously cited.

It is in the differentiation of SYPHILIS (page 144) from colisepsis that errors may accrue, yet if the following data are noted, the likelihood of error may be minimized:

1. The general reaction is common to colisepsis, auto-intoxication and syphilis.
2. Enemata and cathartics for one or two days cause the disappearance of the general reaction in autointoxication and colisepsis, but the reaction persists in syphilis.

If there is any doubt whether the intestinal tract has been efficiently drained, give the subject the following for about one week; Urotropin and sodium benzoate, each 10 grains administered by the mouth every 3 hours; if the drugs are not tolerated by the stomach, use by rectum.

3. In colisepsis and autointoxication (not in syphilis unless there is intestinal stasis) a local abdominal reaction of neutral duling energy is obtainable notably over the hepatic and splenic flexures, the sigmoid and *caput coli*. The reaction however should evanesce after efficient catharsis. Any fecal matter remaining may be recognized and localized by the electronic test.

4. In autointoxication and colisepsis, the vibratory rate from the liver, spleen and spine is at 10 Ohms.

5. The coliseptic subject does not, as a rule (p. 144), lose his normal type of polarity (page 115) and a duling energy is obtainable from the psychomotor region (Fig. 22).

The Ohmic resistance in colisepsis is low; usually not in excess of $2/25$ of an Ohm (Use of biodynamometer).

Midway between the frontal eminences (metopion), a negative duling energy may be elicited in colisepsis and autointoxication. This reaction may survive the reaction from the liver, spine and spleen after catharsis. It also occurs in alcoholism (page 170). The headache (in the metopion) from constipation and digestive disorders may be caused by the products of Enterotoxism in this region.

In parasymphilitic diseases, the parasites are found in the "dead corners" of the organism and resist the action of drugs. The cells secreting the cerebro-spinal fluid permit only the passage of substances with small molecules; more complex molecules are kept back. An analogous condition is evidently present in colisepsis. The ingestion of sodium bicarbonate causes the disappearance of foregoing reaction at the metopion.

6.—INDICANURIA is practically always associated with autointoxication but not necessarily so with syphilis.

GASTRIC CANCER.—The electronic diagnosis of carcinoma is noted elsewhere (page 181). In eliciting the reaction, note that five-sixths of the stomach lies to the left of the median

line. The PYLORUS (50% of the neoplasms develop at or near this orifice) lies midway between the right sternal and parasternal lines and the CARDIAC ORIFICE (9% of growths occur at the cardia) lies behind and a little to the left of the 7th cartilage (7th rib), $1\frac{1}{4}$ inches from the sternal border on a level with the spinous process of the 9th dorsal vertebra, and $4\frac{1}{2}$ inches from the anterior abdominal surface.

A subject other than the patient must be employed for the test. Recall the duling energy obtainable in the norm from the epigastrium (page 74). Exclude normal energy in executing the tests by conveying the energy through a non-conductor (Fig. 49 and pages 61 and 192).

A GASTRIC OR DUODENAL ULCER will yield the electronic reaction of carcinoma (page 181). This enables us to locate the ulcer but offers no aid in differentiation. The biodynamometer may be solicited for this purpose. With abatement of symptoms there will be a coincident diminution in energy discharge. Whereas the latter, progressively increases in carcinoma. In the latter, the vibratory rate is approximately 50 Ohms whereas in morbid cell activity (not carcinomatous) the rate is about 28 Ohms.

In a patient with gastric ulcer, the rate was 28. One year later, symptoms recurred, and the vibratory rate was 50. An operation demonstrated the presence of a carcinoma at the site of the healed ulcer.

For further differentiation, *vide* pages 186.

APPENDICITIS.—Reference has already been made (page 107) to the method of locating the normal appendix. In appendicitis it is impossible to locate the structure after the method in question.

In appendicitis the appendix yields autocthonous energy which may be due to the following:

1. Presence of pus;

2. Presence of fecal matter;
3. Inflammation.

STREPTOCOCCIC INFECTION gives a negative dulging energy and fecal concretions in the appendix give the reaction of the colon bacilli (page 143).

Inflammatory structures yield the reaction characteristic of morbid cell activity (page 181).

A patient is recalled, who was seen in consultation with Dr. Lawrence N. Hoffman (San Francisco). The diseased appendix was located to the left of the navel and yielded the fecal concretion reaction. The operation confirmed the electronic findings; size, location and the presence of fecal matter.

GALL BLADDER.—The biodynamic reactions of this structure presume its correct localization which has been described *elsewhere*.

A line drawn from the right acromion process to the umbilicus approximates the location of the gall bladder.

During percussion, the patient inclines the body backward as far as possible, and to relieve the tedium of the posture, the body is supported by means of the hands resting on the hips or by an assistant. Having located the lower liver border, the gall bladder is located by very light percussion. The tympanically dull area of the gall bladder is in marked contrast with the absolute dulness of the liver border. During percussion the posture of the patient must be maintained.

Many surgeons have availed themselves of the author's method of locating the structure (notably, Dr. George Jarvis, Philadelphia, Dr. D. C. Ragland, Los Angeles and Dr. Lawrence Selling, Portland) and have confirmed the findings at the operation.

Note the following concerning the gall bladder area of tympanitic dulness:

1. It descends on inspiration;

2. It diminishes or disappears after concussion of the 4th, 5th and 6th dorsal spines;
3. The area of dulness is increased after concussion of the 9th dorsal spine.

ELECTRONIC LOCATION.—The normal gall bladder area yields no duling energy. In the norm, a non-duling neutral energy is obtainable, *i. e.*, the energy is sufficient to annihilate the action of both poles of a bar-magnet (which in the norm produce stomach dulness).

A like reaction is obtainable from SODIUM GLYCOCHOLATE. The skin area in juxtaposition to the gall bladder is the reaction common to the skin; non-duling negative energy in the female (page 79). The liver yields the same energy as the gall bladder, but insomuch as the reaction is made from below upward, the liver energy may be excluded.

When a duling energy is obtainable from the gall bladder area, the polarity of the energy varies in CHOLECYSTITIS depending on the character of the bacterial invasion; typhoid and colon bacillus, pneumococcus and streptococcus. *Vide* page 286.

GALL STONES.—Here, the electronic reaction is interfered with by symbiotic reactions (page 286). Gall stones yield the following reaction; a positive and negative duling energy (page 41).

The vibrodynamometer may aid when a symbiotic reaction is present. As we move the index of our scale one finds first a stomach dulness at 15 Ohms in streptococcic infection, then no recurrence of dulness occurs until 18 Ohms is attained in the presence of gall stones, at 28, in inflammation and 50 Ohms in carcinoma.

Using the sphygmobiometer (page 272), the indices would be:

Streptococci.....	7
Gall stones.....	15
Chronic inflammation.....	15
Carcinoma.....	6

My failure to recognize the symbiotic reaction was the cause of frequent errors in diagnosis, and these failures associated with success characterized my early work.

The author has by no means eliminated all the sources of error, and he anticipates making many more diagnostic mistakes for some time to come with the electronic methods.

ABSCESS OF THE LIVER.—Here one must take into consideration the reaction of a large number of organisms and parasites etiologically concerned in abscess formation.

In **AMEBIASIS**, a neutral duling energy is obtainable from the liver. Disregarding the polarity of the energy elicited from the liver, it suffices to know that when the symptoms suggest liver abscess, a duling energy evocable from a definite liver area suggests the location of the focus of suppuration.

A liver abscess was thus located in a patient seen in consultation with Dr. Chas. V. Cross, (San Francisco).

TAPEWORM (*solium* and *mediocanellata*).—Before an electronic diagnosis is executed observe the precautions already cited (page 143). The electronic reaction is very pronounced, and is obtainable even when the electrode is held some distance from the abdomen. The reaction is a duling negative energy, *i. e.*, the energy conveyed produces stomach dulness which is dissipated by the positive pole of a bar-magnet, and maintained by the negative pole.

The energy also produces a sigmoid flexure dulness (Fig. 50) which is dissipated by the positive and maintained by the negative pole of a bar-magnet. Unlike the energy from the colon bacillus, if the energy in teniasis is

passed through a non-conductor (page 124) no duling of the stomach nor sigmoid is obtained.

Localization of the duling energy to a definite area may aid in diagnosis.

The mediocanellata, is the more common of the two varieties in the United States. Its habitat is the small intestine. At autopsies the head is usually fastened below the pylorus, and the rest of the worm inhabits the small intestine, rarely going beyond the ileocecal valve.

TRICHINIASIS.—Tissues containing the trichina spiralis yield a positive duling energy. The symptomatology of this affection is usually concerned with the migration of the embryos to the muscles, and the electronic reaction over the latter in association with other signs of the affection may establish the diagnosis.

CHAPTER X.

BIODYNAMGNOSIS OF DISEASES OF THE RESPIRATORY AND CIRCULATORY SYSTEM.

LARYNGITIS.—In the diagnosis of syphilitic or tuberculous laryngeal affections, *vide* the electronic reactions for these diseases. In the application of the test, one electrode is placed over the larynx, and the other in the usual location approximating the stomach of the subject.

Some forms of laryngitis specified as chronic, yield the electronic reaction of tuberculosis, and are amenable to the safranin treatment (*q. v.*).

BRONCHIAL ASTHMA.—A positive duling energy is obtainable from any part of the spinal column. This reaction is probably caused by some disturbance in the function of the pituitary gland (*q. v.*). Asthma is unquestionably a vagus neurosis, and I believe that my investigations confirm the conclusion of Sajous¹⁴, *viz.*, that the predisposing cause of the disease is hypersensitiveness of the vagal center in the posterior pituitary body.

A reliable preparation of pituitrin likewise yields the same reaction obtainable from the spine in bronchial asthma (*vide ut supra*).

The average energy from the spine in asthma is approximately $13/25$ of an Ohm, and the intensity of the reaction is in proportion to the severity of the attack.

The reaction is practically always present even in the interparoxysmal period. A positive duling energy is always

obtainable from the nasal secretion in asthma but not from the sputa.

A spontaneous flow of cerebrospinal fluid through the nose has been observed, and it is not unlikely that the beneficent action of the iodides in asthma is due to the medicamentous rhinorrhea which hastens the output of the pituitary secretion.

The relation of the nasal mucosa and asthma has been established. Cyon, has shown that destruction of the pituitary body completely inhibited the sensibility of the nasal mucosa.

HYDROTHORAX.—The reaction for transudates is a neutral duling energy. The area occupied by the fluid can be accurately determined by the foregoing reaction. The subject employed for demonstrating the stomach reflex must be grounded with both feet. If between one foot and the ground a board covered with shellac varnish or other non-conductor is interposed, it is impossible to elicit the stomach reflex from the energy derived from transudates.

HEART.—The SUFFICIENCY* of this structure is determinable by the biodynamometer. While the scientific diagnostician strives to make the clinical correspond with the anatomic findings, or in other words, pictures to his mind the pathologic conditions prevailing in disease, the less radical physician is often content, and reasonably so, with a FUNCTIONAL DIAGNOSIS. The latter takes cognizance of anomalies in the physiologic functions of the viscera. Thus a functional takes precedence over a pathologic diagnosis, for the reason that physiologic fluctuations may be resident in an organ even before a pathologico-anatomic

*The author believes that the first systematic and detailed attempt to study visceral sufficiency was embraced in his work "*Diagnostic Therapeutics*," Rebman Co., N. Y., 1910, pages 748 to 1014.

substratum is assumed to exist. The advances made in the pathology and therapeutics of the stomach have been mainly along the lines of functional diagnosis. Gower's observed, that, "The diseases of which we know the least pathology are the diseases which we treat successfully."

Numerous tests have been advocated to determine heart sufficiency in the cardiopath.

In physics, work and energy are interchangeable terms. With the biodynamometer (page 44), the energy obtainable from a normal heart varies from $5/25$ to $7/25$ of an Ohm.

When the sufficiency of the myocardium is to be determined in a cardiopath, energy measurement should be obtained from the right and left ventricles, insomuch as a disproportion in the energy output is often present.

This may be concretely illustrated in a patient referred to me by Dr. A. E. Foster (Kalamazoo);

Energy output from the left ventricle, $3/25$ of an Ohm;

Energy output from the right ventricle, $1/25$ of an Ohm;

The patient suffers from periodic attacks of lung edema which are probably caused by the disproportion in the strength of the two ventricles. When the *heart reflex* of the right ventricle (myopathic reflex) is evoked after a *séance* of muscle percussion, the energy output of the right ventricle is augmented to $3/25$ of an Ohm.

Cardiotonic medication would accentuate the disproportionate enfeeblement of the ventricles.

The present tendency is to disregard the neurogenic cardiac mechanism (in which the source of energy is in the higher centers mediated through the vagi and sympathetic nerves) and to substitute therefore, the myogenic theory, which places the source of action of the heart in the muscle itself.

This is unquestionably a source of error which can

easily be disproved by the biodynamometer when energy measurements are made after an atropin injection (page 25).

The measurement of *vagus tone* also proves that the visceral sufficiency of the heart is a neuro-muscular question. Aside from its value in determining the neurogenic factor in cardiac disease, the estimation of *vagus tone* is of great importance in a variety of diseases dependent on *hypertonia* or *hypotonia* of this nerve.

To measure *vagus tone*, the energy is taken by the electrode from the 7th cervical spine. In the norm, the *vagus tone* is from 1 to 3 Ohms. In *vagus hypotonia*, say in *exophthalmic goitre*, it varies from $1/25$ to $3/25$ of an Ohm. In *vagus hypertonia*, say in *bronchial asthma*, it may be as high as 5 Ohms, but it decreases in proportion to the abatement of the symptoms.

FATTY OVERGROWTH.—In the cor adiposum dependent on an excess of normal subpericardial fat, the biodynamometer may or may not show insufficiency of the organ.

In all instances however, the normal polarity of the ventricles is modified (page 73), and the reaction from both ventricles is a neutral duling energy.

This same condition prevails when the KIDNEYS are enveloped in an excess of adipose tissue, the normal positive duling energy becoming a neutral duling energy.

The polarity of cardiac energy is likewise modified in ANGINA PECTORIS when the coronary vessels are calcified. A neutral duling energy is obtained over a very limited area corresponding to the descending branch of the left coronary artery as it passes along the anterior interventricular groove to the apex of the heart, and an equally narrow area of neutral duling energy along the extreme right border of the heart in the course of the right coronary artery.

ANEURYSM.—This may be topographically defined (page 105). The normal artery yields a negative duling energy, but when the arterial lesion is syphilitic, the reaction is a neutral duling energy. This is in harmony with the observation that in *syphilitic mesaortitis*, spirochetes are demonstrable in the lesions. Aside from the latter all blood vessels in syphilis yield a neutral duling energy.

In the employment of Abrams' treatment for aneurysms,* antisyphilitic medication has apparently little action on the mesaortitis until the volume of the aneurysm is slightly reduced.

When calcareous plaques are present in the aortic wall in the aortitis of arteriosclerosis, a neutral duling energy is also elicited. The absence of the syphilitic electronic reaction (page 133) however, would exclude syphilis as an etiologic factor.

Auto-intoxication yielding a like reaction from the arteries must likewise be excluded.

If an extremity in the norm is exsanguinated by an Es-march bandage there is no duling energy from the blood vessels and any energy elicited is caused by calcareous plaques or syphilis (if the vessel is invaded by spirochetes).

*Vide author's contributions on this subject:

British Medical Journal, July 8, 1911 and *La Presse Médicale*, Oct. 4, 1911.

CHAPTER XI.

BIODYNAMGNOSIS OF DISEASES OF THE
KIDNEYS AND DUCTLESS GLANDS.

The functional test of the kidneys is similar to that of the heart (page 153). The normal kidney yields an energy equal to from $3/25$ to $4/25$ of an Ohm. In disease implicating the functional integrity of the organ, the energy output is at zero of the biodynamometer.

In the norm, the kidneys yield a positive duling energy, which fact permits of their accurate location by the electronic test. In **HYDRONEPHROSIS** and **NEPHROLITHIASIS**, a neutral duling energy is elicited. It must be recalled (page 154) that an excessive deposit of fat may yield a like reaction, but the latter would be elicited from both kidneys.

All **CALCULI** wherever located give the isoelectronic reaction *viz.*, a neutral duling energy. If the reaction for a stone in the **BLADDER** is executed, this organ must first have its contents voided. If a renal calculus were present, the neutral duling energy would be limited, the balance of the kidney region however, would yield its normal positive energy.

The energy of calculi traverses a non-conductor and if the latter is used in exploring the kidneys and a reflex is elicited, it suggests a **PATHOLOGICAL** lesion.

The presence of an **URETERAL CALCULUS** would yield a neutral duling energy somewhere in the course of the ureter which is indicated on the posterior aspect of the trunk, by a line drawn vertically upwards from the

posterior superior iliac spine to the level of the process of the 2nd lumbar spine (Fig. 52).

SUPRARENAL BODIES.—Surmounting the kidneys is a small area (Fig. 53) approximately the size of a dime from which a neutral duling energy is obtainable. Directly below is the positive duling kidney energy. The pointed electrode (Fig. 19) is used for conducting energy from the adrenal gland.

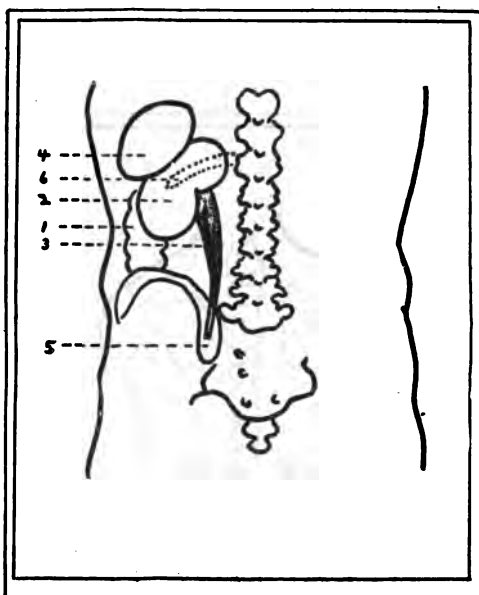


Fig. 52.—Illustrating the course of the ureter, 3; 1, descending colon; 2, left kidney; 4, spleen; 5, posterior superior iliac spine; 6, 12th rib.

Adrenal energy is very low in the norm; not exceeding $\frac{2}{25}$ th of an Ohm. One may artificially increase the activity of the gland up to $\frac{10}{25}$ th of an Ohm by brief concussion of the 2nd and 3rd cervical spines as described *elsewhere*.

The latter vertebral point, corresponds to the exit of the phrenic nerve which it is assumed, stimulates the su-

prarenal gland secretion by its phrenico-abdominal branches which innervate the gland.

All pharmaceutical preparations from the suprarenal gland give a neutral duling energy.

HYPERTENSION is often associated with hyper-adrenalism. Hypo-adrenalism is associated with asthenia, low blood-pressure, profound mental depression and occasionally by pigmentation. We have already noted how one may augment the suprarenal activity. Cases specified as psychasthenia, hysteria, neurasthenia, etc., are often dependent on adrenal insufficiency. The latter condition is benefitted by adrenal substance.

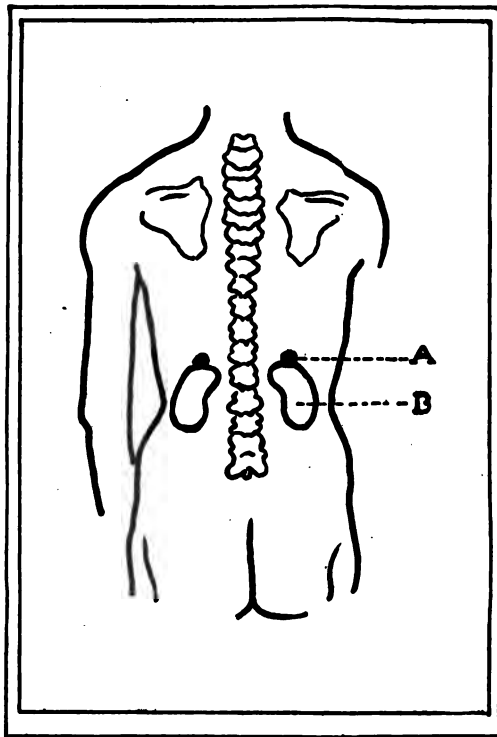


Fig. 53.—Electronic areas of duling energy; A, suprarenal gland and B, kidney.

A simple test for ADRENAL INSUFFICIENCY is as follows: The oral administration of suprarenal extract to normal individuals does not cause a rise of blood-pressure, and when a rise follows exhibition of the drug by the mouth, it indicates suprarenal inadequacy. Blood-pressure is first determined and then 3 grain doses of the extract are administered thrice daily for 3 days. An increase of pressure suggests Addison's disease, if there is no valvular cardiac lesion. A pressure rise of more than 10 *per cent.* is absolutely diagnostic of adrenal insufficiency. No drug should be taken for 3 days preceding the first observation.

THYMUS GLAND.—This gland yields a neutral duling energy, *i. e.*, the energy producing stomach dulness is dissipated by both poles of a bar-magnet. A like reaction is obtainable from pharmaceutical thymus preparations.

The thymus attains its maximum size at the end of the second year, then it atrophies and disappears at puberty.

A persistent thymus causes localized dulness along the left sternal border from the 2nd to the 4th rib. The normal dulness is in the shape of a truncated cone with base at the sternoclavicular junction and the apex at the level of the 2nd rib. In the norm the gland does not extend more than 6 cm. beyond the sternal margins.

Percussion is as untrustworthy in defining this gland as the electronic method is certain. In the infant of 8 months, the distance between the manubrium sterni and the vertebral column is only 2.2 cm., and it is quite evident that the slightest increase in the size of the gland will produce pressure symptoms on important structures.

An enlarged thymus is associated with *pertussis* (page 160), laryngismus stridulus, exophthalmic goitre (page 161), etc.

In children, an enlarged thymus may produce all types of embarrassed respiration, notably an asthmatic type.

To fortify the electronic diagnosis of an enlarged thymus note that when the 7th cervical spine is concussed for one-half minute, by aid of a plexor and pleximeter (Fig. 54), the electronic area of thymic dulness is diminished. The latter fact probably explains the specificity of the author's treatment in exophthalmic goitre, and the many failures of operative treatment owing to the inability of influencing the thymus which is specially concerned in the syndrome of this affection.



Fig. 54.—Plexor and pleximeter employed for eliciting mechanically the visceral reflexes of Abrams (*Vide Spondylotherapy*, 5th edition, p. 9).

In *pertussis*, the substernal dulness noted *elsewhere*, is probably caused by an enlarged thymus and not an aortectasis. This modified conclusion was suggested by the electronic reaction.

THYROID GLAND.—This yields a neutral non-duling energy. This reaction identifies it from other structures. In the norm the energy discharge ranges from $1/25$ to $5/25$ of an Ohm; in hyperthyroidism, it ranges from 1 to 10 Ohms with corresponding reduction in vagus tone (page 154).

With abatement of the symptoms of hyperthyroidism, vagus tone is augmented and thyroid energy discharge is decreased.

To measure the non-duling energy from the thyroid with the biodynamometer, one recalls that either pole of a bar-magnet will produce stomach dulness. Connection by aid of the electrodes and cord is made in the usual way (page 36). Hold either pole of a bar-magnet in front of the stomach. Note that no dulness of the latter is produced during the time energy is conducted with the index of the biodynamometer at zero of the scale.

Slide index along until dulness of the stomach is produced. The latter point indicates the potentiality of the thyroid energy discharge.

When a DULING ENERGY from the thyroid gland is elicited, one must suspect MALIGNANCY.

In hypothyroidism (cretinism and myxedema), the energy discharge from the thyroid is usually nil. Thyroid feeding will increase the energy output. The electronic test shows that the thymus is invariably enlarged in exophthalmic goitre, a condition which cannot always be attributed to a process of compensation. There is a THYMOGENOUS TYPE of exophthalmic goitre and the thymus is the chief structure implicated.

PARATHYROID GLANDS.—The parathyroid bodies usually in two pairs on either side of the lateral lobes of the thyroid gland, yield a positive non-duling energy. Hold electrode in juxtaposition to the parathyroid bodies $\frac{1}{4}$ inch away so as to avoid energy from the adjacent vein.

SPLEEN.—This yields in the norm, a non-duling neutral energy with a potentiality of $\frac{4}{25}$ of an Ohm. The latter is determined like all non-duling energies (page 43).

PITUITARY BODY.—In the norm (excepting the 7th cervical and 1st lumbar), there is no duling energy from the spine.

For convenience, the 7th dorsal spine is employed for determining the pituitary energy. The electronic reaction of pituitary preparations is a duling positive energy (page 41).

The secretory activity of the pituitary body may be determined by concussing the 7th cervical spine (Fig. 23) for a few seconds and then determining by aid of the biodynamometer the potentiality of the energy discharge from the 7th dorsal spine. In the norm, it varies from $1/25$ to $8/25$ of an Ohm. In hyperpituitarism (asthma) it may be as high as 1 Ohm. The pituitary spinal reaction lasts several minutes after concussion (*Vide* asthma).

In two cases of the Frölich type of hypopituitarism with adiposity and sexual infantilism, no reaction at all was obtainable from the 7th dorsal spine after concussion of the 7th cervical spine. In the norm, after concussing the 7th cervical spine, the electronic reaction from the 7th dorsal spine is a duling positive energy.

The wavemetric index of the pituitary secretion with the variable condenser (page 272) is at 15. Even in the absence of hypophysial symptoms, increased function of the pituitary gland (hyperpituitarism), conduces to remarkable changes in growth (gigantism) whereas the converse condition (hypopituitarism), results in adiposity with skeletal and sexual infantilism. The various types of infantilism are with difficulty differentiated, but my observations indicate that the majority of cases are identified with functional insufficiency of the pituitary gland.

The intensity of the pituitary spinal reaction bears an important relation to the size of the individual, and it is not impossible to anticipate that, by this means the stature of an individual may be predicted. The following estimates made in adults indicate the trend of my argument:

HEIGHT	SEX	BIODYNAMOMETRIC INDEX
5 feet 7 inches	Female	23/25
5 feet 2 inches	Female	3/25
4 feet 9 inches	Female	Reaction not beyond zero.
6 feet 2 inches	Male	22/25
Midgets (3 examined)		No pituitary reaction.
Giant	Male	1.5 Ohms.

In syphilis and autointoxication, duling energy is obtainable from the spine hence a pituitary reaction cannot be made. The energy from the spine may be eliminated temporarily in both affections (pages 131 and 144).

CHAPTER XII.

BIODYNAMGNOSIS OF NERVOUS DISORDERS AND NEOPLASMS.

TOPOGNOSIS.—The recognition and absolute location of PAIN objectively may be attained by the electronic test. The value of the latter in forensic medicine can be appreciated. To economize time, the patient is only requested to specify the region of the body where the pain is experienced. The discharge in pain is a neutral duling energy. For all practical purposes it suffices to remember that, if from a definite region no duling energy is produced in the norm, any duling of the stomach is caused by pain (excluding of course any energy from pathological sources).

With a pointed electrode (page 45), the area of pain can be accurately defined and marked with a dermatograph. The intensity of pain may be estimated by the biodynamometer, thus excluding the personal equation of the patient respecting the progression or retrogression of his pains.

REFLEX PAINS yield no reaction, a matter of importance when pains are to be traced to their source.

Roughly, and without the aid of the biodynamometer, one may locate the site of the greatest pain intensity by noting at what distance the electrode from the painful area can produce stomach dulness. The greater the distance of the electrode, the greater is the intensity of the pain.

Administer an analgesic or inhale sufficient chloroform to subdue the pain and the electronic reaction of pain evanesces; only to return when the pain recurs.

Pain energy traversing a non-conductor will not produce

stomach dulness. Thus, if there is pain over a neoplasm or a tuberculous area, by conducting the energy through a non-conductor, any stomach dulness ensuing, is from the morbid tissue and not from the pain.

ANESTHESIA.—This is likewise capable of objective demonstration. The normal skin yields a negative non-duling energy on the left side in a male in accordance with aural polarity (*q.v.*); the anesthetic skin, a **POSITIVE** non-duling energy.

PARALYSIS.—When connection is made between the skin over a normal muscle and the stomach, only the normal skin reaction is obtainable. If the muscle in proximity to the electrode is struck, a neutral duling energy of the stomach is elicited. This is the normal electronic muscle reaction. If this same test is executed over a paralyzed muscle, the foregoing reaction is negative.

In functional paralysis, however, the normal electronic muscle reaction is present.

EPILEPSY.—All theories concerning epilepsy are unproved hypotheses. The majority of writers concede that the paroxysms are discharged from the cerebral cortex, notably the cortical motor regions.

Before presenting my conclusions concerning a large number of epileptics whom I examined, certain fundamental facts must be reviewed.

We know that from the left psychomotor area (page 72) in the male and from the right psychomotor area in the female, sufficient energy can be conveyed to the stomach to evoke dulness of the latter.

We also know that, when the end of the connecting wire is distant beyond $\frac{1}{4}$ inch from the psychomotor area, the energy is insufficient to elicit stomach-dulness.

All epileptics discharge a neutral duling energy from

both psychomotor areas and this electronic reaction is characteristic of this affection. My measurements show no increase in the energy discharge either from the psychomotor area normally discharging energy nor from the area which in the norm discharges no energy.

Before puberty where polarity is not yet expressed, there is nevertheless a discharge from the right psychomotor area in the male and from the left psychomotor area in the female.

In JACKSONIAN EPILEPSY, the same reaction is obtainable, but the energy discharge is augmented. Thus, in a case seen with the neurologist, Dr. C. C. Beling (Newark, New Jersey), the energy discharge from the right psychomotor region was 18/25 of an Ohm and from the left psychomotor region, 8/25 of an Ohm. In this patient the localized convulsions were on the left side (*Vide* electro-pathology, page 12).

The psychomotor discharge varies in the norm with the intellectual activity of the subject. The following are a few estimations made with the biodynamometer selecting the left psychomotor area in the male and the right in the female:

Female	Average intellection but placid	4/25 of an Ohm.
Male	Diminished intellection and very placid	2/25 of an Ohm.
Male	Highest grade of intellection and intellectually active	4 Ohms.
Male	Same subject, but after 2 hours of intellectual rest	2 Ohms.
Male	Intellectual but placid	14/25 of an Ohm.
Male	Physician, intellectually active	1 Ohm.
Male	Physician, average intellection	14/25 of an Ohm.
Male	Physician, age 72 years, intellectually active	17/25 of an Ohm.
Female	Intellectual and mentally active	16/25 of an Ohm.
Female	Very restless	20/25 of an Ohm.
Female	Same subject after several days use of bromides	1/25 of an Ohm.
Female	Psychasthenic with brain constantly active	3½ Ohms.

The epileptologist will find in the *petit mal* type in atypical epilepsy, and in the epileptoid attacks of dementia precox, a ready means of diagnosis with the electronic test. If we agree with Fournier, epilepsy may be a parasymphilitic affection.

The intestinal autointoxication reaction (page 143) is frequent in epilepsy.

RAYNAUD'S DISEASE.—The writer has had an opportunity of examining a number of these individuals, and has noted the reaction of autointoxication (page 143). Therefore he is inclined to the belief that enterosepsis plays an important part in this disease. In several patients, intensive treatment with the object of ridding the alimentary canal of enterotoxins, eventuated in cure.

NEURASTHENIA.—This is essentially a cerebraesthesia. Fatigability is the main symptom in this disease and must be referred to the brain centers. Sustaining a voluntary muscle contraction is determined by the endurance of the brain centers and not the muscles. The moment exhaustion of the centers occurs, the muscle contraction ceases.*

Fatigue* is caused by the accumulation of fatigue products and all work is the translation of chemical energy. In neurasthenia, an energy which is POSITIVE and NEGATIVE is obtainable over the entire occipital region with the maximum intensity of the reaction at the external occipital protuberance (Fig. 57). This reaction is evocable artificially by subjecting an individual to intense cerebral activity but soon disappears with brain rest.

Fatigued muscles yield a like reaction. The intensity of the head sensation (*casque neurasthenique*) in neurasthenia corresponds with the intensity of the electronic reaction. *Vide*, psychasthenic reaction (page 174).

PARALYSIS AGITANS.—Neutral duling energy from the spine, but unlike the reaction in syphilis, there is no duling energy from the liver. Neither psychomotor region yields any duling energy in advanced cases. The latter suggests senility of the cerebral cortex.

*Abrams, Autointoxication, E. B. Treat & Co., New York.

ATONIA SYMPATHETICA.—This neonym suggested itself to the writer in response to the new methods of recognizing disease by the electronic methods. Affections of the cervical sympathetic are readily recognized but implication of the thoracic and abdominal portions, are beyond the ken of our diagnostic acumen. The pathology of the sympathetic is expressed in functional anomalies; that of the cerebrospinal nerves, by pain. From the subjective viewpoint, the former is subconscious and the latter conscious pathology.

Clinically, irritation of the cardiac plexus produces anginal symptoms; of the solar plexus, the pain of lead colic, hypertension and constipation. The reverse condition (paralysis) results in acute gastrectasis, intestinal paralysis and collapse. Mucomembranous colitis, the visceral crises of tabes, orthostatic albuminuria, some forms of glycosuria, pigmentary cutaneous changes, etc., have likewise been attributed to disease of the abdominal sympathetic.

The officialists, constantly report extraordinary cures by their methods but the conception of the latter, by the introspectionist, cannot merit the imprimatur of the scientist.

The writer has approached this subject in another direction. When the sphincter an. or urethra is dilated so as to produce irritation, or dilated to the point of exhaustion, one finds that, in irritation only, a **NEUTRAL DISCHARGE** of energy is obtainable in the entire region of the dorsal vertebrae at a distance of 5.6 cm. on both sides from the spinous processes.

In the norm, there is a discharge of energy from the 7th cervical and 1st lumbar spines. From these situations, the area discharging energy extends on either side to a distance not exceeding 3 cm. from the spinous process.

When the orifices are dilated to exhaustion, no energy discharge can be elicited, as in the norm from the 7th cervical

and 1st lumbar spines and from the epigastric area, (Fig. 26).

The middle cervical ganglion corresponds approximately to the 7th cervical spine and the solar plexus, to the 1st lumbar spine and epigastric area.

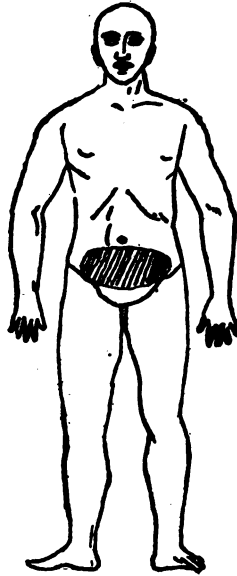


Fig. 55.—Area of abdominal dulness in Splanchnic Congestion.

In addition to the foregoing, the splanchnic mechanism (page 81) is implicated. From a clinical viewpoint the contraction of the vessels is maintained by the autonomic system (*vagus*) and the dilatation by the *sympathetic system*. Irritation of the latter conduces to dilatation of the vessels and abdominal areas of dulness (Fig. 55) are demonstrable. When the sympathetic is enervated from overstimulation, the converse condition (Splanchnic Anemia) is present. The symptomatology of splanchnic angioneuroses is discussed *elsewhere*.

In irritation of the solar plexus, an epigastric area of tenderness is demonstrable directly over the celiac axis ($1\frac{1}{2}$ finger breadths to the right of the median line).

ALCOHOLISM.—When a small quantity of alcohol is taken, a POSITIVE duling energy may be elicited (within a minute) from the liver and spleen but it soon disappears. The reaction is permanent in chronic alcoholism. From the metopion, there is a negative duling energy (page 145).

VISION.—Reference has already been made to visceral sufficiency (page 152). In the norm, the left eye in the male yields a positive, and the right eye a negative duling energy. This polarity is reversed in the female (page 72).

Disregarding polarity, and only measuring the energy discharge from the eye with the biodynamometer, one is enabled to say that, the energy discharge is in direct proportion to visual acuity.

The following citations establish my viewpoint:

Subject 1	Normal vision	Both eyes, 9/25 of an Ohm.
Subject 2, (Microscopist)	Extraordinary vision	15/25 of an Ohm.
Subject 3	Right eye (normal vision)	9/25 of an Ohm.
	Left eye blind from panophthalmitis	No duling energy.
Subject 3	Right eye (vision normal)	9/25 of an Ohm.
	Left eye (vision reduced)	3/25 of an Ohm.
Subject 4	Right eye (normal vision)	12/25 of an Ohm.
	Left eye (vision very much reduced)	2/25 of an Ohm.

OPHTHALMOATONIA.—This neologism refers to ocular affections caused by *vagus hypotonia*. Modifications of vagus tone are identified with hysterical and neurasthenic forms of amblyopia and asthenopia. Recognition of the latter is possible by the maneuvers suggested on page 154. Energizing the vagus may be effected by human energy. The diagnosis of hypotonic disturbances of AUDITION are amenable to like maneuvers (page 171).

CATARACTS.—The pathology of this condition is obscure. The usual hypothesis assumes changes of the lens protein by nutritional disorders but a more recent theory suggests that, salts of calcium, magnesium and silicates (present in senile cataractous human lenses), so modify the lens protein that the short waves of the spectrum precipitate the protein resulting in the opacity of cataract.

In the very few electronic studies made by the writer, a NEUTRAL duling energy was obtained, and the vibratory energy rate suggested tuberculosis. It is not unlikely that the cataract in some instances is a paratuberculosis (page 141).

HEARING.—This, like vision, may be determined objectively. No duling energy is obtainable from the ears; only a non-duling negative energy. One electrode is placed at the meatus of the ear to be examined, the other in the usual situation. Note at what point on the scale of the biodynamometer, the positive pole of a bar-magnet produces stomach dulness after the method described on page 45.

In the norm, the registration is 20/25 of an Ohm whereas in diminished audition, it may be reduced to 1/25 of an Ohm or to zero in absolute deafness.

PSYCHOSES

Bolton, in "The Brain in Health and Disease," a book just issued, makes the following significant statement: "Our present-day knowledge of the functions of the brain, and of the subject of mental disease is at least a century behind that of other branches of physiology and medicine."

A careful study of the work of this eminent authority, which is based on clinico-histo-pathological proof of cerebral function, establishes a reason why my psychotic reactions are demonstrable over definite cerebral regions.

DEMENTIA PARALYTICA.—Noguchi, demonstrated the *spirocheta pallida* in the stained specimens of the brain in general paralysis. Forster and Tomaszewski, demonstrated living spirochetes in 8 out of 20 cases examined by aspiration of the cortical substance. The author has examined a large number of paretics, and ascertained the following invariable electronic reaction; when a connection is made between either frontal eminence of the subject and the gastric area, dulness of the stomach immediately ensues and the dulness is dissipated by both poles of a bar-magnet. Aside from this neutral energy, one may obtain the same reaction from the liver, spleen and spine (page 133) *i. e.*, the general syphilitic reaction.

In the norm and in syphilis (without cerebral involvement), no energy sufficient to dull the stomach is obtainable from the frontal eminences. Great care must be exercised in recognizing the many areas on the head from which energy is normally discharged (Fig. 56).

Error may be eliminated by consulting page 144, and furthermore, by recalling the fact that, the energy discharge of other areas is positive or negative and *not neutral as in syphilis* (excepting psychasthenia). It is true however, that if the tip of the electrode is directly over an artery or vein, one may elicit the reaction of a neutral energy (in syphilis) but if the frontal eminence is alone selected, errors of interpretation may be avoided.

The syphilitic shows no polarity and it is impossible to obtain sufficient energy to dull the stomach (as in the norm) from the left psychomotor area in the male and from the right psychomotor area in the female (page 72).

Many cases of insanity examined by me at the asylums were found to be cases of brain-syphilis, and this was notably the case in patients diagnosticated as dementia precox.

The electronic test is destined to serve of great value in the differentiation of a host of mental maladies. Already the serological diagnosis of syphilis bears results in the passing of paresis. The close relationship between syphilis and the latter has always been recognized, but with the distinc-

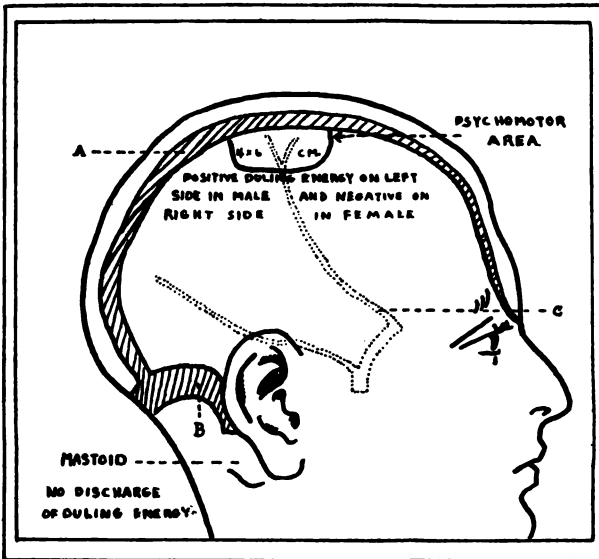


Fig. 56.—Cerebral sinuses and psychomotor region (4x6 cm. in area as elicited electronically). As a rule, only the psychomotor region (left side in a normal male and on right side in a normal female) yields a duling energy. There is no energy discharge from the mastoid, a fact of importance in eliciting the reaction for pus.

tion however that paresis was a parasyphilitic affection due to the indirect action of toxins, whereas it is now known that the *treponema pallidum* is indirectly concerned in its production.

The passing of parasyphilis emphasizes the fact that, within a few weeks after the primary inoculation, the spirochetes invade every tissue of the body, and to prevent spirilloses of the nervous system heretofore designated as

parasyphilitic, energetic treatment must be commenced at the time of the primary inoculation.

The foregoing suggest the value of the electronic reaction in the early diagnosis of syphilis (page 133).

The observations of Bolton, show that, in paralytic dementia, the brunt of the cortical lesion is borne by the PREFRONTAL REGION.

Familial syphilitic infection in general paresis has recently been emphasized by Haskell, who finds that in 38.18 *per cent.* of conjugal mates of parietic patients, syphilis was demonstrable and that, paresis from this cause is more frequent than when the infection is from non-metasyphilitic sources.

DEMENTIA PRECOX.—A NEGATIVE duling energy is obtainable from the frontal eminences. The main area of wasting in dementia lies in the prefrontal region (Bolton).

PARANOIA.—In either sex the electronic reaction is as follows:

Right psychomotor region—Neutral duling energy;
Left psychomotor region—Duling energy which is positive and negative.

The reaction from the latter area signifies that, the energy dulls the stomach, and that it is dissipated by neither pole of the bar-magnet (page 41).

The male and female types of polarity coexist (epicene reaction, page 115). No reaction is obtainable from the frontal eminences.

PSYCHASTHENIA.—At a distance of 5.6 cm. on either side of the external occipital protuberance, a NEUTRAL duling energy is obtainable in this affection (Fig. 57).

The writer has examined a large number of these patients at various periods of life and has found the same reaction; In consequence of which, he is inclined to the belief that,

psychasthenia is congenital and due to some inherent weakness or stigma in the geography of the cerebral cortex.

No definite line of demarcation exists between what we call normal and that of confirmed insanity. "It is impossible to make of pathological states of the mind, morbid entities" (Dubois.) The intensity of the psychasthenic reaction varies with the condition of the subject, but the electronic reaction is invariably present.

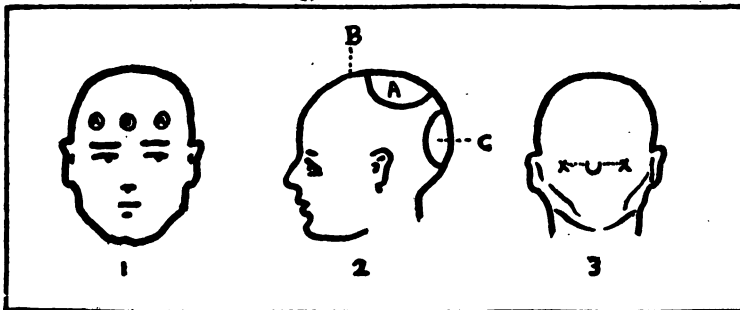


Fig. 57.—Electronic craniography. 1 (A,A), Energy discharge in dementia precor and dementia paralytica and B, Metopion, which yields an energy discharge in colisepsis and alcoholism; 2 (A), Modified electronic energy in paranoia and epilepsy; B, energy discharge in some cases of hysteria; C, energy discharge in neurasthenia; 3 (XX), Energy discharge in psychasthenia.

To illustrate the accuracy of diagnosis in psychoses by the electronic reactions, the following incident may be cited: At the suggestion of Dr. C. C. Beling (Newark, New Jersey), the writer visited the asylum for the insane at Essex County in the same State. The superintendent, Dr. Guy Payne, courteously placed his patients at our disposal. He was requested to place his patients behind a screen, so the the writer could be given no clue concerning the patients from whom the electronic reactions were obtained.

The group of patients included paranoiacs, epileptics, dements, etc. One of the physicians in attendance was selected (as the subject) owing to his efficient stomach reflex.

The energy from the patients behind the screen was conducted by a long insulated cord. No error in diagnosis was made. In one patient, a chronic epileptic, the reaction for dementia in lieu of epilepsy was elicited.

The superintendant admitted however, the coexistence of epilepsy and mental disease, and that the occurrence of epilepsy in the subjects of dementia is not infrequent. Alopecia may modify head reactions (p. 297).

HYSTERIA.—The author's conception of hysteria has been discussed *elsewhere*. In this affection, a reaction is elicited (negative duling energy from the center of the sagittal suture, Fig. 57), which may be reproduced artificially by short circuiting the brain (page 109).

When the latter is effected, changes in the pulse are noted (page 109). In addition, the **TENDON REFLEXES ARE ACCENTUATED**. Here, three stages may be noted; 1. A refractory period of diminished reflexes lasting one minute or less; 2. A reflexophilic period during the time of short circuiting; 3. A variable period of exaggerated reflexes surviving the discontinuance of short circuiting. It is assumed that the cortical centers which act inhibitorily in restraining undue reflexes are temporarily deprived of their function by short circuiting. When short circuiting is effected after the manner cited, one may lead energy (sufficient to evoke the stomach reflex) from a definite brain area (Fig. 57). This area, strange to say, corresponds to the *clavus hystericus*; the supposititious safety valve in this disease.

THYROIGENOUS PSYCHOSES.—The majority of patients with hyperthyroidism suffer in some degree from mental symptoms. The latter may prove to be the frontier signs of a psychosis (intense and indefinite agitation and mental and motor restlessness). Recurrent insanity associated with an enlarged thyroid is not infrequent; the symptoms sub-

siding with diminution in the size of the goitre. Mental symptoms, notably hallucinations, can be produced in susceptible subjects by the use of thyroid extract.

Lemel, attributes dementia precox developing during puberty to an anomaly of the thyroid gland, and excellent results were attained by thyroid treatment.

Now that the functional activity of the thyroid can be determined (page 161), the implication of this structure in psychoneuroses is a matter capable of solution.

LUETIC PSYCHOSES.—The mere electronic diagnosis of syphilis may establish the etiology of a psychic anomaly. Syphilis may be the cause of a congenital mental defect, retarded cerebral development, hypochondriasis and dementia due to arterial degeneration.

PSEUDO-EPILEPSY.—Persons addicted to reversed types of breathing (*respiratory ataxia*) may show the epileptic reaction (p. 165) which disappears temporarily when the normal type of respiration is resumed.

NEOPLASMS

ELECTRONIC PATHOLOGY.—The creation of a modern pathology based on my investigations respecting the recognition of energy and its polarity evolved in different diseases seems apposite. Each atom of our organism is endowed with a definite vibration-rate.

Just as there is a "Periodic Law," (page 49) with reference to the periodicity of the atoms of the elements, so may we anticipate a law with relation to morbid processes. We must not only content ourselves in determining the energy evolved in a quantitative and qualitative direction, but also determine its polarity, vibration rate and wavemetric index.

Roughly, the quantitative factor is determined by the intensity of the stomach reflex (retraction of the organ) plus the distance the discharge of the reflex from the source of energy. The qualitative factor refers to the polarity of the energy.

All the forces in nature are positive and negative. We do not know what positive electricity really is. However, if one conducts the energy evolved from the positive pole of a Galvanic current by means of a single cord to the stomach-region, a stomach reflex is evoked, and it can be shown that the conveyed energy is actually positive in character. By aid of the commutator one can produce a negative form of energy.

A unit of negative electricity in motion carries with it some of the surrounding ether. It is this bound ether plus the moving negative unit which we call mass. As before remarked, the atom is a sphere of positive electrification enclosing negatively electrified corpuscles, and the negative electricity of the corpuscles exactly balances the positive electricity of the enclosing sphere.

We are confronted with another problem, *viz.*, the arrangement of the corpuscles in the sphere. The arrangement of the corpuscles in groups to form atoms, confers on the latter their specific attributes.

If, owing to some external disturbance, one or more corpuscles within the sphere is detached, then the atom will assume a positive charge owing to the loss of a negative corpuscle.

The stability of an atom is dependent on the number of corpuscles it contains.

When the stability of an atom becomes extreme, the corpuscles of the outer ring may lie on the surface of the atom in which case, it assumes a negative charge.

In other instances the atom becomes neither electro-positive nor electro-negative.

The configurations of the corpuscles in an atom depend in general on the energy they contain. If the corpuscles rotate with a velocity beyond a critical period, they slowly but surely lose their energy, and then there occurs a sudden convulsion or explosion with the evolution of a large quantity of kinetic energy.

When the crash comes, this atomic cataclysm results in disintegration. The writer fully realizes that he has given an incomplete picture of intra-atomic energy and atomic disintegration. His real object in exploiting the electronic theory is to account for the augmented energy and changes in the polarity of the latter occurring in certain diseases.

The molecules of our body consist of more than a thousand atoms, and the atoms themselves are grouped and regrouped and then grouped again, in such a way as to make the molecules of the body highly mobile and quite unstable. The slightest external disturbance will change the stability of the atom, and it will assume a positive, neutral or negative discharge of energy.

With the discovery of radium, a new property of matter known as radioactivity was discovered. It meant that matter possessed the property of emitting rays.

Then followed a differentiation of the rays into *alpha* (positively charged), *beta* (negatively charged) and *gamma* (neutral) rays.

My physiologic reaction (stomach and other visceral reflexes), shows that radioactivity is not limited to radioactive elements, but that it is a universal property of matter.

Sgier¹⁹, presents an electric conception in the growth of neoplasms. Metabolism, he argues, is the result of tissue currents due to the chemical dissociation of mole-

cules and atoms into negative and positive ions and electrons. When the equilibrium (isoelectric) is disturbed, anabolism causes a positive and catabolism, a negative electric condition of the parts.

The *vis medicatrix* of a granulating wound is simply the electric current generated by the difference in potential between the injured and healthy tissues.

“Applying the foregoing to cancer or other tumors, the deduction leads to the following conclusion or theory. A traumatism (mechanical, chemical, or thermal) exerted on a part of an organ or a tissue, devitalizes the tissue affected, lowering its vitality (altering its metabolism) and consequently generating because of the difference in potential, an electric current or *vis conservatrix*.

This electrical stimulation causes an increased growth of cells, which by their very presence further lower the vitality (by the added pressure which they exert on the blood supply, etc.,) and thereby increase the electrical discrepancy (and consequently the strength of the current) and augment or hasten the metabolism of the growth.

It is a well known fact that cancer flourishes only after forty years of age, when the vitality is beginning to wane, and when the recuperative powers are no longer far in excess of the injury, so that the part of the lowered metabolism has a chance to start (and thus add its weight to the metabolic discrepancy) at a time when any organ or tissue that has recently or even remotely been injured or devitalized in any way (whether directly by traumatism or irritation or indirectly, by interference with its nutrition or blood supply) has a poorer chance of a *restitutio ad integrum* than in early life, because of the general senile changes in blood vessels and tissues. Is it not possible that these senile changes may be reduced to a chemical basis, whereby new chemical combinations, (ions and electrons) are formed, producing a state of metabolic equilibrium which is more readily altered or

destroyed, and hence creating a condition in which these electric currents are more easily generated, and counteracted or destroyed with great difficulty, if at all?

Pursuing the same course of explanation further, Sgier regards metastasis merely as a process of autoinoculation with the products of metabolism from the primary growth, which are taken up and transported by the lymphatics. At the point where they lodge, the tissues undergo chemical alteration, with the production of lowered vitality, in turn becoming negative to their surrounding tissues and stimulating cell proliferation as at the original focus. Sgier offers the foregoing hypothesis purely as an hypothesis which may possibly offer a clue to others, or which may stimulate others to profitable research along similar lines."

CARCINOMA.—A carcinoma yields a POSITIVE duling energy when a male stomach is employed for the reaction (page 43).

The method of procedure in diagnosis may be illustrated by the citation of three cases:

A patient has only recently observed a vaginal discharge. One end of a conducting cord was fixed by the patient in the region of the lower border of the stomach* which was previously defined by percussion and its border marked by a dermatograph.

The other metallic end (which is insulated except at its extremity which is brought into apposition with the skin) was gradually passed over the abdomen until a site was attained which yielded stomach dulness. The latter was demonstrated just above the *symphysis pubis* occupying an area about the size of a dime.

*This metallic tip may be fixed to the skin by means of adhesive plaster. The patient must stand on a flooring of wood or other non-insulated substance and face West.

The polarity of the energy discharge was found to be positive.*

Dr. C. G. Levison, made the gynecologic examination and found a polypoid mass protruding from the *cervix uteri*, which on examination by the pathologist, Dr. Dannenbaum, was found to be a perithelioma. At the operation (performed by Dr. V. G. Vecki), the cervix was densely infiltrated and indurated throughout its entirety. The body of the uterus was not implicated.

A woman occasionally passes blood in the urine with symptoms suggestive of vesical hematuria.

A positive discharge of energy may be led off at a point to the left side one inch above the *symphysis pubis* as revealed by stomach dulness plus retraction of the lower border of the organ. A cystoscopic examination by Dr. V. G. Vecki, revealed a supposititious malignant growth at the left ureteral opening.†

One could multiply such records in carcinoma and other affections corroborated by necropsy, skiagrams, operations and histologic examinations. Thus, Dr. Geo. O. Jarvis, writes; "Diagnosticated cancer of the uterus which was confirmed at the operation. It gave little evidence of its presence beyond the electronic reaction."

In the diagnosis of visceral malignancy, there are at least eleven diagnostic methods ranging from the anti-tryptic properties of the blood to the meiotagmin

*The polarity of energy may be determined by a bar-magnet. If dulness of the stomach is elicited by conveyed energy from the morbid site, have an assistant or the patient hold first one end marked N (positive) and then the other end marked S (negative pole) in the direction of the stomach during percussion. If the dulness persists with the N pole and is dissipated by the S pole, the energy conveyed is positive. The opposite also holds good.

†Six weeks after transference of autogenous energy (neutral energy from the epigastrium) to the site of the lesion, a cystoscopic examination by Dr. Vecki, revealed the disappearance of the bladder tumor.

test. It is not my purpose to deprecate these methods as impracticable or unreliable, but to emphasize the fact that, the methods aim at generalized in lieu of localized diagnoses.

My observations on polarity seem to clarify several problematic questions concerning neoplasms. "The vast assemblages of atoms comprising the heaviest atoms are unstable. As their kinetic energy decreases the aggregation explodes and the corpuscles rearrange themselves with the evolution of energy and the projection of some of the products of the rearrangement." The slightest external disturbance will alter the stability of the atom. In other words, IRRITATION (page 185) is the most frequent etiologic factor in carcinoma. At the period of life when neoplasms develop most frequently, one finds a decrease in the discharge of energy.

If we apprehend malignancy from the view point of the physicist, one must assume that the discharged energy is due to chemical dissociation of atoms into negative and positive ions and electrons.

A tissue at rest is in a condition of electric equilibrium (isoelectric).

If this equilibrium is disturbed by some traumatic factor, a difference of potential is established and the altered tissue becomes electronically positive to the normal (stomach reflex). The sensitive living cells are at the mercy of their environment, and this refers in all cogency to changes in the constituent elements of the fluids in which they are bathed.

The beneficent action of radium on new growths is not explained.

The *gamma* or neutral rays are the most efficient in re-establishing a normal cell-balance in carcinomata.

Cancer developing in people who live together (*cancer à deux*) suggests contagion.

Just as radium confers radioactivity on other substances, so may a cancerous person by induction alter the polarity of another individual.

Thus, if the energy from a cancer is conveyed to the stomach of a normal individual, the stomach-dulness of the latter may persist for some time after the source of energy is removed, and it will be found to possess a positive polarity.

This RETENTIVITY OF DULNESS is characteristic when any energy of high voltage is carried to the stomach region. It persists for a variable period in cancer until the negative energy from a bar-magnet is conveyed to the stomach or, if the energy was primarily NEUTRAL, it may be dissipated with either pole.

In CARCINOMATOSIS (generalization of cancerous growths), the arteries which in the norm yield a negative energy, demonstrate a positive energy.

Suggestive of a carcinoma somewhere in the organism is apolarity (page 115). Polarity is maintained in chronic inflammations and sarcoma.

SUMMARY.—I. The electronic diagnosis of cancer is an early sign. Cancer in its early stage irrespective of its localization is apparently an insignificant lesion (Bloodgood), hence the importance of an early diagnosis.

The condition in question corresponds to what was once called the pre-cancerous stage which is in reality cancer without positive signs.

Morbid cell-activity may temporarily discharge a positive energy, as I have occasionally observed in gastric and duodenal ulcer and in chronic inflammations, but this variety of energy ceases when the condition is improved.

If the skin is artificially irritated, a positive energy may be withdrawn from the irritated area, and this energy discharge may last for hours in elderly persons. Any irritated area will yield the same reaction hence, the liability of error in the differentiation of this, and the carcinomatous reaction.

With the sphygmobiometer however, the pulse is arrested at 15, (index) in chronic inflammations and at 6, in carcinoma.

Like indices in the two conditions will likewise produce the stomach reflex.

The irritated skin area will no longer discharge energy if the negative pole of a bar-magnet is directed for several seconds to the area in question, or the latter is subjected to the energy discharge of EOSIN (page 207).

The foregoing suggests an electronic explanation for the creation of atypic epithelial proliferation and a prophylactic procedure in all foci of irritation;—the local employment of eosin. If the skin is exposed for a few seconds to the X-rays, a positive discharge of energy may be obtained from the exposed area for a variable period of time. In this way the storage capacity of the skin may account for the etiology of the rays in cancer.

The present morphologic conception of a neoplasm, is destined to be supplanted by an electronic conception when energy discharge, will signalize a tendency toward the development of a neoplasm.

2. The energy discharge in cancer is positive and provokes the stomach reflex of contraction. The degree of malignancy may be roughly gauged by the amplitude of retraction of the lower border of the stomach.

3. The electronic test localizes with exactitude the area involved and metastases if present, may be demonstrated.

4. At the time of the operation, the electronic test may be employed to indicate the extent of invasion and to show that the involved tissues have been extirpated.

5. It is best to employ another subject in executing the test and to select one in whom the stomach reflex is normal and not easily exhausted.

6. In eliciting the electronic reaction proximity of the subject to intense light must be avoided; light being a form of energy is capable in itself of evoking the stomach reflex.

7. When pain is present, a neutral energy may be elicited (page 164). The energy from cancer can produce stomach dulness even though it traverses glass or other insulator (page 124).

8. In testing for normal or abnormal energy, the subject must be grounded (either patient or subject on whom the test is made). If the patient or the subject stands on insulated material (porcelain, varnished floor, glass, etc.), no stomach reflex is obtainable. The latter is important when the tests are executed in an operating room with a floor of porcelain tiling. In such instances the subject and patient must be grounded by a single wire from the foot to a convenient faucet or radiator (page 35).

9. The presence of fluid in the stomach or bladder yields a neutral discharge of energy, hence these organs must be empty before conclusions are formulated.

10. The process of elimination must be exercised in every possible direction. Thus, a kidney which yields in the norm a positive energy, may simulate a neoplasm if luxated.

11. The carcinomatous energy conducted in the usual way to the stomach region not only produces stomach dulness but also sigmoid dulness (page 135).

12. The vibrodynamometer shows the constant vibratory rate in cancer at 50 Ohms. Transitory dulness may occur during the time the index of the scale is shifted but the dulness is only persistent at 50.

In differential diagnosis place the index of the scale at 50 Ohms, then any dulness elicited from the stomach is caused by carcinomatous energy.

13. The voltage of the latter is usually very high and varies from 2 to 17 Ohms. The voltage bears a definite relation to the grade of malignancy. Diminution in the voltage demonstrates amelioration.

14. In mammary carcinomata overlying the heart, an error in diagnosis may ensue. The energy from the left ventricle is negative and may neutralize the positive carcinomatous energy. If the energy in a condition like this is conveyed through a non-conductor, the non-conveyance of normal energy will not interfere with the elicitation of the stomach reflex provoked by the carcinomatous energy.

15. Augmented activity of the mammae (lactation) yields no duling energy, hence this physiologic phase is negligible in electronic diagnosis.

16. The carcinomatous energy may be so intense as to cause stomach retraction approximating the liver (page 39) and unless this fact is recalled, no stomach dulness is demonstrable. When there is any doubt, the electrode must be held primarily several inches from the energy source and if no stomach dulness is in evidence, the electrode may finally be brought into apposition with the source of energy.

POLARITY REACTION.—The polarity of energy is modified by the aural polarity (page 79). If the psychomotor regions are short circuited (page 109), the polarity say of cancer, is the same whether the stomach or liver reflex is employed—A NEGATIVE DULING ENERGY. In children (no polarity), cancer energy is negative (stomach or liver) and in females (reverse polarity of male), cancer energy is negative (stomach reflex) or positive (liver reflex).

SARCOMA.—This yields a duling energy which is positive

and negative, *i. e.*, neither pole of the bar-magnet dissipates the stomach dulness during the time the Sarcomatous Energy is conveyed. The energy traverses a non-conductor. No sigmoid dulness is produced (page 135).

A GLIOMA yields the same reaction as sarcoma. This reaction establishes electronically, the identity of the growths.

COMMENTS ON ELECTRONIC DIAGNOSIS.—Dr. George Starr White,¹⁸ comments as follows: "The electronic method of diagnosis and treatment may mean that we have found a method of curing many diseases that have been considered incurable. The fact that the polarity of radioactive energy is changed, proves that we must bring about normal polarity before the disease can be eradicated. The method has opened up a new field for research in diagnosis and in treatment. Now, the etiology of many obscure complaints can be determined, and we can see reasons for many cures, and for many remedial measures, that have been employed empirically. They can now be applied in a scientific way, and with a definite object in mind. The electronic methods of diagnosis have been extensively tried by some of the most trustworthy medical observers."

Dr. Chas. R. Clapp (Los Angeles), referring to his son whom I saw in consultation with Dr. James Ward, of this City, comments as follows: "With your electronic test you defined two areas of PUS near the sigmoid and anterior to the left kidney. The autopsy demonstrated as correct, your clinical findings."

A patient seen in consultation with Dr. Chas. V. Cross, (San Francisco), had obscure hepatic symptoms. The electronic test gave a reaction for PUS at a definite area. Pus was aspirated in the latter situation.

Dr. E. M. Perdue, in charge of the largest laboratory for

cancer research in America, refers to the subject as follows: "The work of Abrams, on human energy is so exact, and so true that it is already working a revolution in the practice of the healing art. In our University, instruments of precision have been constructed by which we demonstrate, measure, control and test the intensity and polarity of the emanation of human energy. These methods have been confirmed by microscopical examinations of the tumors. I have never seen the Abrams reaction fail or be misleading. I can say the same for the syphilitic reaction and reaction for the predetermination of sex.

These methods are so simple, scientific, exact and practical as to make the methods of the laboratory, obsolete and historic in medicine."

In a personal communication, Dr. George O. Jarvis, reports a large number of cases in which CANCER was diagnosed by the electronic test, and confirmed at the operation and subsequent microscopical examinations. He places absolute reliance on the electronic reactions in TUBERCULOSIS AND SYPHILIS. Dr. Prouty, presents the following:

"Farmer had a history of LUMBAGO over a period of one year. At the clinic of Dr. Abrams in 1913, the latter by aid of his electronic test elicited the reaction of SARCOMA which was localized by the test in question. A subsequent radiograph verified the exact location of the growth. The patient died Feb. 7, 1914, from a sarcomatous metastasis in the brain."

Dr. J. A. Elliot (Chicago), presents the following:

"Respecting the patient whom you examined, and in whom the general syphilitic electronic reaction was obtained at the time of the PRIMARY SORE, permit me to say that the patient is now manifesting the typical secondary symptoms. You will recall this patient no doubt by the fact that, you

located the site of the primary sore during the time the patient was behind a screen, and had no previous knowledge of the site of the lesion."

In the latest edition (1915) of his classic monograph (Sexual Impotence, W. B. Saunders & Co.), Dr. V. G. Vecki, whose international reputation as a syphilologist is conceded, refers to the marvelous results which he has witnessed (and controlled by serological tests) in the diagnosis of syphilis by the "Electronic Tests of Abrams".

In the early application of the electronic tests, several errors were perpetrated notably in the differentiation of chronic inflammations, cholecystitis, uterine affections, etc. These errors can now be eliminated by establishing the vibratory rate (increase of) etc.

In a patient seen with Dr. Ward, there was an electronic reaction for carcinoma just below the splenic flexure of the colon, with a low voltage (2/25 Ohm). The laparotomy for another purpose revealed at the area in question a stricture of the descending colon filled with fecal matter.

When a carcinomatous reaction is obtained, we cannot deny a condition preceding the neoplasm and favoring its development. The locus of a neoplasm is determined by irritation which conciliates atypic growth.

When a reaction suggesting a neoplasm is obtained from chronic inflammations and ulcers (page 184), immediate contact of the electrode with the part must be established. In neoplasms with high voltages, the writer has obtained reactions when the electrode was at a distance of 12 inches from the site of malignancy.

Acute inflammatory conditions clinically suggestive of cancer have been referred to by Moynihan as, "Mimicry of malignant disease."

ELECTRONIC REACTIONS* (Continued on page 192).

DISEASE	DULING ENERGY	WAVE-METER INDEX†	VIBRATORY RATE†	SOURCE OF ENERGY	ADDITIONAL DATA
CARCINOMA	Positive	6	50	From site of lesion	Apolarity (p. 115). Splenic flexure dulness (Fig. 50), in addition to stomach dulness. High voltage of energy. Energy traverses a non-conductor.
CHRONIC INFLAMMATION	Positive	15	40	From site of lesion	Polarity maintained. Low voltage of energy. Energy does not traverse a non-conductor.
SYPHILIS	Neutral	6 or 7	20	Liver, spleen, spine and from site of primary inoculation. A reaction from other situations suggests a localized lesion	Apolarity. Splenic flexure dulness. No reaction from psychomotor region, nor from epigastrum (as in the norm). Temporary evanescence of general reaction after use of mercury at site of inoculation. Reaction persists after enemata and cathartics. Potentiality of energy increased after massage of site of primary inoculation. Quiescent syphilis has an energy value of 10-25 of an Ohm, †whereas when active, it may be 1-3 ohms.
AUTOINTOXICATION (Intestinal)	Neutral	10	10	Liver, spleen, spine and abdomen (sites of stasis)	Polarity maintained AFTER purgation. Reaction from psychomotor region and epigastrum. Reaction evanesces after cathartics and enemata. Reaction from metopion (p. 145).
TUBERCULOSIS	Neutral	15	15	Sites of infection	Umbilical dulness (p. 135). In mixed infection, blue on the subject (p. 138) causes maintenance of dulness from tuberculous energy, whereas yellow anniliates the latter and brings into evidence the pus reaction.
Pus (Streptococcal Infection)	Negative	7	15	Site of purulent lesion	

* Stomach reflex of a male (facing west) is employed as an index of conveyed energy † VIBRATORY RATE and † WAVE-METER INDEX may vary slightly (p. 281), and for this reason all sphygmometers must be correctly gauged. † The simple biodynamometer is used. When the sphygmometer is employed for measuring resistance, the switch of the induction coil is turned to the "off" button. The latter must also be executed in measuring the functional efficiency of the heart and kidneys.

Vide SPLANCHNO-DIAGNOSIS (page 291).

These energy reactions are obtainable through a non-conductor (page 125), excepting the reactions in splanchno-diagnosis (page 292) and chronic inflammation.

CHAPTER XIII.

NEW CONCEPTS IN TREATMENT.

BACTERICIDAL THERAPY.—In a paper presented to the "*San Francisco County Medical Society*," August 9, 1904, the author referring to PHTHISIO THERAPY, made the following comments which have in no wise been modified by time.

"The physician who relies on the healing power of nature in phthisis displays his erudition. By so doing the discerning physician is afforded an opportunity of knowing what not to do, a feat often more difficult than doing, and enables him to apply the highest principles of the therapeutic art. The patient must be put in nature's place and work as nature works. The nearer and truer he is placed to Mother Earth, and the closer his intercourse with nature, the more certain he is to attain health, for "Diseased nature oftentimes breaks forth in strange eruptions." The medical treatment of tuberculosis is a monument to sepulchred theories. Specific medication in phthisis is therapeutic optimism not yet realized, and the so-called specifics are substances which decrease in number with the advancement of medicine. The tale of a consumptive does not begin and end with the tubercle bacilli. Germs are the specific constituents of dirt, the complete annihilation of which can only be attained by cleanliness, although a modified though incomplete procedure is known as antiseptis. Drugs have been invented for the patient and the physician—to relieve the former of obeying the laws of hygiene, and the latter of inculcating them. To select judiciously among the old drugs is equal to inventing new ones.

Bactericides may be effectual in the laboratory, but not at the bedside. There is a vast difference between a

culture tube of bacilli and a patient. The treatment of phthisis is not based on the destruction of the bacilli, but in fortifying the organism against the bacillary invasion. In other words, our aim is to provide defensive works against hostile attacks. We must cherish the stomach of the consumptive as our most powerful ally in the treatment of his disease; for if we are inconsistent in dietetics and injudicious in medication, we will have created a foe incapable of subjection. If we are unable to cure an accessible tuberculous lesion, like lupus, by means of bactericides, is it not chimerical to assume, or even hope, that such agents will ever be effectual in pulmonary tuberculosis? The latter statement does not refer to the marvelous bactericidal properties of the solar rays. Accept as a paradigm, laryngeal tuberculosis, an easily accessible region (larynx) for local medication, and we observe that the great variety of treatment suggested eloquently proclaims the futility of drug delirium. Laryngologists are constrained to conclude that laryngeal tuberculosis can be healed without any local treatment, and that the chief method of cure is the hygienic-dietetic treatment. Of many of the recent remedies employed, one may say of them, as does Lindsay, of intratracheal and intravenous injections, that "They have at least the merit of courage, not to say audacity." Let us retreat from the delirium of new drugs which threaten to annihilate rational therapeutics. Let us prove loyal to the old, yet not insensible to but wisely discriminate in the employment of new drugs. Prescriptions should be written "With a pen of iron and with the point of a diamond."

With our scientific proclivities and a test tube, we are drifting back to the Skodaic pessimism when Skoda, proclaimed his contempt for treatment as follows: "We can diagnose disease, describe it, and get a grasp of it, but we dare not by any means expect to cure it." From the same school of therapeutic nihilism, we recall Hebra, who said

that ten thousand cases were required before a therapeutic opinion could be justly formed. Toxicotherapy is substituted for pharmacotherapy by our deriders and our therapeutic methods have been referred to as a "Meditation on death," as Asclepiades, said of the Hippocratic treatise on therapeutics. "To obviate this tendency to death," as the old therapeutists put it, can only be made the object of intelligent effort with a just regard for progress and the elimination of traditional lore.

Molière, the most trenchant of satirists in customs medical, asserted that, the authorities of his time exacted an oath from medical candidates that they would never alter the practice of physic. Those "in authority?" who regard innovation from the viewpoint of heresy, recalls the *bon mot* by a witty compatriot of Talleyrand, who, in commenting on the conservatism of the latter said, if Talleyrand, had been present at the creation, he would have exclaimed; "Good gracious! chaos will be destroyed."

"He who dreads new remedies must abide old evils."

THE VITAL SOIL.—Without a propitious substratum, "The seed falls by the wayside." Germs thriving on certain media perish or cease to grow on other media.

"If we could succeed in limiting more precisely the conditions under which certain bacteria can exist, mainly on the basis of more exact studies on the composition of the medium then we should undoubtedly be in a position to employ more objective therapeutic methods." (Abderhalden¹⁵).

Any change of a nutritive medium deprives certain organisms of their means of existence. In infection with the trichophyton fungi, spontaneous cure is effected at puberty owing to some modification in the cutaneous soil.

After this fashion, cure is often achieved; not by the

annihilation of adventitious cells which subsist on the organism, nor by bactericidal action, but merely by modifying the vital soil.

Humoral pathology, the diatheses and the habitus must be revived.

An attempt in this direction has been made *elsewhere* by the author in his reference to *phylogenetic diseases*.

The idiosyncratic reaction to certain drugs or foods is an allergic condition precipitated by the character of the soil.

The foregoing supersensibility is likewise observed in Addison's disease which brings about a supersensitiveness to arsenical compounds. Supersensibility is also noted as a local reaction in the focal tuberculin reaction and in syphilis (Herxheimer reaction).

Microbial dermatoses, are influenced by age, habits and a multitude of other factors and cure is only achieved by modifying the soil and improving the general health.

In treatment, the primary effort is to modify the conditions which caused the disease.

Improvement in general health improves recovery from a definite disease.

"The attempt to reach the microbe in the living tissues has been abandoned, its destruction being accomplished indirectly by rendering the tissues unsuitable for its multiplication and by modifying individual receptivity, that is to say, the soil" (Brocq). The "cellular factor" in infectious diseases has been recently emphasized by Riesman²⁴, who contravenes the prevailing conception that an infectious disease is due to the poison of a parasitic microorganism. He contends that the toxemia is caused by the proliferation and disintegration of myriads of new cells.

In the study of plant life and growth, the United States Bureau of Soils found that changes in the soil (diseases)

accounted for diminished crops—agricultural chemists find in this “sick soil” certain substances (carboxylic acid, picolin, etc.) which interfered with plant metabolism.

“The soil has vital functions. It cannot be considered as the dead, inert remains of rocks and previous vegetation. It is not dead, but is endowed with functions analogous to those of life itself. In it go on the same processes of solution and deposition that have taken place in past ages in connection with the geologic action upon the rocks and minerals in the earth’s crust; the same chemical and physical interactions as those through which the movement of subsurface waters generally have formed ore deposits; the same processes of fermentation, digestion and decay of organic materials as those that take place in animals and plants through the agency of enzymes, bacteria, fungi, and molds.”

THE CELL.—The study of this structure, the living and active basis of animal and plant organization, created our modern pathology (page 2).

It is necessary, however, to penetrate further into the ultimate structure of the cell to justify the creation of a “NEW THERAPY” which the author has neologized, *Electronotherapy*. The latter has for its object the modification of the physical conditions of cell life. The cell function is represented by its energetic metabolism which it regulates automatically.

The survival of the cell predicates a substratum qualitatively and quantitatively fit for nutritional purposes.

Each cell is endowed with a specific attribute.

Physiologically, this attribute is noted in the hepatic cells which only secrete bile.

Pathologically, it is noted in parasyphilis which evokes system diseases by implicating definite spinal and cerebral regions.

The specific selective attributes of cells are observed in the bullfinch ¹⁸ with a testicle on one side and an ovary on the other side (*Hermaphroditismus Verus*). In this animal, male plumage exists on one side and female plumage on the other side (accurately delimited in the median line of the body).

Despite the fact that the sexual glandular secretions are carried by the blood to all the body cells, the cells only endowed with male and those with female properties alone appropriate the secretions destined for their growth.

“Each cell has a specific fabric of its own, which is dependent on the nature of its separate units and on the manner in which they combine together.”

The cell function has been chiefly studied from the chemical viewpoint and only meagre attention has been accorded to the physical attributes of the cell. Since the discovery of *radioactivity*, it has been demonstrated that chemistry is not the most fundamental knowable science of matter.

The specific property of a cell is shown by its definite reaction to stimuli; the salivary cell only secretes saliva, the muscle cell responds by contracting, etc.

In CHEMICAL STIMULATION, the stimuli have a higher osmotic tension than that of the stimulated structure and equimolecular solutions stimulate more pronouncedly the higher the molecular weight.

In CHEMOTAXIS (positive and negative), certain substances attract or repel free living cells. In rheotaxis, changes in position are due to flowing water or air currents.

Changes in locomotion due to gravitation are known as geotactic.

The tendency of cells to establish contact with solid bodies is known as thigmotaxis. In phototaxis, the effects on the direction of movements is instigated by light.

In the microspectrum, the “*bacterium photometricum*,” wanders into the ultra-red, whereas another

collection is formed in the orange and yellow. In the various colors ranging from white to black, the former is the least and the latter most attractive to the mosquito.

It is impossible at this time to review how different stimuli effect destruction of living things.

The α — and Becquerel rays, heat, electric stimulation etc., exert a puissant influence for either weal or woe owing to their indiscriminate employment which the author has endeavored to regularize. One knows the effects of cosmic influences on gouty and rheumatic pains and Arrhenius, has sought to bring various physiological processes, notably menstruation, into relation with atmospheric electrical variations.

All problems in biology not in accord with the progress made in physical science are doomed to perish.

The laws of the latter are obeyed universally by living organisms and inanimate things. Dr. George Starr White, in a contribution¹⁸ on the author's method of electronic diagnosis refers in electrical terms to a discussion of the cell: "Cell division by mitosis suggests the appearance of iron filings in a magnetic field. Each cell is an electrical entity (electron) with positive and negative properties. The lines of force of electrons depend on their specific arrangement. The molecules represent an aggregation of electric batteries."

ELECTRONOTHERAPY.—This procedure finds its expression in a modification of the soil by change in vibratory rate or polarity. Data concerning atoms in vibration have been discussed on page 5.

Therapeutic action must be measured and computed in chemico-physical terms.

Electrons can be conceived as bombarding space with terrific speed thus creating all kinds of etheric

perturbations. The latter are practically infinitesimal blows. This conception of energy action has suggested the neologism, electronotherapy.

Radium and other radioactive substances produce *etheric vibrations*; the vibratory rate and polarity differing in the *alpha beta* or *gamma* rays.

We are cognizant of the profound physiologic action of the foregoing and our failures in radiotherapy are due to the indiscriminate employment with rays of known polarity in diseases in which the polarity is unrecognized.

THEORY OF IONIZATION.—Electrons are united with salt molecule constituents; the positive electron is combined with the H, metal or basic constituents and carries a positive charge. If a current passes through the solution, the positive electrons wander to the negative pole or cathode and are called cathions. The negative electrons combine with the acid radicles of a salt carrying a negative charge to the anode and are specified as anions. Some assume the existence of a negative electron only; the positive electron representing an unsaturated affinity for a charge.

The electric charges leaving the ions combine with the tissue elements and cause electric stimulation of the protoplasm.

Specificity in therapeutics is Electronotherapy.

The action of an electrolyte equals the algebraic sum of the action of its ions.

Toxicity generally increases with the atomic weight and valency of the ion.

No cell can remain active unless it contains some electrolytes (Macallum). The toxicity of an electrolyte is lessened by the addition of another electrolyte (Loeb).

Anions (alkalies) stimulate and cathions (acids), lower the irritability of the sciatic nerve of the frog.

VIBRATION.—The following excerpts are from the author's book on "*Autointoxication*."* The science which spans the gap between chemistry and physics is physical chemistry. Matter is an accumulation of positive and negative electric charges and the chemical elements are merely varying numbers and arrangements of these charges.

Atoms are oppositely charged electrons which move in orbits and are thrown off from all highly heated or electrified bodies.

The ultimate particles of matter and energy are identical and mind and matter are but two aspects of the same thing.

Every phenomenon in nature is dependent upon matter in motion or vibration.

A familiar example of specific response is noted when a Galvanic current is passed through the cheek; taste perception is produced and the percipient can recognize the specific quality of each pole. Through the head, the same current provokes a sensation of light with color perception and stimulation of the auditory nerve with the same current induces sound effects. *Color* is determined by the number of waves emitted by a luminous body in a second of time or by the corresponding wave length.

Just as we can modify the vibrations of stringed instruments, what we call inhibition is nought else but the inhibitory influence of the nervous system on the vibrations of atoms in the nerve molecules.

In this way, atomic vibration is so influenced that sensation is either dulled or unperceived.

Narcotic action is probably of this character. Martyrdom connotes inhibition. I have seen fakirs in India and Africa submit themselves to all kinds of physical torture without the least outward evidence of pain. Insensibility

*E. B. Treat and Co., New York. 1906. Page 31 *et seq.*

to the latter, attributable to self-induced hypnotism, may signify nought else than acquired mastery of atomic vibration. The ultra-violet, like the X-rays, possess an analgesic action.

Is the latter effect an induced vibratory rate of nerve electrons?

Does spectroscopy of sodium vapor (page 49) aid us analogically in appreciating the foregoing?

The action cited has likewise its analogy to tone vibrations which set other bodies in motion.

If the A string of a violin is struck, the A string of a piano standing near sounds in harmony with it.

The therapeutic application of vibration aims to restore the equipoise of disease by a rearrangement of the molecules or by raising their vibration to a normal standard of frequency. Harmony in nature is achieved by the neutralization of opposing elements. One form of hemihedral tartartrate crystal diverts a reflected ray to the left and another to the right.

This, as Pasteur, has shown, is dependent on a special molecular arrangement pervading the entire crystal; a molecular differentiation which causes fermentation and growth in one instance and failure to do so in another.

The solution of an equal number of the two forms of crystal has no effect on the polarized ray.

The therapeutic theory of vibration is not chimerical; it only lacks precision in its present stage of imperfect development.

The property of assuming more than one elementary form in chemistry is known as ALLOTROPISM. The diamond, amorphous carbon and graphite are identical in composition although showing different properties.

Red and white phosphorus are like elements yet one is a poison and the other innocuous.

Allotropism is supposedly due to a difference in the number of or arrangement (Stereo-Chemistry) of atoms in a molecule of the element.

Berthelot, supposes that the difference in the allotropes depends simply in the amount of bound up energy.

Chemism, heat and light are directly interchangeable in rapidity and direction of the molecular vibrations.

Just as vibratory rate can be demonstrated in disease (page 51), so can one proceed with material objects.

In lieu of the application of the electrode to the source of energy in disease, one brings it in apposition with the object and approximates the other electrode to the stomach in the usual way.

This is the method likewise pursued in gauging the potentiality and polarity of drugs (page 207).

The latter must be used in bulk and placed on a porcelain dish (which has a vibratory rate at about 250 Ohms).

Allotropism is chiefly a question of vibratory rate and by the latter, the identification of objects is practically absolute.

The diamond has a vibratory rate at 150 Ohms;
Lampblack has a vibratory rate at 125 Ohms;
Charcoal has a vibratory rate at 112½ Ohms.

Allotropism doubtless exists in the living tissues and some diseases may be said to be allotropic modifications of each other.

Pathology is the physiology of the sick. From our viewpoint it could be called the physics of disharmonious vibrations.

Chromotherapy, like chromodiagnosis (page 67), is

based on an unrecognized foundation of polarity and vibration rate.

“The abiotic action of ultra-violet light increases as the vibration frequency increases.”

The photodynamic effect of fluorescent substances was illustrated primarily by the addition of fluorescent stains to photographic plates, thus rendering the latter more sensitive to those colors which these stains absorb. Living protoplasm contains sensitizers which have a puissant influence on physiologic reactions (Photosensitiveness). Nerve tissue does not react to light influences unless pigment is present (Hertel). Chlorophyll in plant, and hemoglobin in animal life, are characteristic sensitizers. Eosin and pheno-safranin have a photodynamic action on the light hemolysis of red blood corpuscles (Harzbecker). Bovie contends that electromagnetic waves have no effect on objects which are incapable of vibrating in resonance with them. Such objects are transparent to the particular wave length in question. Thus rock salt is transparent to heat and ultraviolet waves and ruby glass to red light waves. The substances of which living organisms are composed are capable of resonant vibrations over a considerable range of vibration frequency and in this sense, the protoplasmic component of the tissues acts as a natural detector of energy as evident in the visceral reflexes. Bodies out of harmony with the tissues are either not absorbed or changed before absorption (Abderhalden).

In Musicotherapy, we are dealing with a series of vibrations which create pleasant images and emotions.

The rendition of the overture of “Tannhäuser,” will increase the pulse rate from 10 to 25 beats whereas “Meditation,” a quiet, restful number, diminishes the blood-pressure and the rate of the pulse.

In dogs, music augments elimination of carbonic acid and increases the consumption of oxygen.

Horace, in his 32nd Ode, Book I., concludes his address to the lyre:

"O laborum, dulce lenimen, mihi cumque salve, Rite vocanti."

(O, of our troubles the sweet, the healing sedative).

In the classics, we recall that the singing of birds cured the insomnia of Maecenas.

CHEMOTHERAPY.—This departure spans the gap between the new and old pharmacology and represents the "*Therapia sterilisans magna.*"

Parasitotropic chemicals, have a powerful avidity for the parasites, and are destructive to them in the living subject without injury to the tissues, in contradistinction to organotropic substances.

ELECTRONIC PHARMACOLOGY.—Physio—and pharmacotherapy founded on physiologic investigations have ignored the electronic factor (vibratory rate and polarity), the fundamental principle in physical science.

"Chemical affinity" is probably nought else but the magnetic property of electrified molecules (*vide* magnetons).

All matter has the same attractive force and the invariable property of matter is electricity.

Gravitational energy, compared with the enormous electrical energy of molecules, is exceedingly feeble.

A simple conception of Arrhenius, has revolutionized modern chemistry. When salt is dissolved in water an enormous electrical charge ensues on the atoms. Sodium takes a positive and the chlorine, a negative charge. These charged atoms are called *ions*. Negative ions incite muscular contractions and positive ions inhibit them (page 26).

The "Royal Touch" and the laying on of hands for the cure of disease may be regarded as mythical by those who

are ignorant of the visceral reflexes and the potency of human energy (page 1).

It is asserted that external applications do no good for the reason that there is no cutaneous absorption.

The latter plays only a minor rôle in the foregoing method; it is chiefly a matter of eliciting energy and discharging reflexes.

Electrification is the invariable result of friction between two different substances, one becoming positively and the other negatively charged. The process is not restricted to solids.

If, during the time any part of the hand or arm placed in proximity to the stomach, is anointed with an indifferent liniment, the stomach reflex is elicited at once owing to the generation of frictional energy. With the aid of the reflex in question, many interesting data can be gleaned concerning X-rays.

The latter yield a neutral duling energy. When the skin in any part of the body is exposed to the rays for say about thirty seconds, the energy of the rays is stored by the skin and from the skin thus exposed, one may convey this induced radio-activity (for several hours depending on the charge) in sufficient quantity to elicit the stomach or other visceral reflex.

The energy thus conveyed is a NEGATIVE duling energy.

The very moment this stored skin energy is neutralized with the POSITIVE pole of a bar-magnet, it is no longer possible to elicit the stomach reflex from the same skin area.

Here, is an important fact utilizable in prophylaxis; the skin condenses the X-rays as negative energy and the skin condenser may be neutralized by positive energy.

The skin energy thus stored has little or no penetrating

action; a fact tending to explain the inefficiency of the rays in the treatment of neoplasms.

Exposing a definite skin area on the back of the chest to the rays in question and then attempting to conduct energy from an area on the anterior chest surface corresponding to the area exposed on the posterior surface, no energy can be conducted.

If a like procedure is attempted with a saturated aqueous solution of Eosin, a neutral duling energy with a potentiality of $11/25$ of an Ohm can be led off from the anterior chest surface.

The efficacy of our Electronotherapeutic methods is determined by the following law:

AN ENERGY EFFECT IS DIRECTLY PROPORTIONAL TO THE INTENSITY OF THE ENERGY MULTIPLIED BY THE TIME DURING WHICH IT ACTS AND VARIES AS THE SQUARES OF DISTANCES FROM THE ENERGY SOURCE.

It cannot be regarded as a coincidence that the vibratory rate of SYPHILIS is at 20 Ohms and that the rate for MERCURY and POTASSIUM IODID is at 50 Ohms.

That the rate for PAIN is at 20 Ohms and that MORPHIN and COCAIN have a like rate at 35 Ohms.

In addition to rate, polarity of the medicament demands consideration.

COCAIN, MORPHIN and OPIUM yield a non-duling positive energy whereas PAIN (page 164) yields a neutral duling energy.

Now, an apparent discrepancy is attained in our theory. SYPHILIS yields a duling neutral energy and the two specifics for this disease (MERCURY and POTASSIUM IODID) yield the same energy (non-duling.) Either this theory must be dismissed as untenable, or we must invoke the vibratory rate (and not polarity), as the curative factor. Again, the SOLAR

rays are effective in TUBERCULOSIS despite the fact that a duling neutral energy is common to both.

The LUNAR rays yield a duling neutral energy.

Just as energy does not appear as light and heat until it hits matter, so it is with polar changes in energy.

The solar rays yield a neutral duling energy but they are stored in the skin as negative duling energy.

Mercury and iodine, like syphilis yield a neutral duling energy.

When the skin is anointed with mercurial ointment, a biochemic change ensues and the skin yields a positive duling energy.

Iodids, when ingested, change into HYDRIODIC acid and free iodine which entering directly into the protein molecules form compounds with new properties.

Hydriodic acid yields a negative duling energy.

After this manner, one may reconcile the action of the drugs in question in syphilis.

Is it merely a coincidence that the normal JOINT yields a non-duling neutral energy and that oil of GAULTHERIA (duling neutral energy) and SALICYLATES (non-duling neutral energy) vaunted specifics in POLYARTHRITIS RHEUMATICA yield the same energy?

Here, the action of the drugs in question would be to restore the joints to their normal polarity.

Is it a coincidence that MALARIA yielding a positive duling energy from the spleen is combated by QUININ which discharges a negative non-duling energy?

In employing energy for its polar action in the treatment of disease, the author primarily employed the patients' energy (auto-conduction) as cited elsewhere (page 182.)

The latter method was abandoned for a more effective procedure—the use of drugs.

The neutral energy from the epigastrium has a potentiality (with the biodynamometer) of $24/25$ of an Ohm, whereas EOSIN which discharges a like energy has an energy value of $2\frac{1}{2}$ Ohms.

Aside from the potentiality, the degree of energy penetration is of great importance. One may test the energy value of different drugs by noting the amplitude of the *heart reflex* when a drug is brought into apposition with the cardiac region. Different drugs yield visceral reflexes of varying amplitude when directed toward different spinal regions (page)65. Perhaps the most effective source of energy for practical purposes in treatment would be the GALVANIC current.

An ordinary dry cell of $1\frac{1}{2}$ VOLTS and 12 AMPERES discharges from the negative pole, an energy value of 70 Ohms (with biodynamometer).

This energy discharge occurs during the flow of the current irrespective of the distance of the poles on the body of the subject.

A small and effective dry cell could easily be carried on the body of the patient and concealed.

The author has never given this method a trial. Though the energy discharge may be more effective, the vibratory rate may militate against results.

AGENTS YIELDING A POSITIVE DULING ENERGY*

AGENT.	POTENTIALITY OF ENERGY.
SELENIUM (only effective in the light).....	8 Ohms.
FUCHSIN†.....	16 "
POTASSIUM CHLORATE.....	17 "

*The list is only partial. Polarity was determined by the stomach reflex with a male subject. Potentiality was determined by the biodynamometer.

†Dr. V. G. Vecki (San Francisco), in a communication just read before the A. M. A. (June, 1915) referred to the injection of a Solution of FUCHSIN ($\frac{1}{2}$ to 1 per cent.) into the urethra and bladder for inhibiting bacterial invasion of the genito-urinary tract. The results were uniformly remarkable and were attributed to fuchsinophilic action. As a matter of fact, the polar energy of fuchsin cannot be ignored inasmuch as many antiseptics which are even more destructive to bacteria are relatively inert.

AGENTS YIELDING A NEGATIVE DULING ENERGY

AGENT.	POTENTIALITY OF ENERGY.
Safranin.....	11 Ohms.
Potassium Permanganate.....	17 "
Paraform.....	16 "
Dimethyl.....	
Oil of Sassafras.....	
Methyl Blue (medicinal).....	58

AGENTS YIELDING A NEUTRAL DULING ENERGY

AGENT	POTENTIALITY OF ENERGY
Eosin.....	2½ Ohms.
Turpentine (Venice).....	16 "
Condurango.....	
Bismuth Subnitrate*.....	
Metallic Cobalt.....	
Metallic Nickel.....	
Methyl Violet (not durable).....	45
Picric Acid (saturated solution).....	50

AGENTS YIELDING A POSITIVE AND NEGATIVE DULING ENERGY

AGENT	POTENTIALITY OF ENERGY
Fluorescein.....	11 Ohms.
Iodoform.....	17 "

POLARITY OF COLORS WITH ELECTRIC LIGHT

White electric light.....	neutral duling energy.
Yellow.....	negative " "
Blue.....	neutral " "
Violet.....	positive " "
Green.....	neutral " "
Red.....	positive and negative

PENETRATION OF COLORS WITH ELECTRIC LIGHT.—DEPTH OF AN AVERAGE CHEST SELECTED.

All colors fail to penetrate excepting green. Either pole of a slow or rapid SINUSOIDAL current yields a neutral energy discharge.

The efficiency of the foregoing agents is accentuated by permitting the energy to pass through aluminum (page 55). To further facilitate the energy value of a drug (used

*By aid of ingested bismuth one may outline the stomach using another as a test subject (page 223). The course of fistulae after injection with bismuth may be similarly traced.

for its polar action), it should be covered (when dried after application) with rubber cement.

This insulation of energy prevents its external dissipation.

An aqueous solution of eosin painted on the back of the chest yields a potentiality (when measured from an opposite area on the anterior chest surface, a distance of 12 cm.) of $11/25$ of an Ohm. When the eosin on the back is insulated with rubber cement, the energy yield from the anterior surface is increased to $22/25$ of an Ohm.

In Electronotherapy, the general method employed when polarity action is to be achieved is to determine the polarity of the particular disease and then employ an opposite or neutral polarity or, one attempts to secure a return of the normal tissue polarity.

Thus, in acute polyarthritis, one would paint the implicated joints with Eosin. The normal joint has a neutral non-duling energy and so have the salicylates (page 208).

Eosin yields a neutral duling energy.

MAGNETONS.—Vigneron²¹, refers to a new constituent of matter—the magneton or magnetic atomic element. This discovery interests us to the extent that its conception suggests that magnetic phenomena are concerned in chemical combinations and that chemical forces are supposedly the attractions of elementary magnets.

After the electron symbolizing the new ideas of the discontinuous structure of electricity, the magneton embraces an analogous evolution in our conception of magnetic phenomena.

CULTURAL INVESTIGATIONS by the writer with various microorganisms demonstrated in brief what was anticipated theoretically, *viz.*, that the energy discharge of different chemicals (efficacious clinically) had no visible influence on the cultures. It would be folly to correlate the energetic metabolism of cells with a culture medium.

The reflex factors so essential in the study of the protoplasmic reaction to energy cannot be solved by investigations on isolated protoplasm.

Similarly, it has been shown that numerous halogen combinations with benzene derivatives are exceedingly active against certain organisms in a test tube but prove innocuous even in greater concentration when employed in the body. Test tube demonstrations of drugs yield no index of therapeutic value.

The author's method of treatment will be illustrated in tuberculosis and carcinoma, in which diseases he has had the most experience.

The author has abandoned his method of auto-cor-duction (page 182).

TUBERCULOSIS.—The lesions in this disease yield a neutral duling energy (page 137). If the skin over the site of the lesion is painted with an alcoholic solution of safranin, the tuberculous soil is modified by a negative energy (page 210).

To augment the negative energy value of the safranin (after drying of the latter), it is covered with an insulating material like rubber cement (page 61).

The application is made every other day but before reapplication, the skin must be thoroughly cleansed with benzine.

In pulmonary tuberculosis, the skin over both lungs is painted with safranin and the patient is instructed to wear an undergarment of silk. The latter is a non-conductor and when worn, rubber cement is unnecessary.

In addition to this treatment, the patient must pursue most rigorously, the fresh-air hygienic dietetic treatment. My results with this electronotherapeutic method have been phenomenal in incipient pulmonary tuberculosis. When there was no mixed infection, a symptomatic cure was

usually achieved within six weeks. The author believes in his competency to formulate the preceding conclusion. For a duration of time exceeding twenty-five years, his clientele consisted largely of tuberculous patients.

He believes that his results were also dependent on an early diagnosis (electronic test) based on the principle, "*Tuberculosis primis in stadiis semper curabilis*" and, "*Qui bene dignoscit bene curat.*"

Even in advanced cases of pulmonary tuberculosis, excellent results were attained by the method of treatment cited.

In laryngeal tuberculosis, the infiltration evanesced in the majority of patients within three months by the use of safranin painted on the skin (daily) over the larynx.

If re-enforcement of the negative energy of safranin is desirable, MENTHOL (yielding a like polar energy after ingestion) may be administered.

Dr. Geo. Jarvis reports as symptomatically cured within two months two patients with pulmonary tuberculosis (t. b. in sputum at the commencement) by aid of the safranin treatment.

Even when the pathology of a disease is obscure the polarity reaction may serve as a guide to treatment.

For many years a patient has consulted dermatologists without relief for an ERYTHEMA MULTIFORME. Over the lesions a neutral duling energy is obtainable. Applications of safranin give immediate relief.

In ARTHRITIS DEFORMANS (if paratuberculous, page 141), safranin may be painted on silk gloves and the later may be worn at night if the articulations of the hand are implicated. When the lesions are multiple, the safranin is painted on the skin over the involved joints. Menthol may be employed as a synergist.

In Electronotherapy, one must be assured concerning the predominant polar reaction. Thus, in APPENDICITIS (acute and chronic), the electronic reaction demonstrates the predominance of the Streptococcic reaction.



Figs. 58 and 59.—Patient of Dr. Evans. Showing the effects of safranin treatment.

Figs 58 and 59, illustrate the effects of safranin treatment in a young lady with tuberculous adenitis (cervical) referred to me by Dr. M. Evans (San Francisco). The duration of the affection was two years and failed to yield to medical and surgical treatment.

Within one week after the daily application, the implicated glands in the lower cervical region evanesced.

One gland in the upper cervical region had passed on to suppuration when my treatment was begun.

This gland (as shown in the picture) is still enlarged (slightly) owing to the presence of cicatricial tissue.

In a like case referred to me by Dr. J. H. East (Denver), there was an equally rapid evanescence of the glands.

The only untoward effect noted from safranin was slight itching of the skin confined to the painted area and the same may be said of eosin (to be described presently).

CARCINOMA.—The polarity of this neoplasm is positive yet, the best results were achieved in treatment by the use of neutral energy producing agents, *viz.*, eosin (aqueous solution) or Venice turpentine.

Either agent is employed over the site of the neoplasm after the manner indicated in the use of safranin (*q. v.*):

The polarity of eosin energy is uninfluenced by any color on the body of the subject.

Eosin is more penetrating than the α -rays. Although comparatively good results were attained with either of the foregoing alone, yet of late, I have had recourse to the synergistic employment of POTASSIUM ACETATE and SODIUM BICARBONATE (one drachm of each, three or four times a day).

The latter impart to the blood a neutral duling energy.

Within a few minutes after the ingestion of a single dose of the agents in question, the polarity of the blood and both cardiac ventricles becomes neutral.

Ross, of London, and Packard of Boston, attribute cancer to a lack of balance of the potassium and other body salts and that this disturbance conduces to the malignant growth of epithelial cells (epiblastic and hypoblastic). Perdue, an investigator of great acumen ascribes hyperalkalinity as a condition precedent to the development of cancer.

Reference has already been made to the problematic action of POTASSIUM IODID (page 207). My investigations show however, that when it is first absorbed, the veins, arteries and both ventricles yield a neutral energy.

“Mikhailoff”, urges the employment of potassium iodid in internal cancer, preferably in the form of rectal injections (4 gm. potassium iodid; 2 gm. sodium carbon-

ate and 80 or 100 c.c. distilled water). This he supplements with 1 per cent. solution of sodium arsenate (sodium arsenici) hypodermically, which solution must be made with 0.25 per cent. phenol. He found that if the temperature rises one or two hours after the rectal injection of the potassium iodid, then we positively have to do with a malignant growth (carcinoma or sarcoma). If the temperature remains stationary or even declines, then cancer can be excluded and syphilis is probable. He sees in the action of potassium iodid in this respect an analogy to the action of tuberculin in tuberculosis, and claims that carcinoma can be cured in certain stages of malignant disease with this method of treatment. It reveals the presence of cancer like the positive response to the tuberculin test in tuberculosis, and a systematic course of treatment with it has a curative influence like that of tuberculin.

He states that potassium iodid seems to display a special affinity for cancer cells in the test-tube, and his clinical experience apparently indicates that this is the case also in the human body. For the differential diagnosis, he gives the rectal injection as above described, and repeats it after an hour or hour and a half to a maximum of three injections, but one is generally sufficient. The temperature reaction becomes manifest in one or two hours. He does not give specific instances or figures, but relates that after his course of treatment with potassium iodid supplemented by subcutaneous injection of a 1 per cent. solution of sodium arsenate, some of the patients are still living who had been told years before by leading clinicians that they had internal and hence inaccessible cancer. All his patients thus treated were in this inoperable class, as he always operates for accessible cancer."

An hypodermatic injection of SODIUM CACODYLATE (3 grains) will be followed like potassium iodid, with a neutral energy from the ventricles and blood vessels.

It is interesting to observe that when a neutral energy from the blood is evoked by drugs, the positive cancer energy is reversed (negative) when polarity is determined by the stomach reflex (in a male).

The physico-pharmacologic trend of therapeutics is illustrated by the method of Sprude²⁰. Injection is first made into the growth of atoxyl after which, over the growth and its environment, iron filings are spread. The latter are then subjected to the action of a magnet connected with an alternating current. This electro-magnetic irritation is provoked by the vibration of the filings which fortifies the action of arsenic—destruction of the cancer cells by evoking a pronounced grade of hyperemia plus fibrinous transudation.

In testing for the carcinomatous reaction (electronic) or determining the progress of the neoplasm by the biodynamometer, the energy of the eosin on the skin (or safranin in tuberculosis) may be excluded by passing it through a non-conductor (page 61). Neither the energy of eosin nor safranin will traverse an insulating material.

From what has preceded, some of the efficacy of our therapeutic methods has been referred to the potentiality of the evolved energy.

In this respect, the energy coefficient of RADIUM is relatively small when compared to some inexpensive drugs (page 209). Radium (10 milligrams) yields an energy potentiality of $22/25$ of an Ohm; SOLAR RAYS, $5/25$ of an Ohm and the X-rays, $11/25$ of an Ohm. Just as the thermometer and estimation of waste output may be accepted as absolute indices of metabolism, so by the aid of the biodynamometer coupled with the visceral reflexes, we are in a position to eliminate equivocation respecting the potency of energy whether expressed by an electric current, light, heat or the X-rays.

The modalities (different forms of energy) in physiotherapy may thus be placed on a rational basis. Human energy is a high potential unidirectional current and it is easily demonstrated that the average person discharges an energy of greater potency than that evolved from a bar-magnet (of average length).

When we refer to the remedial value of radio-active mineral springs, let us say in the treatment of RHEUMATOID ARTHRITIS, we are contented with the belief that, we are dealing with an ionization of atoms, whereby electrical energy is conveyed into the body (internal electrotherapy.)

When 4 oz. of water containing approximately 400 Mache units* are ingested, the normal joints (which in the norm yield a neutral non-duling energy) evolve a positive and negative duling energy. The same is true of the implicated joints in arthritis deformans. These reactions are obtainable for at least one hour with this quantity of water. The results in the latter affection must be referred to an electronic polar modification of the soil of the joints.

GROUNDING ENERGIAGENIC CENTERS.—*Vagus tone* is diminished by grounding the 7th cervical spine and increased, by grounding the region between the 3rd and 4th dorsal spines.

One end of the insulated conducting cord from either region in question may be fixed below by plaster to any part of the trunk.

The foregoing is readily illustrated by percussion of the viscera (Fig. 43).

By grounding the region between the 3rd and 4th dorsal spines, dulness of the stomach is at once evoked without the aid of extraneous energy. Coincident with this grounding, there is a momentary inhibition of the pulse.

*Radio-Rem (Schieffelin & Co.) was employed in my investigations.

Grounding the 7th cervical spine prevents the elicitation of the stomach reflex by all kinds of energy.

These clinical phenomena (important in treatment) are explained *elsewhere*.

Paroxysmal symptoms may often be interpreted in the terms of the physicist.

One may assume the banking of potential in the ganglionic cells, the receptors of afferent stimuli.

In the norm, the sum of the negative charges of the electrons of the cell equals its positive charge and in consequence, it is neutral or uncharged.

When the neurons become surcharged, a neuro-electrical discharge occurs and the impulses attaining the brain, create symptoms. The neuron discharge is succeeded by fatigue which is practically a fall of potential.

Such neuro-electrical storms are usually aborted by analgesics (page 17).

In tabes, one may predict a crisis by determining the augmented energy discharge by aid of the biodynamometer (*q. v.*) at a site distal to the lesion.

In several instances, the writer has thwarted the crises by grounding the area of augmented energy discharge.

APPENDIX

APPENDIX

NOTE I.

ELECTRONIC DELIMITATION OF THE LOWER BORDER OF THE STOMACH.

Urotropin, yields a powerful negative duling energy. If a tablet of urotropin ($7\frac{1}{2}$ grains) is coated with KERATIN and swallowed, the lower stomach border may be determined. Use primarily a large receiving electrode and later, for better localization, a pointed electrode. The same subject may be employed and the heart or liver reflex utilized.

If the latter reflexes are sought, percuss in the conventional way the lower border of the right lobe of the liver or the left heart border and mark with a dermatograph.

Direct a bar-magnet to the heart or liver border, and note (by percussion) the increased area of the heart to the left, or the liver below, and likewise mark.

If increased energy from the urotropin is conveyed by the receiving or distal electrode to the proximal electrode in juxtaposition to either the heart or liver border, there will be augmented dulness to the line established by the conveyed energy of the magnet (*vide* bismuth, page 210).

NOTE II.

THE ETHER THEORY—THE ELECTRO-MAGNETIC THEORY OF LIGHT—GRAVITATION—POLARITY.

The Ether theory, may be seriously questioned in the light of the author's methods for the detection of energy.

The Ether is "the supreme paradox of modern physics"

and is suggested as a vehicle for the transmission of various forms of force.

The idea of energy passing through an absolute vacuum has always been repugnant to science. The Ether theory is not necessary in explanation of magnetic lines of force, the flow of electrical currents and the forces of gravity.

IT CAN BE SHOWN BY AID OF THE REFLEXES THAT THE SUBSTANCE OF A MAGNET PASSES OUT AND THROUGH SPACE.

The space surrounding an electron is an intense electric field.

A magnet in proximity to the stomach, liver or heart will evoke a reflex.

The latter is discharged by the escape of electrons from the magnet.

There is no instrument known to science that can detect this infinitesimal electronic escape and were it not for the visceral reflexes, the author would not dare to substitute a fact for a theory.

Measuring this electronic escape with the biodynamometer, it can be easily demonstrated that like the body (page 51) or radium (page 269), the energy discharge of the magnet is greater in the light than in the dark hence, the warranted conclusion, that there is a constant circulation of electrons throughout nature. Electrons scattered in space substitute the imaginary ether.

The sun, is an inexhaustible source of physical energy which pours upon our earth and the latter is only a huge armature rotating at high speed in the sun's magnetic field.

The study of ELECTRO-MAGNETIC RADIATIONS, show that they possess all the properties of light waves, the only apparent difference being in their greater wave length.

Therefore, the modern physicist regards light as an electro-magnetic phenomenon.

By aid of the Sphygmobiometer (*q. v.*) and a visceral reflex, it can be shown that the wavemetric index of magnetic energy is 8, and that of a current of electricity is 3.

If light, by aid of a lens, is concentrated on the receiving electrode for several minutes (to allow of a concentration of energy in the variable condenser), and an attempt is then made to elicit a visceral reflex, the latter is discharged at 3 and 8 of the condenser. The latter fact confirms the electromagnetic theory of light. **HUMAN ENERGY CONFORMS TO THE SAME WAVEMETRIC INDICES.** Therefore, human energy is probably electro-magnetic.

GRAVITATION.—This is one of the greatest sources of the various forms of energy whose continual transformations make up the activity of the universe.

The intermolecular forms of chemical affinity is probably of the same character as the gravitational forces.

The secret of gravitation is probably the greatest problem still unsolved.

All theories ranging from the dynamical hypothesis of Kelvin, and the ultramundane theory of Le Sage, to the theories of Maxwell and Reynolds have proved pregnable.

In venturing an hypothesis, the author does so with the firm conviction that, in the visceral reflexes **OBJECTIVE EVIDENCE** is at our command which appears absolute and undeniable.

The premises upon which the author's hypothesis are formulated are as follows:

The first proposition, is that gravitation is an electrical attraction corresponding to chemical, magnetic and electrical attraction.

The second proposition, is that the supposititious ether through which these attractions act is in itself an electric charge.

Kinetic energy invariably appears as a result of a change of position.

Bodies in their original position possess potential energy (page 8).

CENTER OF GRAVITY.—This force counteracts entirely the weight of the body and is equal and opposite to the resultant of all the small forces which gravity is exerting upon the different parts of the body.

Employing the heart as a detector and the sphygmobiometer (*q. v.*) as the receiving apparatus, the following may be observed. When an object is suspended and given a pendulum motion and the receiving electrode is gradually passed below the area described by the moving body, the moment the center of gravity is attained, the buzzing of the instrument ceases.

If the positive pole of a bar-magnet is directed upward and accompanies the movements of the receiving electrode, the buzzing of the instrument is not arrested until the center of gravity (or adjacent to it) is reached owing to the neutralization of negative energy at the gravity center.

The negative pole of the magnet when similarly employed inhibits the buzzing when the center of gravity is attained (Fig. 6o). Thus the energy acting at the center of gravity is negative energy.

In this respect gravitational energy has its analogue in action currents (page 12).

The stomach reflex used independently of the sphygmobiometer is more sensitive than the heart as a detector of energy reactions. When a body is raised (employing the electrode after the manner cited and using only the stomach reflex), a negative energy discharge is demonstrated at the center of gravity (and adjacent to it) and a positive discharge in the immediate environment (Fig. 6o).

When the negative energy discharge is quantitatively determined by the biodynamometer (Fig. 18), its maximum potentiality is at the center of gravity.

Gravitational energy traverses all non-conductors and responds to the reaction of electro-magnetic radiations (page 224). Hence, gravitational energy is electro-magnetic and cannot be insulated.

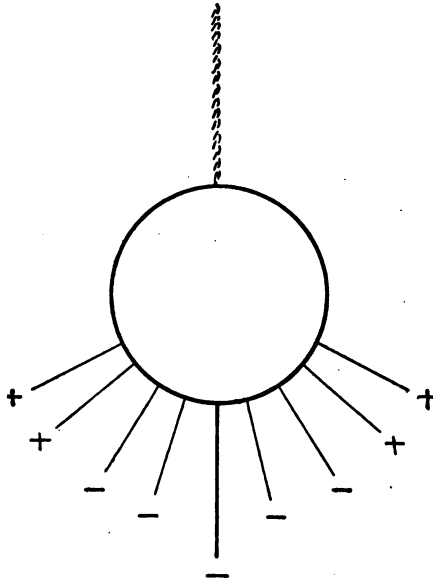


Fig. 60.—Illustrating the author's theory of gravitation when a mass is raised or is given a pendulum motion. This disequilibrated electronic energy is also demonstrable with the reflexophone (p. 298).

Whether the sphygmobiometer or stomach reflex is used, it may be demonstrated that gravitational energy is in direct proportion to the product of the mass and the velocity of the body and inversely proportional to the square of the distance from the body to the ground.

Our microcosm differs in no respect from the solar system. The relation of our organs as the author has shown

elsewhere (page 105), conforms to the Newtonian law that, bodies attract each other with a force proportional to the product of their masses, and inversely proportional to the square of their distance apart. My hypothesis of gravitation supports the electron theory with its logical corollary—the recognition of electricity as a fundamental quantity. The foregoing proof appears to have been anticipated by Sir Oliver Lodge, who believed that positive and negative electricity together made up the ether. The ether may be sheared by electro-motive forces into positive and negative electricity if they were really separated. A continuous shearing force applied to the ether in metals produces a conduction current. The ether cannot be directly affected. In a conductor the bound ether is not rigid. In an insulator it is resilient, when displaced it springs back again.

POLARITY.—"The universe is a unit." Polarity is not the exclusive prerogative of magnetic materials. The earth acts like a great magnet and by its inductive action confers polarity on all things in nature. This may be readily shown by taking a rod of wood, or non-magnetic metal and holding either end in front of the stomach. A non-dulling energy (page 43) positive, at one end and negative, at the other end and neutral, in the center may be easily demonstrated.

NOTE III.

BRAIN AND SPINAL CENTERS—THE NEW PSYCHOLOGY.

In 1870, Herbert Spencer, declared that different parts of the cerebrum must subserve different kinds of mental action.

Later, numerous investigations confirmed this pronouncement of cortical localization by physiological, histological and clinical methods. *Elsewhere*, the writer has shown

that direct electrical stimulation of the cerebral cortex and spinal cord for locating centers may be substituted by sinusoidalization of the skin over the brain and cord without vivisectional aid.

The concept of centers is variously interpreted by physiologists and physiologizing psychologists. The phrenological theory of centers supposes that certain functions of consciousness and motor control are located in particular cell groups.

Another theory abandons the concept center unless restricted in its meaning to a group of cells from which impulses are sent (sensory) or collected (motor).

The author's method of locating centers is as follows:

To locate the center of taste or smell, the protruded tongue of the subject is touched with a drop of some essential oil or the subject smells the latter.

With a pointed electrode for receiving energy (the proximal electrode at the stomach region), the skin of the cranium is explored and the moment the center (engaged in specific sense function) is attained, the stomach or other visceral reflex is elicited. The centers of smell and taste thus determined are shown in Fig. 6r.

The foregoing method may be employed by the psychiatrist in determining objectively the subjective perceptions of the insane.

The SPINAL CENTERS may be similarly localized. Thus, the spinal segment related to a peripheral skin area will when irritated yield a stomach or other visceral reflex (sensory localization). If the *musculus quadriceps femoris* is struck, its contraction yields an energy emanating from the 10th dorsal spine (motor localization).

In the utilization of a visceral reflex for determining nervous energy, one is in a position to say what could not have

been said before that, there is a correlation between nervous and physical energy and that, nerve tissue is simply a bit of machinery adapted to the conversion of definite kinds of physical into nervous energy.

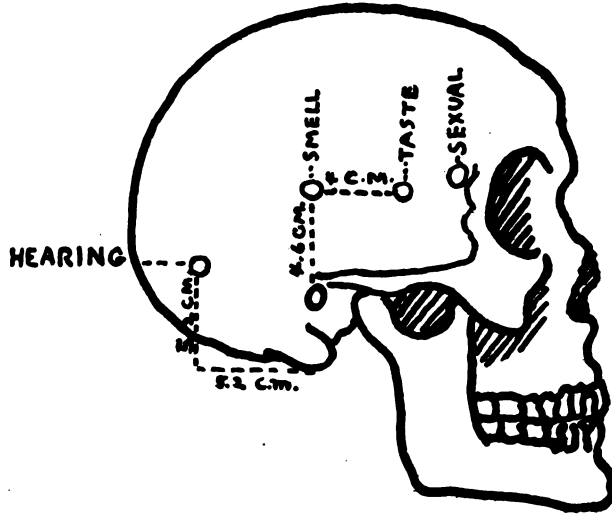


Fig. 61.—Illustrating the location of the centers of smell, taste and hearing according to the electronphysiologic method. The psychosexual center is located on both sides in the sexes at the external angular process. The smell center is located at a point on a straight line drawn upward 4.6 cm. from the tragus and the taste center, distant 4 cm. from the latter point. The center of hearing is located by drawing a straight line 5.2 cm. posteriorly from the tip of the mastoid process and an equidistance from the latter point.

To the neurologist, the method cited for cerebral and spinal localization is destined to be of the greatest practical value. It will enable him to study reflexes as they have never before been investigated. To conduct, protoplasm must be continuous. Any break in the physiologic continuity of protoplasm bars the conduction process.

THE NEW PSYCHO-ANALYSIS.—A dominant idea is revealed by the discharge of energy from specific centers. This energy discharge will evoke the stomach reflex. If the

dominant idea is SEXUAL, a discharge may be led off from the external angular process of the frontal bone (Fig. 61). The thought concept of MURDER is revealed by an energy discharge at a point on a line drawn upward 2.6 cm. from the tragus. The line must just avoid the helix. The centers in question are bilateral.

The value of the latter fact awaits confirmation by criminological investigations.

THE PHYSICS OF LOVE.—Sexual feelings contribute weal or woe to the human race and the inculcations of ethical principles are not alone sufficient to abrogate an animal instinct. To paraphrase Livy, "Whenever we become ashamed of the things we should not be ashamed of, it will not be long before we will begin not to be ashamed of the things we should be ashamed of".

The Freudian methods of psychoanalysis by translating a dominant sexual idea from the subconscious to the conscious mind has been of value in some cases.

By the author's method of cerebral localization (page 229), mind searching is an objective procedure and excludes the personal equation, a fact of importance in all scientific investigations.

Love, like every other phenomenon in nature, is dependent upon matter in vibration and the passional component has a wave-metric index (page 286) of 14 in both sexes. *Vide* Baraduc's hypothesis (page 11).

The subsidiary sexual center in the spinal cord in the male determinable after the manner cited on page 229, is between the 10th and 12th dorsal spines.

PATHOLOGY OF LOVE.—What was formerly regarded as the love and hates of the chemical "affinities" was but a name for the action of electrically charged atoms. All matter has the same attractive force and the invariable property

of matter is electricity. Personal likes and dislikes are only questions of individuals in or out of tune.

The physical reaction of the organism in subconscious love has its periods of incubation ("out of sorts") and its symptomatology (irrationality). Its cure may eventually be factitious—charging the organism with electrons of like affinity.

THE NEW PSYCHOLOGY.—The progress of psychology must be dependent on science as a whole and its real advent began when an anatomist (Weber), a physicist (Fechner), and a physiologist (Wundt) coöperated in its development.

The psychologist acquires his knowledge of mental states and the experience of others by means of physical effects (words, movements, gestures). Thus it is that, this method of analysis must debar the mental state of creatures whose methods of expression do not resemble our own. The disparity of man's brain and that of an anthropoid ape is relatively insignificant and the only physiological standard between man and every other animal is the faculty of speech.

As Huxley puts it; "Our reverence for the nobility of manhood will not be lessened by the knowledge that Man is in substance and in structure one with the brutes, for he alone possesses the marvelous endowment of intelligible and rational speech."

In our investigations of the subliminal mind (*q. v.*), the possible communion without language between every sentient creature relegates speech to a maladroit mechanism. To the phonologist, the phonetics of animals represent gateways to the mind.

The constitution of mind is identified with the history and destiny of matter and like the material world, can only be understood quantitatively as a system of matter and energy. Having thus evolved our contention, we are in a

position to suggest in the new psychology, a method in accordance with the electron theory for the investigation of cerebration.

BRAIN WAVES.—The scientific world neither recognizes the existence of brain waves nor the presence in the brain of a “detector” capable of converting the waves into a sensible form as is necessary in the operation of wireless telegraphy.

The foregoing contention is easily disproved by any one capable of recognizing a visceral reflex.

In our experiments (page 247) the heart, a crude substitute for the brain, gave positive demonstration of the fact of psychodynamic effects and revealed the specificity of thought.

What is regarded as matter, is only an effect of a particular kind of motion and without vibrations, we would know nothing of the world and the universe about us. The movements of the universe are the manifestations of a single agent which is called ENERGY.

Man is made up of vibrations and personality is identified with atomic combinations. Every living being is a transformer of energy and speaking specifically when a man thinks, he changes the energy of his environment (earth, air, sun) into nervous energy.

That some individuals cannot think well in the dark (page 60) is capable of understanding.

BICEREBRATION.—This neologism was suggested to confirm the hypothesis of Herbert Spencer, who contended that in good thinkers the two sides of the brain were probably used together much more than in ordinary people. This, as his commentator affirms may be proved to be true not only in regard to thinking but in understanding.

With the brain at rest, energy is discharged (to evoke a visceral reflex) from the left psychomotor area in the male

and from the right psychomotor area in the female (page 72)

In the average thinker while engaged in increased mental activity, there is only an increased potentiality of energy discharged from ONE psychomotor area with a corresponding increase of energy from the finger tips as the following figures illustrate:

MEASUREMENTS MADE WITH THE BIODYNAMOMETER
(PAGE 44) IN A MALE SUBJECT FROM THE LEFT PSYCHOMOTOR AREA AND FROM THE FINGER TIPS OF THE RIGHT HAND.

BRAIN AT REST	ENERGY DISCHARGE FROM THE FINGER TIPS
7/25 of an Ohm.	3/25 of an Ohm.
BRAIN IN ACTIVITY	ENERGY DISCHARGE FROM THE FINGER TIPS
2½ Ohms.	12/25 of an Ohm.

In the great thinker, there is an energy discharge of great potentiality FROM BOTH PSYCHOMOTOR REGIONS.

Thus, in Edwin Markham, the poet*, the energy discharge from the left psychomotor region was equivalent to 60 Ohms.

The potentiality of this energy discharge can only be fully appreciated by comparison.

The energy discharge from a giant magnet with a lifting power of approximately 400 pounds to the square inch has an energy discharge of only 32 Ohms.

The energy discharge from the finger tips of an ordinary individual exceeds that from a bar-magnet.

NERVE-FORCE.—The nature of the conduction processes in nerves has been the subject of numerous theories. The most recent investigations by Tashiro and Adams,† suggest

*Author of, "The Man with the Hoe."

†The biometer employed measures carbon dioxide in amounts as small as 0.0000001 gram.

the correctness of a metabolic or chemical theory. My investigations show that the latter, as well as the physical theory, is correct.

When potential, is transformed into actual energy (page 8), a stimulating energy from without is required and the latter bears no quantitative relation (page 25) to the amount of transformed energy.

Energy is work and as the latter is a function of motion, it is impossible to conceive of energy production without an increase of metabolism. Human energy is an electro-magnetic phenomenon (page 225).

If the tip of a receiving electrode is placed over the ulnar nerve, no energy sufficient to elicit a visceral reflex is obtainable. If now, any skin area innervated by this nerve is irritated there is an immediate discharge of positive duling energy and stomach dulness ensues.

If, to the mechanistic conception of vital phenomena, the functional unit of the reflex arc is superimposed by the physiologist, it is a concept of convenience and does not absolve us from believing that, the effect of a stimulus is attained by physico-chemical means.

HYPNOSIS.—By aid of the visceral reflexes the true pscho-physiologic status of hypnotism may be determined.

To refer the phenomenon to "suggestion" is a mere matter of logomachy and conceals our ignorance of the process involved.

There is a normal discharge of energy emanating from the psychomotor region (page 72). Suggestion plays a dominant part in the development of hypnotic sleep.

Irrespective of the method employed in inducing the latter, it is always characterized by some repetitious monotonous performance conducive to sleep like the rhythmic swing of the cradle, hammock or rocking chair.

IN THE HYPNOTIC STATE, LIKE IN NATURAL SLEEP, IT IS IMPOSSIBLE TO CONDUCT ANY ENERGY FROM THE PSYCHOMOTOR REGION TO EVOKE A VISCERAL REFLEX.

Thus, in hypnosis there is a temporary paralysis of psychical activity. Contrary to the current belief, the writer has found by the method already described (page 229) absolutely no reflex reaction of subconsciousness to stimuli acting on the senses during hypnosis. The hypnotized brain is a receptive and not a productive organ.

Psychic impressions are tantamount to an undeveloped photographic plate. The latter requires a developer to evolve the impressions. Similarly, consciousness in some form is necessary for developing sense impressions.

When reference is made to CONSCIOUSNESS, it is with the avowed purpose of endowing it with electronic attributes; that of knowing (in respect to the electrons) how to arrange themselves to form matter, directivity, speed, reflex responses, etc. The electronic reactions elicited serve to explain some of the phenomena of hypnosis in SOME individuals and eliminate what was regarded as apocryphal in connection therewith.

CONCENTRATION OF THE MIND.—This phrase can be demonstrated as literally true. When a subject engages in thought with red material across the head (page 69), the brain waves are scattered in all directions and a visceral reflex is evoked. This is not the case when thought is directed to a specific object. To prove this brain focusing, all that is necessary is to use the electrodes and cord (page 45). Let several wooden objects (used to eliminate autochthonous energy) be placed in different parts of a room and while the subject is concentrating on an object let an assistant touch each object in succession with the distal electrode (proximal electrode

to the stomach region of the person on whom the reflex is elicited.

The moment the object thought of is touched an immediate stomach dulness ensues. All the phenomena noted with the stomach are demonstrable with the reflexophone (*q. v.*).

DEXTRAL OR SINISTRAL SYMPTOMS.—Reference to this subject has been discussed *elsewhere*. For some reason, patients will complain of symptoms predominating either on the right or the left side of the body. Such complaints I have heretofore regarded as ridiculous.

The distribution of energy to both sides of the body is neither of the same potentiality nor of the same polarity (page 80).

Let us select as a paradigm the barometric neuroses.

We shall learn later (page 270) that, weather changes are identified with electrical disturbances and while the polarity and potentiality of energy produced in the organism may cope with such anomalies on one side of the body, they cannot do so on the other side.

SENSES.—“Delicacy of the senses is the foundation on which are built the highest and best developments of human character” (Ruskin). Science contents itself in saying that a difference in smell is dependent on a kind of chemical sense and things smell differently because they differ chemically.

It can easily be demonstrated that the question of odor like *color*, is a matter of rate vibration and differentiation is possible by vibrodynamometry (page 49) and the use of the variable condenser of the sphygmobiometer (page 272).

Smell, like taste, is regarded as a contact sense and is not due to etheric waves. The later contention may be disproved by the use of the sphygmobiometer (*q. v.*).

Place at some distance from the subject an hermetically

closed bottle (corked) containing oil of orange. In-contact with the cork place the receiving electrode.

The subject places the other electrode within several inches from the nose.

Permit the energy from the corked bottle to accumulate for several minutes with the index of the variable condenser at 90 on the scale. Next, move the index along the scale very gradually and almost invariably at 17 of the scale, the subject perceives not an odor but a sense of warmth or a breeze. This is not a matter of suggestion for the subject with closed eyes does not know the position of the index.

A repetition of the experiment with the same subject nearly always leads to uniform results.

A keen sense of smell is necessary in conducting this experiment.

In conducting a number of experiments the nasal sensation may vary between 17 and 22 of the scale for reasons cited on page 286.

If the energy from the oil of orange is permitted to condense for several hours, some subjects will at once detect the real odor of the oil when the index attains a definite point on the scale.

When other odors are employed for experimental purposes, nasal sensations will be perceived at other points on the scale. Thus, carbon disulphide is perceived between 72 and 77 of the scale.

NOTE IV.

GYROGRAPHY..

The discussion of this neologism is approached with diffidence.

Any theory however erroneous, though capable of

experimental test, eventually contributes something to experimental knowledge.

The forces of nature always move by alternate deviations first to one and then the other side of a common mean. What we call rest is unperceived activity (Huxley).

All locomotion results from oscillating movements (Herbert Spencer).

The sense of rhythm is a fundamental quality of neuromuscular tissue (Havelock Ellis).

Rhythmicity in nature is illustrated physiologically in menstruation sexual rhythms etc.; in pathology, by alternating emotional states which have an important bearing on the psychology of disease.

Unconscious muscular action or motor automatism is supposed to explain the movements of the "magic pendulum" or *pendule explorateur*.

The oscillations of a little ball suspended from a thread which held between the fingers by a sensitive known as "automatist" were variously interpreted in all ages. The augurs in ancient Rome employed this method in divination.

Interest in the supposed occult force directing the movements of the pendulum is periodically revived even by men of erudition.

The gyrations of the ball were invoked to explain the planetary motions, to predetermine the sex of eggs, to locate underground ores or springs and were also recognized as a new force (odyle).

A more recent study of these unconscious movements by Janet, shows that in certain instances more knowledge is exhibited in these gyrations than is possessed by our conscious personality and the investigation of the source of this knowledge constitutes an important phase of psychical research.

It is still difficult to say whether the intelligent automatic movements exceed the knowledge derived from a known environment.

Man is an ideo-motor being whose idea is expressed in some kind of external motion; consciously, in articulate language and unconsciously, in unrecognized muscular actions. The activities of man are the sum of the activities of his component electrons. Electrons have a fixed standard of directivity and are governed by mathematical equations.

The gyroscope, fully illustrates rotation and the composition of forces and establishes the fundamental Newtonian laws.

The earth is a gyroscope of larger magnitude and its rotation on its axis is due to electrical induction.

The geotactic and rheotactic movements of organisms in their orientation prove the supremacy of the laws of cosmical physics.

The writer has attempted a rehabilitation of this subject, notably in the direction of making records which he has called **GYROGRAMS** or specifically, **PATHOGRAMS** when the oscillations are influenced by pathological energy.

In conducting the experiments, the eyes of the subject are closed so that the direction of the oscillations are uninfluenced.

The character of the energy discharge must not be known to the subject so that expectant attention which has a decided influence on involuntary muscular movements may be excluded.

Individuals vary in their susceptibility to the energy discharge and temperamental subjects are necessary. The latter is practically a reflexophile (one with exaggerated reflexes) who shows, "greater susceptibility to all impressions, greater rapidity of action, of ideas and of speech."

Comfortably seated, the subject suspends from the fingers a cord (15 cm. in length) to which is attached a weight (35 grams).

The arm rests on a cushion. Below the edge of the table is a microscope (with ocular removed) into the aperture of which the recording plate covered with blackened paper is fixed (Fig. 62).

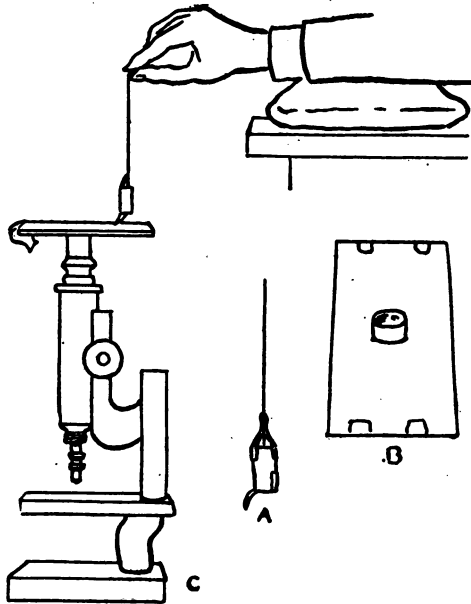


Fig. 62.—Method of making gyrograms. A, weight with attached shaving of cork; B, recording plate; C, microscope into the ocular aperture of which the recording plate is placed.

With the coarse adjustment of the microscope, an assistant raises or lowers the plate to accommodate the recording tip.

The latter (thin shaving of cork) is fixed to the weight by plaster.

The proximal electrode of the sphygmobiometer is

attached to the abdomen whereas the receiving electrode is placed in juxtaposition with the energy source.

The subject with CLOSED EYES first communicates with his fingers a slight LATERAL MOTION to the weight.

When the latter motion is regular, the circuit is closed and when any change in the direction of the movement of the weight occurs, the microscope is raised and the record is made.

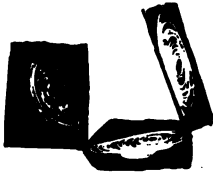
Several minutes may elapse before the direction of the weight is altered.

In using the sphygmobiometer the index of the variable condenser should be at zero. The illustrated pathograms were made under the conditions specified.

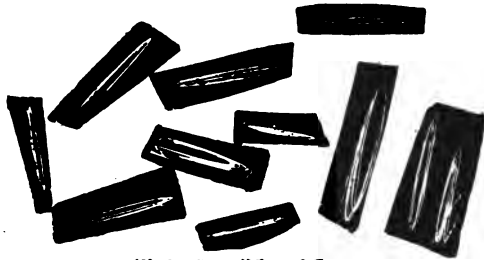
Although the subjects were not cognizant of the character of the conveyed energy, yet the pathograms show a remarkable uniformity.

Assuming that the gyrograms are automatic, subliminal and executed with an expectant idea, it is only according a tribute to the prodigious memory of the subconscious mind to enlist it for service in research work. The writer suggests that physicians should select persons with known diseases for gyrographic experimentation. In this way, the subconscious mind may memorize the directivity of energy and may reproduce it in individuals with like diseases although the latter are unknown to the physician.

Energy may be conveyed by a conducting cord (to the epigastrium) in the usual way without the aid of a sphygmobiometer.



COLISEPSIS



CHOLELITHIASIS



SARCOMA



TUBERCULOSIS



QUIESCENT SYPHILIS



ACTIVE SYPHILIS



CARCINOMA

Fig. 63.—Pathograms.

NOTE V.

SUBLIMINAL MIND—TELEPATHY.

The so-called subliminal self, embraces psychical activities which lie beneath the threshold of consciousness. It records past impressions (latent memory) and possesses functions transcending our conscious cerebration.

The subliminal mind suggested as a working hypothesis is now demonstrable.

Thought transference, which refers to the direct action of mind on mind without the intervention of any sense impressions is likewise capable of analogical demonstration. Heretofore, our knowledge of telepathy could be embraced by an aphoristic statement of George Eliot, "We map out our ignorance in long Greek names."

The fourth dimension idea, the sixth sense and telepathy have been the subject of enormous speculation and when viewed from the evidential side, the formulated conclusions are untrustworthy for the reason, that the proof of a single objective fact is worth tons of theories.

With the introduction of wireless telegraphy, the analogy between it and telepathy was supposed to be theoretically demonstrated. This hypothesis was subjected to ridicule for the reason that the existence of brain waves was denied and furthermore, one would have to assume that the percipient was in possession of a natural detector, condenser, tuning device, potentiometer, ammeter, variometer and all the other apparatus for receiving.

Laboring art at its best is only a crude imitator of nature. The lungs antedated the bellows, the heart, the pump, the hand, the lever and the eye, the photographic camera with

its eyelid (cap), iris (shutter), lens and retina (sensitive plate).

Telephonic and telegraphic apparatus with switches, batteries, transformers, relays, shunts and automatic circuit are mere mimicry of what is done in the nervous system and always by aid of the same energy.

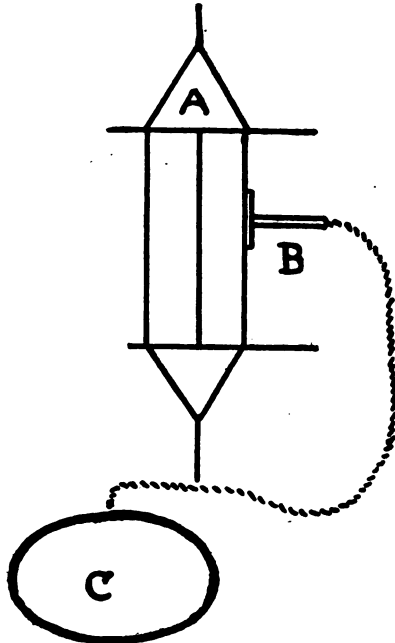


Fig. 64.—Showing the method of connecting the receiving electrode with the antennae when using the sphygmobiometer or reflexophone. A, antennae; B, receiving electrode; C, abdominal electrode or use with the sphygmobiometer.

Psychic energy is demonstrable by the stomach reflex (page 66) or the sphygmobiometer (page 272).

Connect the receiving electrode of the latter apparatus with the antennae (Fig. 64) and the other electrode to the subject in the usual way (page 36). The indicator of the variable condenser is placed at zero on the scale.

The moment an individual in an adjacent room some distance from the subject engages in profound thought (with red material across his head, page 69), the buzzing of the sphygmophone of the apparatus ceases. In some individuals this effect may be secured at a distance of 100 or more feet. With the sphygmobiometer, it is also possible to demonstrate the specificity of brain waves (psychovibratory effects).

Thought, like every other natural phenomenon is dependent upon matter in motion or vibration and matter, is only an effect of a definite kind of motion.

Colors are merely differences in wave lengths; the longest and slowest of the waves produce the sensation of red, the shortest and most rapid, violet.

In wireless telegraphy when electro-magnetic waves are set in motion by electrical energy, TUNING is necessary so that the wave vibrations may be adjusted to affect the receiver.

For the latter purpose, a tuning coil or a variable condenser (more delicate in adjustment) is used to increase or decrease the electrical waves to the proper lengths.

Vibration is a species of stimulation. Just as color is determined by retinal stimulation by different vibratory rates, a like varied physiologic response is elicited from the different structures of the body, which are like the keyboard of a piano and respond like bodies set in motion by tone vibrations.

The great riddle of the universe can never be solved by our natural senses which are too crude and inaccurate to reveal the world beyond them.

The telescope and spectroscope have been devised to substitute the eye in analyzing the firmament, the microscope, to reveal the infinitesimal of the microcosm and the

REFLEX, the instrument of the subliminal mind, to respond to vibrations beneath the threshold of consciousness.

SPECIFICITY OF THOUGHT.—A specific thought is energy of a definite wave length. Employing the sphygmobiometer after the manner cited (page 278) but placing the index of the variable condenser at 1 on the scale, an individual in an adjacent room is directed to look intently on some figure from 2 to 10. The position of the index on the scale will indicate the number thought of by the other person.

Thus, if the number 9, is selected, the sphygmophone will only cease to sound when the index attains 10 of the scale.

The following indices have been empirically established for different numbers.

<i>If the number selected were:</i>	<i>Buzzing ceases when the index on the scale attains:</i>
1.....	2
2.....	3
3.....	4
4.....	5
5.....	6
6.....	7
7.....	8
8.....	9
9.....	10
10.....	10

A code of words was similarly established.

<i>If the word selected were:</i>	<i>Buzzing ceases when the index on the scale attains:</i>
Saved.....	5
Well.....	2
Arrived.....	4
Operated.....	6
Girl.....	7
Boy.....	3
Buy.....	8
Sell.....	11
Better.....	14
Found.....	25

Two or more numbers or words may be selected after the following manner.

Thus, the index of the variable condenser is placed at 90 to secure condensation of the greatest amount of psychic energy. Another person thinks of one word for one-half minute and of another word for the same period of time.

If the buzzing of the instrument ceases at 5 and 4 of the scale, the words selected were saved and arrived.

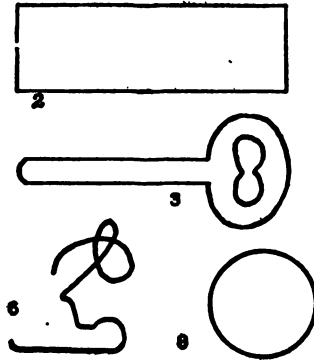


Fig. 65.—Illustrating the specificity of thought in relation to figures. The numbers refer to the wavemeter indices. This psychological investigation may likewise be executed with the reflexophone in connection with a variable condenser.

When thought is concentrated on a figure, the latter is revealed when the index attains a definite position on the scale (Fig. 65).

In the foregoing experiments, one may employ a visceral reflex (preferably the stomach) or the heart with the sphygmobiometer. Results in my investigations were not uniformly successful. With some individuals engaged in thought (good mental imagery) positive results were practically always secured. In general, the results were positive in about 75 *per cent.* of the experimental efforts. Mistakes also arise owing to the encroachment of one wave length on the other (page 286). The distance of conveying telepathic

impressions after the manner indicated was subject to the "law of inverse squares."

If the foregoing results can be attained by means of a heart or stomach reflex, is it not evident that the brain with at least three billions of cells specially attuned to this specific function is more capable of psychesthetic action?

The author, fully realizes the hostility that will be engendered in relation to the foregoing, owing to its apparent lack of relationship with existing knowledge.

The writer has however created no discontinuity in the transition to this new knowledge. He has availed himself of reflexes which are more accurate as detectors of energy than any apparatus that can be devised by man. He has not confused proof of an objective fact with evidence for his own convictions. The living functions conform to the uniformity of law accepted in the inorganic world. Electricity is an invariable property of matter but matter and electricity are so intimately associated that they are practically the same.

In the latter sense, mind must consort with matter and is essentially a question of physics and not metaphysics.

ABDOMINAL BRAIN.—The Bible does not refer to the word brain. The Hebrews located mind, in the kidneys and tender emotions, in the bowels.

The regulatory mechanism of the splanchnic area is controlled by the sympathetic system, appropriately called, abdominal brain (solar plexus).

This system being independent, self-regulative or autonomous in its activity has been correctly called, autonomic nervous system.

The splanchnic area includes the vessels supplied to the intestinal tract, liver, kidneys and spleen.

Vasomotor reflexes can be discharged by the vessels

themselves and they participate in the reflex regulation of their own functions.

As a rule the localized reflex is a Vasodilation.*

Thought directed to a part will increase its vascularity.

If heterodoxy has not characterized the writer's previous asseverations, he surely stands convicted as a heteroclite by attempting to demonstrate one of the subsidiary residences of mind in the abdominal region.

The abdominal brain aids specifically in the demonstration of telepathy.

Man is essentially a reflex animal (page 26). Consciousness depends upon the action of the reflexes and it is not coextensive with mind. Mental function as work might proceed without consciousness, just as the machinery of a clock might work without a dial. Every emotion, is simultaneously an instinct, and every physical reaction to an emotion, is the natural expression of protection.

Huxley, referred to science as organized common sense which paraphrased signifies that science does not interpret as a mystery what is in reality a very simple thing.

Instinct is an adaptive impulse in the absence of intelligence and made up of reflex acts purely automatic and without the domain of the mind. A reflex movement in neurons is the basic condition in every volitional act.

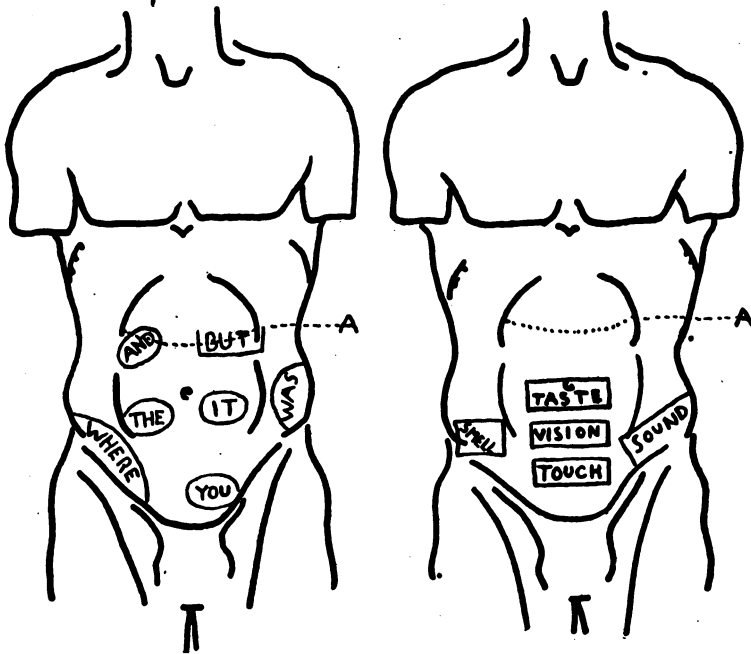
Despite repetition, let us recall that vibration is a mode of stimulation and that the response of our tissues to a specific rate of vibration differs in no wise from the A string of a piano (in syntony) which sounds in harmony when the A string of a violin is struck. Now, the splanchnic vasomotor nerves will respond to the psychovibratory component of cerebration.

This observation conforms to that of Haab, who directed

*Read Polar Expression of Energy on page 81.

attention to a psychical reaction (pupillary reflex) due to a suggestion of light.

In executing the following experiments, the subject on whom the areas of abdominal dulness are to be demonstrated must have an abdomen which yields a typical tympanitic sound on percussion. The subject must stand facing the west (page 59).



Figs. 66 and 67.—Illustrating ventral areas of dulness on percussion when words or the senses are visualized by another (transmitter).

At some distance from the percipient the person (transmitter) who is able to concentrate his mind connects his psychomotor region with red material (page 69).

When the transmitter visualizes any of his special senses (sound, taste, smell), areas of dulness on percussion (caused

by the splanchnic vasomotor reflexes) appear in specific locations of the abdomen (Figs. 66 and 67).

These areas may be reproduced by an individual on his own abdomen provided red material is used after the manner cited (autotelepathy).

The latter are endogenetic and the former, exogenetic reflexes.

By connecting the percipient with an aerial (Fig. 64), another person can by thinking of definite words, make a record of the same (areas of dulness) on specific abdominal areas of the percipient (Figs. 66 and 67).

These telesthetic results (or specifically sympathicoesthesia, if neologization is permitted) have been successfully achieved by the writer in most instances.

SUBLIMINAL MIND.—To the subliminal self is conceded sense impressions too feeble to arouse conscious perception, the unconscious power dominating physiological processes, higher mental faculties (genius, prodigies), dual consciousness, higher faculties of percipience (exaltation of the senses), etc.

Subliminal consciousness may be demonstrated. Attention has already been directed to the writer's method of locating centers (page 229). If a person slightly distant (2 or 3 feet) from the percipient and separated from the latter by a closed door places a ticking watch or compresses a Galton whistle (consciously inaudible to the percipient) on a line with the ear of the percipient, an immediate dulness of the stomach ensues (energy conducted from the auditory area, Fig. 61 to the stomach region).

By this means, the observer eliciting the reflex can tell each time the watch is brought on a line with the ear of the percipient. The same result may be achieved with the sphygmobiometer, but the action of the latter, dependent

on the vagal reflex (page 85), is not as sensitive as the stomach reflex.

The sense of smell may be similarly demonstrated. When a corked bottle containing some odoriferous substance (consciously imperceptible to the percipient) is moved toward the nose, it is only when the bottle reaches the latter that a reflex is discharged.

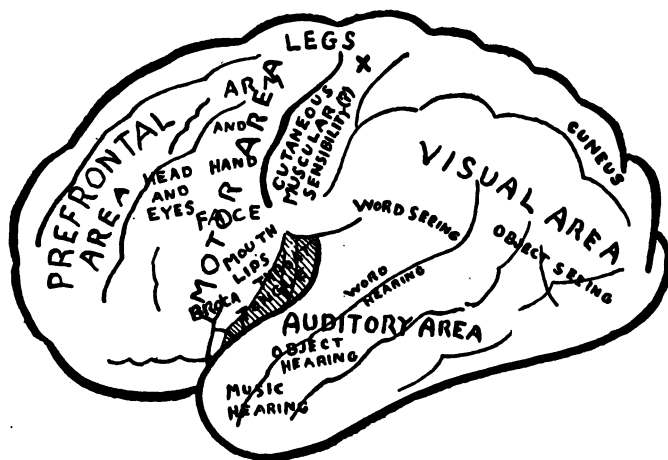


Fig. 68.—Illustrating functional areas on the surface of the left hemisphere in a right-handed person. The cross indicates the area of cutaneous sensibility.

This objective demonstration of an odor below the threshold of consciousness explains a number of phenomena. Thus, the power to be conscious of a cat as near while unseen and unheard (known as ailurophobia) is a subconscious recognition of olfactory emanations known only by the results in susceptible persons.

Subconscious vision can likewise be determined by the method described but the source of energy can only be conducted from the LEFT hemisphere (visual area) in a right-handed person (Fig. 68). This is in accordance with the fact established by physiologists, *viz.*, that the visual area

like the speech centers are located in the left hemisphere only. This subject will receive further consideration in the discussion of mediums (page 257).

TOUCH AT A DISTANCE.—This refers to the faculty possessed by the blind of recognizing the existence of objects several yards away. It is no longer necessary to invoke a sixth or even a tenth sense to explain the phenomenon. It is merely an exaltation of an existing sense which translates imperceptible vibrations into sensations.

It is a faculty common to animals which perceive vibrations beyond our range of audition.

If one electrode on a conducting cord is fixed at the area of cutaneous sensibility (Fig. 7) on the left brain hemisphere and the other, at the stomach region, the experimenter (eliciting the stomach reflex) can absolutely say each time another person (with the finger) approaches the skin on the right side of the subject.

In the average person, the energy discharge from the area of cutaneous sensibility, does not occur until the finger is within 4 inches from the skin. When the tactile sense is exalted (in the blind), the energy discharge is noted at a distance of several feet.

NOTE VI.

PERSONAL MAGNETISM—OCCULT PHENOMENA.

The figurative employment of the phrase, **PERSONAL MAGNETISM**, has a literal significance. It was regarded as a force equivalent to that exhibited by a magnet which passed from one person to another.

The conception of personality was abandoned when science was unable to demonstrate a so-called "vital force."

It is fully a generation back since Huxley, asserted that,

“the forces exerted by living matter are identical with those existing in the organic world or are convertible into them.”

To deprecate “personal magnetism,” because it is a misnomer is only a matter of logomachy.

Astrology has no official recognition, yet astrological terms are employed by the lexicographer.

We commence our prescriptions with an invocation to Jupiter, we prescribe mercury and speak of venereal and lunatic affections.

The energy emanating from the human organism is electro-magnetic (page 225). The whole domain of physics is tending toward a unification of various forms of force under one great principle.

All the cosmic forces are now comprehended in a single word—ENERGY.

The discharge of energy from the average individual is relatively potent (page 234) and *visceral reflexes* may be elicited by application of the finger tips to different vertebral spines. NOTHING IS LEFT TO THE IMAGINATION in such demonstrations.

Before the Roentgen rays, the pylorus opens and the stomach discharges its contents into the duodenum (page 65).

With the finger tips at the 7th cervical spine, the lung border descends and the heart diminishes in diameter.

With the ophthalmoscope, the retinal vessels contract when the finger tips are applied at the 7th cervical spine and dilate, when they approach the 10th dorsal spine etc.

Temperamental individuals (the writer designates them as ergohypertonic) may discharge the foregoing reflexes at a distance of several inches.

Reference has already been made to the influence of soil in treatment (page 195). The “laying on of hands”

for the cure of disease predicates not only energy discharge but energy polarity.

Dr. W. B. Page (Goshen, Ind.), reports to me as follows:

"I have repeatedly observed in our vicinity several old farmers who cure facial erysipelas in a very short time by holding their finger tips at a distance of about one inch from the erysipelalous areas and making downward passes. They cannot explain the phenomenon and only know that results are attained."

The energy from erysipelas is negative (page 127). The energy discharge from the finger tips of one hand is positive and from the other, negative. When the finger tips from both hands are used, the discharge must be neutral.

Dr. Gaston Durville (France), has shown that human hands have pronounced bactericidal power in certain cases and that remarkable cures have been achieved by the imposition of hands.

With others, he has succeeded in mummifying dead hands by passes with living hands at a distance of six inches for three-quarters of an hour daily.

W. H. Allen (Cleveland), dessicates bodies of animals and pieces of meat by subjecting them for several days to the action of a magnetic field.

PSYCHOMETRY.—This is a supposed occult power of recognizing by physical contact the character of an object and to diagnose disease by touch.

This phenomenon is not a myth.

Identity is no less an attribute of the inorganic than it is of organic matter. Here identity is associated with the number, arrangement and vibratory rate of electrons (page 47).

The writer has repeatedly demonstrated that, if several individuals make contact with the finger tips of one hand

for about one minute with different sheets of paper, the latter may be identified with respect to the individual touching the paper.

The vibratory rate of the finger tips is primarily determined (page 51).

When the paper is touched, the vibratory rate is communicated to the paper by induction, and assumes the same rate as the individual who touched it.

The vibratory rate from the paper (after contact with the finger tips) is determined after the same manner and may persist for several hours.

OCCULT PHENOMENA.—The visceral reflexes and auxiliary methods (CHAPTER V), are absolute and constant indices for demonstrating human energy.

The potentiality of the latter varies in different individuals (page 55).

The new knowledge of human energy corroborates the theory of human radiations (page 9).

The new psychology of SPIRITUALISM will eliminate self deception by a correct interpretation of supposed supernatural phenomena as extraordinary manifestations of human energy and the recognition of the possibility that, the subliminal self in certain individuals (called mediums, psychics or automatists), may be so exalted as expressed in sense impressions, that phenomena transcending our conscious apprehension become perceptible.

Such individuals may be compared to the instruments of science which translate the invisible into the visible.

Every spiritistic phenomenon is reproducible by the kinetic energy inherent in the individual and it is unnecessary to invoke a supernal reason for its origin.

Occult phenomena would have long since been relegated to the scientific knowable had it not been for the antipathy

shown by the scientist to the unclassified residua of the facts of experience.

The credulous believe too much; the scientific too little.

“Superstition is true psychology in the wrong dress.”

Elliot Smith, observed that smell was the predominant sense of the *Ptilocercus*—like ancestor of the primate but SIGHT had become the predominant sense in man.

The psychology of deception has no limitation if the senses are invoked in the interpretation of phenomena.

Our apprehension of the world is one prolonged deception: the senses perceive and the mind apperceives.

It was Helmholtz, who observed that, nature seems to have packed the eye with mistakes as if with the avowed purpose of destroying any possible foundation for the theory that organs are adapted to their environment. It is reason which restrains the senses from making a fool of their possessor.

Let us succinctly recall some spiritistic data.

TELEKINESIS.—This refers to the movements of objects without contact with the mover. It has already been shown (page 80) that every individual is encompassed by a neurodynamic field.

The potentiality of the latter varies with the individual.

In the biomechanic detection of energy (page 18), some individuals by extending their fingers in the direction of the stomach may raise the latter a distance of one inch. Another biomechanic phenomenon which the writer has witnessed was an arrest of the pulse at a distance of 20 feet when the fingers were directed at the 7th cervical spine (page 63).

This extraordinary energy discharge is necessarily pathological, and engendered by emotional states in mediums, leaves the latter after the performance in an enervated

condition. The extraordinary energy producing and transforming brain of a GENIUS is equally pathological and if the mental anomaly were physical, the genius would serve as an exhibit in a museum.

The Cartesian conception that, matter cannot act where it is not, was overthrown by Newton, in his law of universal gravitation.

In the *actio in distans* observed at *séances*, certain conditions are exacted.

In materialization, a dark *séance* room is demanded for better propitiation of the spirits?

As a matter of fact, that while the potentiality of human energy is less in the dark than in the light (page 269), it can evoke a visceral reflex at a GREATER DISTANCE in a dark, than in a light room.

This is also true of the waves in wireless transmission; more power is necessary in the day than in the night to cover the same distance owing to the light (reducing conductivity and partial absorption of weaker waves) which is an electro-magnetic disturbance of the ether (page 224).

Telekinetic and kindred phenomena are dependent on a "compound of the elementary consciousness of the sitters."

In the latter sense, each sitter enters as a dynamogenic element in the production of energy.

If the energy discharge from the finger tips of an individual is determined biodynamometrically (page 44) and found to be $\frac{1}{5}$ of an Ohm, the discharge is increased to 1 Ohm when another person grasps the other hand of this individual and to 11 Ohms, when a third person enters into the circle.

At *séances*, certain individuals are regarded as detrimental factors in the execution of phenomena.

My friend, Hereward Carrington, who has accomplished so much in the differentiation of what is fraudulent and

genuine in spiritualism, refers to an internal repulsive force which may combat phenomena.

The latter contention may now be demonstrated as true.

When one person attempts to evoke a visceral reflex by an extension of his fingers toward an organ, another person by willing that the reflex should not be discharged prevents elicitation of the reflex. It is not necessary for the person thus willing to use red material on the head (page 69).

Thus it is that, one can positively affirm whether the second person is a propitious or opposing element.

The physiologic rank of the WILL is loftier than that of the mind by directing and governing the latter.

In mentalization with the content of thought only, red across the psychomotor regions (page 67) is necessary to elicit a visceral reflex but when will is concerned, RED IS UNNECESSARY. Will, expressed positively, yields an energy with a polarity which is both positive and negative.

Will, expressed negatively, yields a neutral energy.

Insomuch as telekinetic phenomena are achieved by human energy which is positive or negative (page 41), it is understandable how an individual with an opposing will could frustrate a physical phenomenon.

Even antagonism and contempt which are evidently sub-conscious states of adverse willing yield a neutral duling energy.

There can be no question that experiments conducted before critical audiences often owe their failure to unfavorable attitudes of mind.

Lecturers, actors and musicians are similarly influenced. Their thoughts are expressions of energy differentiated by rate vibration and polarity (page 247).

Adverse willing is absolutely ineffective if the person thus willing wears any yellow material on the head.

The author suggests the use of yellow light in a place toward the attainment of the latter object. **DIFFUSE** yellow light does not produce the stomach reflex (p. 67), but only retards its elicitation for several seconds.

THE MIND'S EYE.—The mind coöperates in seeing. Vision is a subjective as well as an objective process. "None so blind as those that will not see" is literally true.

When the visual center (p. 253) is connected with the stomach region, looking at yellow yields a positive duling energy, whereas red yields a negative energy.

If the subject mentally affirms that he sees yellow when looking at red, the energy yield from the visual center is that of yellow—a negative duling energy.

Thus, an unfavorable attitude of mind physically prevents correct apperception.

The will component of mind is relatively of great potentiality. If the sphygmobiometer is employed, the receiving electrode is connected to the aerial (page 64) and the proximal electrode to the abdomen. Another person engages in thought for 30 seconds to charge the condenser (index of which is at 90). The energy current is then closed and the index of the condenser is placed at 0. Using the stomach reflex, the energy discharge of an average person occupied in thought is $\frac{1}{8}$ of an Ohm. Executing a like investigation with the same person who strongly wills the energy discharge is $5\frac{1}{2}$ Ohms. Thus will has an energy value nearly 27 times greater than thought. *Vide* cardio-kinesthesia.

SUPERNORMAL PERCEPTION.—The "medium," is a mere term sanctioned by usage to designate an individual with hyperesthetic perception, who can perceive with the senses, which the average person cannot.

The former is one "who sees without eyes" and employs the other senses in apparently impossible ways.

By the author's method of brain localization (page 229), such exalted sense reactions (page 254) are believable after an examination of a number of subjects thus endowed.

The latter not only possess exalted receptivity of the subliminal self but bicerebration (page 233).

In two individuals with "second sight" (telegnosis), a visual center was demonstrable in both hemispheres of the brain (page 264).

LEGENDARY LORE.—Tradition not explained has no official recognition. It is easier to condemn than investigate. If the Pasteurian spirit of catholicity were rampant, the humility of genius would find its expression in, "I do not know . . . I will investigate."—*Pasteur*.

Amulets, charms, talismans and the abracadabra have subserved their purpose in the cure of disease by the influence of the mind on the body.

Any deprecation of the latter is engendered by ignorance and ignores the LAW OF RESERVE ENERGY which is succinctly expressed by Prof. William James as follows:

It is evident that our organism has stored up reserves of energy that are ordinarily not called upon, but that may be called upon; deeper and deeper strata of combustion or explosible material, discontinuously arranged, but ready for use for any one who probes so deep, and repairing themselves by rest as well as do the superficial strata.

The tissues of the body are condensers (page 106) and are practically reservoirs of surplus energy. They can be tapped by suggestion an essential component of which is encouragement. Heretofore, our knowledge was incapable of explaining the influence of the mind on the body.

Let us express numerically and therefore without equivocation how much energy may be supplied by hope.

A depressed patient comes to my office and I find that the energy output from his left finger tips and psychomotor region is only 1-25 of an Ohm. He is assured of complete recovery and when this suggestion was accepted the energy output from his finger tips was 1 Ohm (increased 25 times) and from the left psychomotor region, 15-25 of an Ohm.

The tradition associated with a potato for the cure of rheumatism has its detractors among the erudite but not the afflicted.

Reference has been made to the causation of pains in rheumatics (page 270).

A cut potato (carried on the person) prevents elicitation of the stomach reflex when the negative pole of a bar-magnet is presented to the stomach region whereas the positive pole will evoke dulness. If the cut surface of a potato is charged with the streamings from the negative pole of a magnet it will not evoke the stomach reflex but will do so when charged with the positive pole. Thus, the potato in lieu of the rheumatic joints takes up the positive charges during ionization.

To be effective in attaining the latter object it is suggested theoretically, that the potato must be renewed for it is only capable of taking up a definite number of positive electrons.

"Rheumatic Rings" (of iron) when worn yield a neutral energy which prevents the elicitation of the stomach reflex by either pole of a bar-magnet (page 35).

Any supposed efficacy of the "rings" must be due to neutralization of the positive ions.

VARIOUS ELECTRICAL APPLIANCES (belts, pendants, in-

soles, etc.) have been similarly discredited without adequate reason.

If the current from a little dry cell is applied to the epigastrium for 10 minutes, the following may be noted:

BEFORE APPLICATION

Energy discharge from the left finger tips (male).....2-25 of an Ohm.
Discharge from left psychomotor region.....1-25 of an Ohm.

AFTER APPLICATION.

Energy from fingers.....3 Ohms.
Energy from left psychomotor region.....2 Ohms.

THE DIVINING ROD.—This supposititious relic of ancient superstition no longer belongs to occultism but is entitled to consideration as a scientific fact. The rod is merely a vehicle of expression of subconscious perception.

If the dowser is born and not made (*nascitur non fit*), it is not because he possesses a transcendental gift but because like the clairvoyant (page 261) he is in possession of supersensuous perceptive power; perception at a distance (page 254). Every man is an ideo-motor being and his idea is expressed in some kind of external motion.

It is impossible to entertain an idea without participation of the whole body in harmony with it.

Everything in nature is in a state of perpetual motion.

These rhythmic changes in the energy field by electrons are no longer a matter of speculation (page 8).

With the sphygmobiometer it is now possible to demonstrate the wavemetric index (page 286) of water, oil and minerals. The distinctive rates and lengths of waves is the basis of spectrum analysis; each chemical element when heated yields its own characteristic set of waves.

Thus subterranean determination of the foregoing as a prerogative of the specially gifted must be relegated to scientific reality.

By aid of the apparatus in question, one may even venture further and ascertain quantity and depth*

PSYCHOMETRY (page 256) and HUMAN RADIATIONS (page 9).

NOTE VII.

ORIGINAL CAPACITY— CONSERVATION OF ENERGY ELECTRONALGIAS.

The hereditarian contends that, "The Gods visit the sins of the fathers upon the children. That we are omnibuses in which all our ancestors ride, and that the life of each individual is, in some real sense, a continuation of the lives of his ancestors."

Despite this pessimistic fatalism, my investigations will not permit me to eliminate heredity as a factor in our so-called personality for, I am constrained to believe, in a mechanistic conception of life.

In accordance with the electronic theory (page 3), the individual plays an unimportant part in his life history.

Design in the creation of electrons and accident in their combinations are rampant in nature.

The inequalities with reference to humans are accidental, otherwise nature must be arraigned as unjust and even cruel.

Will is likewise an accidental attribute of mind, otherwise we would will what we are not.

The Binet-Simon and other measuring scales of intelli-

*It is impossible to describe the author's methods. They demand personal demonstration but a careful study of this book, will reveal to the reader, the QUALITATIVE determination of all things in nature.

gence must include among mental defectives the psychasthenic types which after the slightest mental effort yield the reaction of psychasthenia (page 174).

Man is essentially a reflex animal (page 26). Consciousness predicates reflex action and is not coextensive with mind (page 236).

"Science is organized common sense" and phenomena of the animal body must be interpreted from the viewpoint that, they are vital demonstrations of chemistry and mechanics.

The atom is a living thing "writ small" and we no longer believe that the atom is fixed and unchangeable. Applying the author's methods for detecting energy in so-called inanimate things, it may be demonstrated that all matter lives. That irritability may be demonstrated in metals, that the latter is assuaged by narcotics and the energy present may be subdued for many minutes by subjecting them to the action of an anesthetic.

Bose, has demonstrated the foregoing Galvanometrically, and by aid of his crescograph and oscillating recorder, has shown the amount of growth in plants and automatic movements.

The latter is also demonstrable by the visceral reflexes and in addition, one may measure the polarity and potentiality of plant energy.

Tropism, demonstrates environmental influences independent of will and so-called "freedom of will", is a myth inasmuch as man is a creature of his environment.

What the pragmatist calls truths, come, continue and pass like living creatures.

"An idea is true as long as belief in it is useful for our own life."

"Nothing endures eternally in order that all may endure."

"In the midst of life we are in death."

It is impossible to conceive physiologic activity without dissolution.

The super-activity of radium is due to the entanglement of radium bromid with the decomposition products of radium each of which is itself disintegrating.

If a radium salt is separated from the products to which it gives rise, it loses (temporarily) some of its radio-activity in the emanation given off and its activity is regained just in proportion as the other decays.

In the original activity of the electrons, lies the origin of mental characteristics and reaction, is in accordance with the electronic characteristics.

With the means now at our command of analyzing human energy, individuals will be properly classified and then assigned to the life-work for which they are fitted.

By determining the reaction of the sense centers (page 230), the child may be properly guided in its mental education. The child's senses are the avenues of knowledge and original capacity is concerned not only with seeing but in perceiving.

Ribot, divides mankind into three classes:

1. The highly active who never fall to a minimum of effort;
2. Those with moderate activity with limited energy-capital who represent the majority of mankind;
3. The asthenics who dislike work and are "born lazy."

Grasset, has sententiously portrayed certain individuals who say they cannot do things, their friends say, "they will not" and the physician says, "they cannot will." Such individuals have a deficiency of vital energy and their inadaptability is recognizable (page 268).

CONSERVATION OF ENERGY.—The ideal man has been called a perfect transformer. He acts like a reversible

battery; after having acted like an ordinary battery for discharge, he is regenerated by a nerve current which constitutes the recharging.

Life is a continuous adjustment to the environment (Spencer).

Astrology began its decay at the renaissance but its revival can be forecast in the terms of physical science.

The attraction of man by the sun, the mechanical energy imparted to him by the sun and rotation of the earth, atmospheric pressure, variations in temperature, rain and winds tremors of the earth and the electric potential at billions of volts all influence the microcosm by the macrocosm—the world machine.

Brain and physical exhaustion may be computed (page 63) and fatigue, is an intoxication of the cells (page 167).

Original mental capacity is essentially the capacity for charging and limiting the discharge of the human battery.

This energy production varies with the individual (page 53) and when so-called latent energy is produced, while it is referred to will (page 261) an original organization for will energy must pre-exist. The teleology of the organism is a question of its inherent properties.

Repair succeeding waste is an effort of least resistance thus avoiding the reaccommodation of the organism to changed conditions.

Nerve force has been compared to electricity and this comparison aids us in framing a positive knowledge concerning the action and laws that govern human energy which in relation to electricity are precise and extensive. Nerve health is the resultant of the income and expenditure of energy and the nervous system must be made equal to its task.

It has been shown that energy is constantly passing

from the body. To minimize this expenditure, the following procedures are apposite: 1. Short-circuiting the brain (page 109); 2. Posture (page 102).

The least expenditure of energy occurs in the recumbent posture with the head to the north. The maximum intake of energy occurs when the bed or couch is placed in the magnetic meridian (page 103) but in this position, there is a corresponding output of energy. The latter may be minimized by short-circuiting the brain or by the use of color.

"God has employed color in His creation as the unvarying accompaniment of all that is purest, most innocent and most precious" (Ruskin).

PURPLE on any part of the body inhibits the discharge of energy from the brain and body.

Dickens, it is said would invariably place his bed in a definite position with relation to the points of the compass. Dr. George White, informs me as follows:

"A stock breeder observed that the breeding of cattle was more effective if the mangers were placed in the magnetic meridian."

In the dark, the energy output is less than in the sun (page 61).

My observations show that this is also true of **RADIUM**.

In the dark a given quantity of the latter yields an energy equal to $\frac{1}{18}$ of an Ohm; in the sun, $\frac{1}{18}$ of an Ohm.

RED on the head increases the output of psychical energy.

The latter fact gives credence to the popular conception that an individual with red hair is usually very alert.

YELLOW on any part of the body augments the output of physical energy.

Elsewhere, the writer has discussed the deleterious influence of **NOISES** on the organism.

The structures of the body are infinitesimal magnets

(page 298), the polarity of which may be modified by discordant sounds.

Reference has already been made to the storage capacity of the tissues (page 106).

If a horseshoe magnet is placed in apposition with the 7th cervical spine for 15 seconds, the energy output (from the fingers) may be raised from $\frac{1}{8}$ of an Ohm to $2\frac{1}{2}$ Ohms but after one minute, it is again reduced to the norm.

MENTAL SHORT-CIRCUIT.—Intense voluntary attention conduces to nerve cell tension and mental relief is afforded by projecting impulses to the periphery to accomplish external work.

The former condition may be likened to a short-circuit in a dynamo which discharges the current within the machine thus causing its deterioration and minimizing its energy output.

ELECTRONALGIA. — The employment of this neologism by the writer, was suggested by his investigations which prove the character of the pains experienced by so-called human barometers (rheumatics).

It has always been suggested that electricity was the most significant meteorological factor in explanation of the peculiar behavior of many animals prior to a storm or other atmospheric disturbance.

Reference has already been made to the author's ether theory (page 223).

Coincident with the disruptive discharge from a large induction coil, draughts or saturation of the atmosphere with moisture, ionization (page 200) ensues and a structure previously implicated by disease (rheumatic joints, cicatricial tissues etc.,) becomes charged with positive electricity (stomach reflex employed in polarity determination).

The normal structures do not take up the charge in question.

The charge of positive electricity may be withdrawn from the diseased structure for a variable period of time (minutes to hours) until it is neutralized by a negative charge (from a bar-magnet). Investigations with colors demonstrated that VIOLET (negative non-duling energy) would not only dissipate the positive charge (like the negative pole of a magnet) but would prevent the charge when next to the pathological structure.

In accordance with the foregoing, a violet material may be employed as a prophylactic in electronalgias. In investigating the polarity reaction of different violet materials, it was found that cotton material frequently yielded a positive non-duling energy owing to the presence of some special dyestuff.

Thus, the use of the latter would do no good.

Violet silk or wool however can be employed as a prophylactic.

PAIN.—This is, "A beneficent reaction through the nervous system of altered function against threatening forces." The polarity of pain has heretofore never been solicited in behalf of its beneficent action in altering the character of the vital soil (page 195).

Many affections as noted throughout this work yield either a positive or negative energy.

Pain, which yields a neutral energy (page 164), may be regarded as a protective mechanism by soil modification (*vis conservatrix*) and in this sense, its subjugation would prove inimical to the natural curative power (*vis medicatrix naturae*.)

NOTE VIII.

THE SPHYGMOBIOMETER.

COMPONENTS.—1. Variable condenser. 2. Induction coil. 3. Resistance coil. 4. Sphygmophone.

The Variable Condenser (Wavemeter) is made up of semicircular metal vanes (43), of which 21 are movable and 22 are stationary. To the condenser is attached a circular black top with a 180 degree scale, knob handle, arrow indicator and binding posts (Fig. 69).

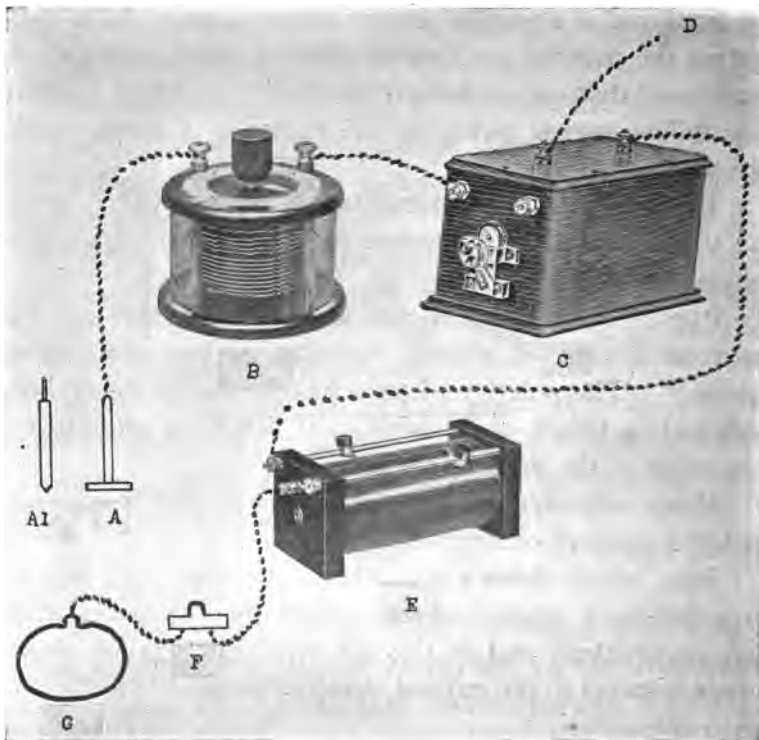


Fig. 69.—Sphygmobiometer. Showing the components and the direction of the energy current.

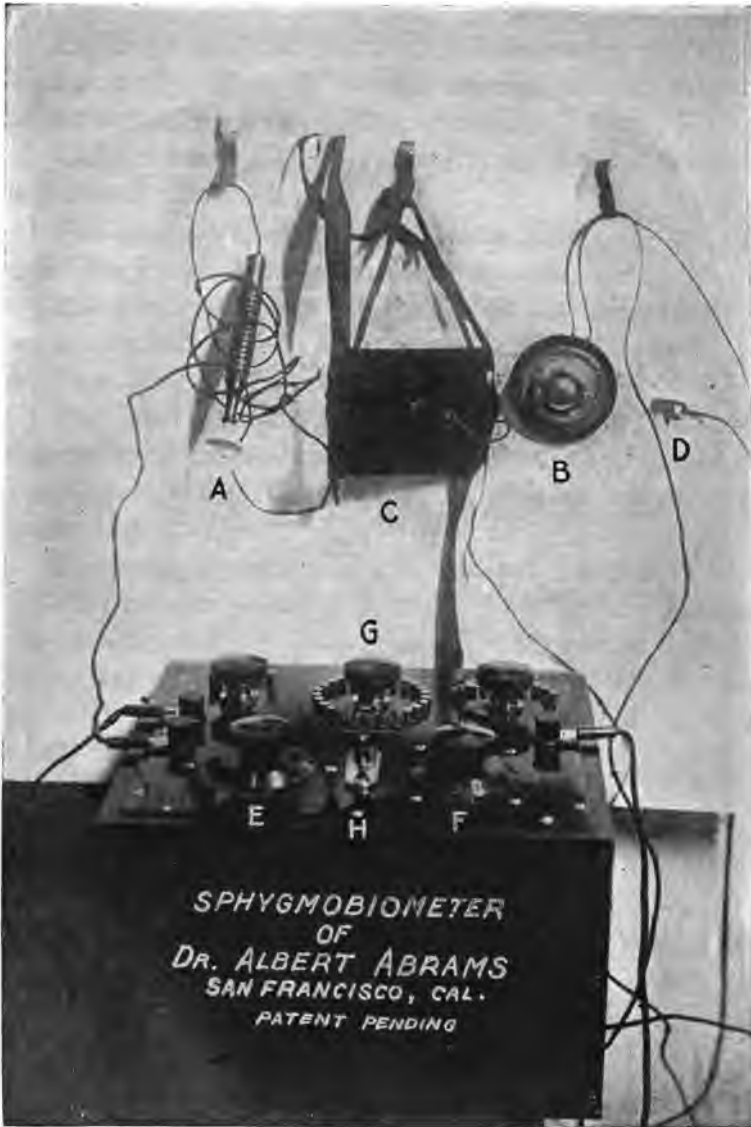


Fig. 70.—Sphygmobiometer. A, receiving electrode; B, push button; C, abdominal electrode; D, ground wire; E, potentiometer; F, variable condenser; G, rheostat; H, induction coil which may be put in or out of the circuit by aid of a lever.

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The Induction Coil (Fig. 69 c) is constructed on the conventional principle with vibrator eliminated. Its essential object is to increase the voltage of energy.

The Resistance Coil (Fig. 69 E) is practically the biodynamometer (Fig. 18).

This may be used for vibrodynamometry (p. 49) provided the index of the condenser is at zero.

The POTENTIOMETER (Fig. 70) is an arrangement for so regulating the voltage of energy that it will render the detector (heart) as sensitive as possible.

The index is usually left at zero (of the scale) but when the energy is too strong so as to diminish the force of the ventricular contractions (page 85), more resistance is interposed.

The foregoing apparatus is designated, BIOMETER.

The Sphygmophone (Fig. 71) is made up of a tambour (A) to which a lever (B) is attached. The end of the latter by making and breaking contact rhythmically on a platinum plate (C) evokes a sound from a buzzer by aid of an "Ever-ready battery (No. 750)." The latter is operative for three hours intermittent service.

Unipolar conduction (page 54) is employed with the apparatus.

ENSEMBLE.—The energy is conducted (Fig. 69) from the RECEIVING ELECTRODE (A), to one binding post of the CONDENSER (B), and from the other binding post of the latter, the Energy is conducted to one binding post of the INDUCTION COIL (C). From one binding post of the latter, a GROUND WIRE (D), is connected preferably to a radiator or a gas or electric fixture or water pipe may be used.

From another binding post of the induction coil a connection is made with one binding post of the RESISTANCE COIL (E), and from the other binding post of the latter a

connection is made with a PUSH BUTTON (F), for making or breaking the current circuit. The latter may be executed with the hand or the foot. From the latter, a conducting cord is attached to the ABDOMINAL ELECTRODE (G), which may for convenience be designated as PROXIMAL or DETECTING ELECTRODE.

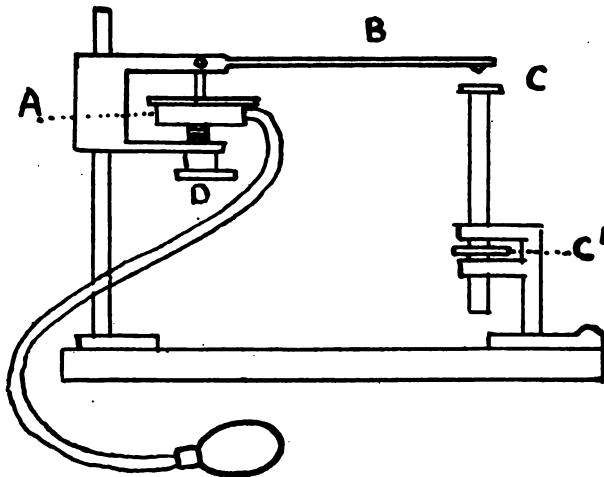


Fig. 71.—Sphygmophone.

THEORY OF ACTION.—If radio (wireless) telegraphy is employed as a paradigm, it is because it is better understood and serves our purpose by analogy.

The electro-magnetic waves set in motion by the wireless spark differ only in amplitude and magnitude from the ethereal vibrations set in motion by the revolution of the electrons (page 4).

During the revolutions of the latter, an electro-magnetic field of energy is produced which has thus far eluded all instruments for its detection.

Thus, the revolutions of the electrons ALONE substitute the apparatus (oscillator or exciter) for the production of waves in “wireless.”

Electronic energy as has already been shown (page 8) may be demonstrated physiologically.

No instrument of science can substitute the human organs for detecting the electro-magnetic field of energy (page 8).

In the use of the sphygmobiometer, **THE DETECTOR IS THE HEART.**

IRRITABILITY is the fundamental property to which is referred the total activity of living substance.

When the heart ventricle is inhibited by **MODERATE** vagus stimulation, the beats although slower are stronger, whereas when stimulation is **GREATER**, the contractions are diminished in strength and rate.

With the sphygmobiometer, energy is conveyed to the abdomen of the subject to secure reflex vagus stimulation like in the Goltz tapping experiment upon the abdomen.

When energy is conveyed to the variable condenser (Fig. 69B), the latter (at 90) stores it and the wave length of the energy released (by turning the thumb knob attached to the movable plates), is arbitrarily determined by a scale.

When the physiologist stimulates a nerve or muscle, the total energy (irrespective of wave lengths) is employed.

Matter is only an effect of a definite kind of motion and the variable condenser like the tuning coil in "wireless," increases or decreases the waves of energy to the proper lengths.

Tuning is of great importance in receiving a message and separating it from other "wireless" oscillations.

The sphygmobiometer is analogous to a receiving station with the heart as a detector. In justice to nature, it would be more apposite to reverse the comparison and make invention the mimicry of nature in accordance with the data cited on page 244.

Electrons are characterized by the uniformity of their vibrations.

The lines of light making up the spectrum of an element originate from the vibrations of electrically charged systems and if the vibrations of atoms were not attuned to each other, the spectral lines would be blurred and diffused.

My investigations show that, a specific form of energy may be condensed in various diseases and that, when this energy is released at a given point on the scale of the condenser (established empirically) and at this point only, the energy released stimulates the heart and raises blood pressure. Other visceral reflexes (stomach, liver, heart) are similarly synchronized.

When the point in question is attained, the lever (B), of the sphygmophone rises, thus breaking the circuit and the rhythmic buzzing corresponding to the finger pulse ceases.

Vagus stimulation is an individual question and even a feeble stimulus (in *Vagus hypertonia*) may diminish the strength of the contractions (page 85) in which instance, instead of the lever rising it would fall and INCREASED buzzing ensues. The latter could be accepted as an evidence of conveyed energy.

By throwing in Ohmic resistance with the resistance coil or by holding the receiving electrode further away from the energy source, the usual effect would be noted (rise of the lever). *Vide* potentiometer.

TECHNIQUE.—Finger pulsations (notably, middle finger) readily respond to vagus stimulation. The plethysmograph (Fig. 72) consists of a casing (A), inclosing a rubber bulb (B). When the entire finger (dorsal surface in apposition with the bulb) is introduced into the casing the straps (C), are fixed by buckles. Readjustment of the straps may be necessary to secure maximum lever oscillations. The

amplitude of the latter varies and it is better to employ a subject in whom the heart response to stimulation is known. Usually, the more vigorous the lever oscillations the less is the sensitivity of cardiac response.

When it is impossible to obtain lever oscillations from the finger pulse, the bulb (B) is removed from its casing and may be fixed over the radial artery by a special contrivance (Fig. 72). In the latter instance, the response is not as sensitive as from the finger.

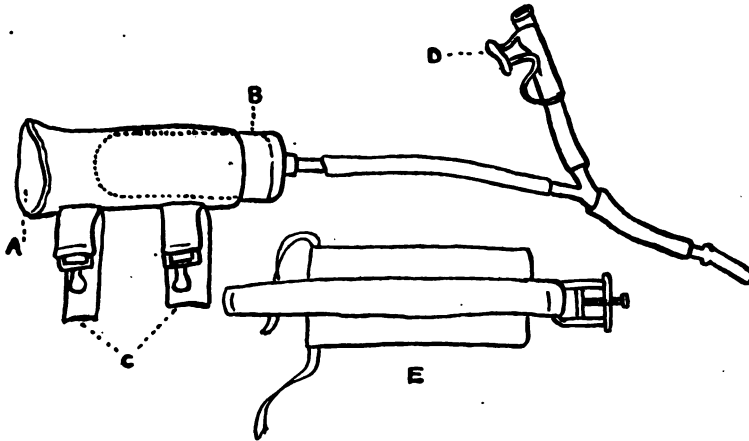


Fig. 72.—Plethysmograph. E, special contrivance for fixing the bulb (B) to the radial artery.

Before tightening the straps (C), release stop cock (D) to avoid rupture of the rubber of the tambour (A, Fig. 71).

When the straps are adjusted and the end of the tubing closed by the stop cock (D), oscillations of the lever commence.

To maintain passivity of the finger, the latter and arm must rest on an unyielding leather cushion (placed on another table). Other exactions are noted on page 85.

Next, secure maximum oscillations of the lever (B), by raising or lowering the screw (D, Fig. 71). Then lower or

raise the tambour on the standard (C', Fig. 71) so that the lever approximates the platinum plate (C).

By adjusting the screw (D) of the tambour or the other screw attached to the small post bearing the platinum plate (C'), just enough contact must be secured to elicit a faint buzzing. If the contact is too close, the sensitivity of the apparatus is correspondingly diminished inasmuch as the conveyed energy is insufficient to raise the lever.

The contact points (point of lever and platinum plate) must be cleaned occasionally for which purpose use the finest sand paper with oil and then wipe with a cloth.

If the tambour rubber is torn, release the screw holding the tambour and use a new piece of thin rubber dam which is made hermetically tight by waxed floss silk. The disk is fixed to the rubber by sealing wax. The latter is applied before the disk approximates the rubber and after the disk is allowed to fall into position, heated metal is placed in contact with the disk to melt the wax and thus fix the disk to the rubber.

The receiving electrode (A), consists of a broad and a pointed attachment (Fig. 69): the former to receive energy from a more extensive surface and the latter, for localizing the source of energy.

RADIO-DIAGNOSIS.—The electrode (G) is fixed to the abdomen of the subject employed so that its center corresponds to the umbilicus.

The epigastrium is the best area for indirect vagus stimulation (page 85).

The index of the condenser is placed at 0 of the scale.

Let us suppose the object of our diagnosis is a tuberculous lung.

Rhythmic buzzing of the instrument is heard. Some slight movement of the subject may disturb the contact so

that readjustment is necessary from time to time. With the button (F), the circuit is established.

An assistant or the physician now passes the large attachment of the electrode (Fig. 69) over the lung and when it reaches a tuberculous focus, the lever rises and the buzzing ceases (*vide* the anomalous reaction on page 286).

The height to which the lever rises is (as a rule) in proportion to the potentiality of the energy discharge.

With the index at 0 (of the scale of the variable condenser) only an energy discharge is demonstrated but the specificity of the energy discharged must be established by its wave length.

It has been demonstrated empirically that the position of the indicator on the scale of the condenser, will release energy sufficient to evoke vagus stimulation at given numbers only (WAVEMETER INDEX). At zero (of the scale), energy of all descriptions is discharged from the condenser to achieve vagus stimulation.

To determine the specificity of energy, two methods are available:

1. Place indicator on scale of the condenser at 1. Establish the circuit and gradually move the indicator to 15. If buzzing ceases at the latter number, the energy discharge is tuberculous.

2. Place indicator at 15, and then make and break the energy flow.

Each time the current of energy is on, the buzzing ceases. The vagus reflexes may become exhausted (page 170).

If the potentiality of the energy is low, the buzzing may continue for 10 or more beats before the lever rises and the buzzing ceases.

It may be necessary in such an event to allow the energy to accumulate for a minute in the condenser (indicator at

90) before vagus stimulation is attempted. In this event the current is not allowed to flow until the investigation is made (the indicator then being placed at 15).

The energy discharge is of greater potentiality at the wavemeter index than at zero.

Whereas normal energy which is electro-magnetic (page 225) will evoke a reflex at 3, and 8, of the scale, this does not occur with pathological energy.

IN ALL THE BIOPHYSICAL REACTIONS WITH PATHOLOGICAL ENERGY, THE DATA ACCUMULATED RELATIVE TO THE VISCERAL REFLEX ARE EQUALLY APPLICABLE WITH THE USE OF THE PHYGMOBIMETER AND REFLEXOPHONE.

We are now confronted with other problems (*q. v.* tuberculosis).

A healed tuberculosis yields an energy discharge and if a mixed infection is present, no vagus stimulation occurs at zero of the scale (page 286).

The condenser stores pus (streptococcic infection) and tuberculous energy. Pus energy is released at 7, and tuberculous energy at 15, hence, buzzing ceases at 7 and 15.

One minute should elapse before making the tuberculous reaction after the reaction for pus is executed.

With the resistance coil, the potentiality of the energy discharge may be estimated (page 275) thus gauging the severity of infection and controlling therapeutic results.

When the potentiality of energy is measured, the index of the condenser must be at zero. During the flow of energy, the indicator of the resistance coil which is placed say at 5 Ohms of the scale is gradually pushed toward zero.

If buzzing ceases at 1 Ohm on the scale or at 5/25 of an Ohm, the energy discharge represents an energy resistance in the first instance of 5 Ohms and in the latter instance of 5/25 of an Ohm.

The use of non-conductors in differentiation is important (page 125).

THE WAVEMETER INDICES WITH THE SPHYGMOBIOMETER ARE EQUALLY AVAILABLE WHEN THE STOMACH OR OTHER REFLEXES ARE UTILIZED FOR DEMONSTRATING ENERGY. THE BIOMETER IS ALONE EMPLOYED FOR THE LATTER OBJECT (REFLEXOBIOMETER.)

The dulness of the stomach reflex will be MORE INTENSE with the sphygmobiometer (increased voltage energy) than when discharged in the usual way (page 275).

When employing the stomach reflex in association with the sphygmobiometer, a small electrode is employed in the usual way.

VISCERAL SUFFICIENCY may be determined with the sphygmobiometer after the manner indicated on page 153.

Mere palpation of the RADIAL PULSE (eliminating the sphygmophone and utilizing the remainder of the apparatus), shows changes when the energy flow is established either at the general (zero) or the specific point (wavemeter index) on the scale of the condenser.

If the pulse is feeble, before vagus excitation is attempted, an absolute inhibition of the pulse or an augmentation ensues (page 284) when the energy flow is established. This crude method is available in diagnosis when the physician possesses the *tactus eruditus*.

Individual vagal reaction may be tested after the manner indicated on page 85.

Tracings with the sphygmophone (utilizing a straw lever) show a varying result. Pulse waves may be annihilated or increased in amplitude (Fig. 73) in accordance with the data already cited. The writer hopes by further investigations to secure sphygmograms which will indicate the specific nature of the energy discharge in disease (page 296).

The SPECIFIC RECOGNITION OF ENERGY may be achieved after the manner indicated on page 291; the apparatus (exclusive of the sphygmophone) is used with the visceral reflexes.

The disk (polar) is used after the manner already indicated (page 302) or a bar-magnet may be used (page 41).

Using the former, say in paralytic dementia (page 172) either surface of the disk presented to the frontal eminence will not cause the buzzing of the sphygmobiometer to cease. If, from the source of energy, the positive surface and not the negative surface of the disk causes buzzing to cease, the energy is positive.

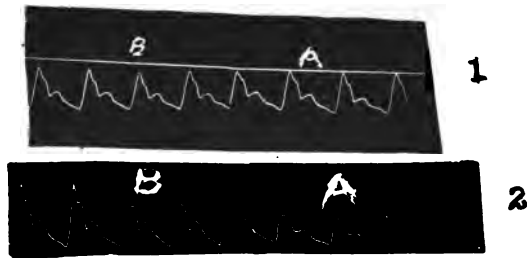


Fig. 73.—Illustrating sphygmographically the effects on the pulse amplitude in different individuals. 1, carcinomatous energy; B, before and A, after (during) action of energy. 2, showing the action of the same energy in diminishing the pulse amplitude; B, before and A, during the energy flow.

If the pulse effect is noted with both disk surfaces, the polarity of the energy is positive and negative.

The following tentative method may be used for determining SEXUAL POLARITY (page 110). When the left finger of a male is connected with the sphygmobiometer, and a female with normal polarity (page 110) touches the right psychomotor region (page 72) of the subject with the finger tips of her right hand (to energize the discharge from

the finger tips, let the discharge pass through aluminum, (page 55), buzzing ceases.

A like effect is noted in a male with normal polarity with the finger tips of the left hand.

With the sphygmobiometer, neoplasms may be localized and pain determined objectively (page 164). When the receiving electrode attains the site of pain, buzzing ceases. The heart and aorta may be delimited (page 105).

When the pointed electrode approaches the heart border, the lever rises and buzzing stops.

POLAR CARDIAC REACTIONS.—The sphygmophone demonstrates the following new reaction assuming that vagal stimulation increases the force of the heart (page 85).

During the rhythmic buzzing of the instrument, the negative pole of a bar-magnet applied to the extreme left of the apex beat causes the buzzing to stop, whereas the other pole intensifies the buzzing.

Careful palpation of the pulse shows like effects.

The negative pole has a pressor and the positive pole, a depressor effect.

The opposite effect is noted with the poles in question when the right heart border is subjected to polar action.

The sphygmobiometer (exclusive of the sphygmophone), may be used for determining the effects of energy with the sphygmomanometer (page 84) after the following methods. One is to presuppose the usual vagal response; rise of blood pressure (page 85).

1. By noting the action on the mercurial column or the needle of an aneroid gauge (page 84).
2. By palpation of the pulse: the systolic pressure is from 3 to 8 mm. higher (during energy flow) than before the energy is conveyed.
3. By the auscultatory method with the sphygmomet-

roscope over the brachial artery: systolic pressure is from 3 to 8 mm. higher during the time energy is conveyed than before.

WAVEMETER INDICES.

Determination of the specificity of energy after the manner indicated on page 280, is noted by the vagal response when the indicator is at different numbers on the scale of the condenser.

<i>Disease</i>	<i>Vagal Response (cessation of buzzing)</i>
Carcinoma	6
Chronic Inflammation	15
Sarcoma	17
Syphilis (from liver, spleen and spine)	6-or 7
Autointoxication (intestinal)	10
Tuberculosis	15
Pus	7
Arthritis Deformans	{ (streptococcic infection) 7 { (paratuberculosis) 15
Pain (does not pass through a non-conductor (page 186)	32 to 35*

A SYMBIOTIC REACTION (page 138) presuming the co-existence of syphilis and tuberculosis would be as follows: After condensing the source of energy a reflex would be discharged at 6 or 7, and 15 respectively. In the presence of pus and tuberculosis, at 7 and 15.

Non-duling energy (p. 43) has its definite wave-meter index and at the latter point ONLY, it will evoke a visceral reflex by its yield of duling energy.

Thus the thyroid tissue yields a non-duling energy but at 7 of the condenser, dulness of the stomach is elicited. Similarly, the index of the gall-bladder is 6, appendix 7 and stomach 10.

*Absolute accuracy cannot be attained as yet in measuring wave lengths of electronic energy by our condensers due to defects in the dielectric capacity.

FAT has a wavemeter index of 5. Elicitation of the stomach reflex at this point when energy is conveyed from the heart, liver, or kidney, suggests fatty degeneration or infiltration.

LEAD has a wavemeter index of 8, and it may be definitely located even through the chest.

The latter is of great importance in locating bullets.

The foregoing is also demonstrable by biosphygmo-manometry.

SPHYGMOBIOMETRIC ADDENDA.

1. Short-circuiting the brain (page 109) will increase the sensitivity of the visceral reflexes and will restore them when lost.

2. The sphygmobiometer does not change energy polarity. In other words, the polarity is the same as when conducted without the apparatus (page 303).

3. In estimating the wavemeter index of energy, make several readings and take the average one. The lever oscillations are plethysmographic. Such volume pulses are affected by respiratory undulations and several other factors.

4. Always discharge the energy in the condenser before charging it again by touching its both binding posts with two fingers.

5. The sphygmobiometer may be used for conveying energy in gyrography (page 238).

6. If the lever of the sphygmophone does not work freely, adjust the screws at its pivotal point.

7. Always select a subject with a regular pulse.

8. To test the vagal reaction (page 85), place one end of a bar-magnet to the receiving electrode of the sphygmobiometer.

NOTE IX.

BIO-CLINICAL REACTIONS IN TOXICOLOGY.

The conventional methods of toxicological analysis may now be supplemented by the electronic tests of the author thus suggesting an aid of clinical importance. The stomach reflex in a male subject was employed (page 43) and the reactions of the few drugs cited were demonstrable after average medicinal doses of the medicaments.

The reactions were obtainable from the LIVER and the VERTEBRAL COLUMN (7th dorsal spine). If the areas in question already show a reaction (auto-intoxication and syphilis), the toxico-clinical reactions are not dependable.

ALCOHOL (page 145).

ARSENIC.—Negative duling energy.

ATROPIN.—Neutral duling energy.

COCAIN.—Negative duling energy.

LEAD.—Neutral duling energy.

MORPHIN.—Positive and negative duling energy.

POTASSIUM IODID.—Transitory negative duling energy (*vide* page 207).

The spinal reactions seem to demonstrate that at least in the norm, the cells secreting the cerebro-spinal fluid are not as impervious to drugs with complex molecules as is supposed by Ehrlich, whose suggestion of "dead corners" makes the treatment of parasymphilitic diseases so difficult. In medicinal doses, the foregoing drugs were demonstrable in the spinal fluid (electronic reactions) within five minutes after their administration.

NOTE X.

TRACHEAL PERCUSSION—CRICO-THYROID REFLEX.

Reference to the *tracheal traction test* has been made *elsewhere*.

By conveying energy to the abdominal electrode with the sphygmobiometer, a reflex stimulation of the broncho-constrictor fibers in the vagus ensues and the contraction of the bronchial muscle, puts the air in the trachea under tension, thus converting the normal tracheal resonance into a dull or flat sound. Percussion is executed over the cricoid cartilage with the head of the subject bent slightly forward.

The energy may be conducted directly to the trachea with a conducting cord like in the elicitation of the stomach reflex (*q. v.*) and polarity may be similarly determined.

CRICO-THYROID REFLEX.—Coincident with the contraction of the bronchial muscle, the crico-thyroid space closes.

The latter phenomenon is best elicited when the finger tip is placed at the side of the crico-thyroid membrane.

The crico-thyroid muscle is supplied by the superior laryngeal (branch of the vagus)

The reflex in question ensues in from 3 to 30 seconds after energy is conveyed and is brisk in the young and tardy in elderly subjects. In the latter, closure of the space is maintained for a number of seconds even after the energy is no longer conveyed.

NOTE XI.

THE CELL DOCTRINE.

Reference has already been made to the CELLULAR THEORY (page 2).

The conception of the cell has sustained many vicissitudes.

Primarily, its wall was considered the essential part but this was supplanted by the protoplasmic theory and later, by the nuclear conception.

The study of the centrostome yielded the undoubted fact that, none of the cellular constituents can be regarded as the cell or as constituting life. The reaction against the cell doctrine was further fortified by the fact that, the cells are all connected by protoplasmic fibers and are not independent units and furthermore, that the organism cannot be regarded as the sum of the activities of the individual cells. Organization surpasses cell structure and the cell must be an organization of infinitesimal units.

Biologists no longer seek explanation of the life processes in the microscopic cellular constituents. The latter are only a part of a machine the activity of which is the result of the action of physical forces.

NOTE XII.

SPLANCHNO-DIAGNOSIS — BIOSPHYGMOMANOMETRY — CARDIO-KINESTHESIA — PREDETERMINATION OF THE SEX OF EGGS — ALOPECIA — PERSONAL EQUATION — REFLEXOPHONOMETRY — TELEDIAGNOSIS — VAGAL POLARITY — ENERGEIAOMETRY.

SPLANCHNO-DIAGNOSIS.*—Reference has been made to the splanchnic nerves (pages 81, 83, 249). The regulatory mechanism of the splanchnic vasomotor system is attained by vasomotor reflexes which supply autonomically the quantity of blood necessary for visceral activity.

The splanchnic circulation is identified with the emotions and in shock, the vessels are paralyzed resulting in dilated splanchnic vessels. Worry, fear and pain are attenuated shocks and abdominal sensations in such conditions may be referred to the vicious circle created by splanchnic vasodilation.

If PATHOLOGICAL ENERGY is conducted to the area between the 3rd and 4th dorsal spines, its specificity as revealed by definite areas of ventral dulness (Fig. 74) may be demonstrated. This action is dependent on stimulation of the *depressor nerve*.

Physiologically, a nerve is endowed with different functions.

The *vagus* has fibers which control the rhythmicity, irritability, conductivity, contractility and tonicity of the heart.

All physical phenomena are forms of motion and according to the energy conveyed, specific fibers of the depressor

*The pathology of the Splanchnic Circulation was first exhaustively discussed in the author's work "Splanchnic Neurasthenia," E. B. Treat and Co., New York.

nerve are stimulated resulting in vasodilatation of the splanchnic vessels in different abdominal areas.

A like phenomenon (*q. r.*) is noted with the reflexophone.

A simple conducting cord (Fig. 19) is used; one electrode of which is approximated to the source of pathological energy and the other, between the 3rd and 4th dorsal spines.

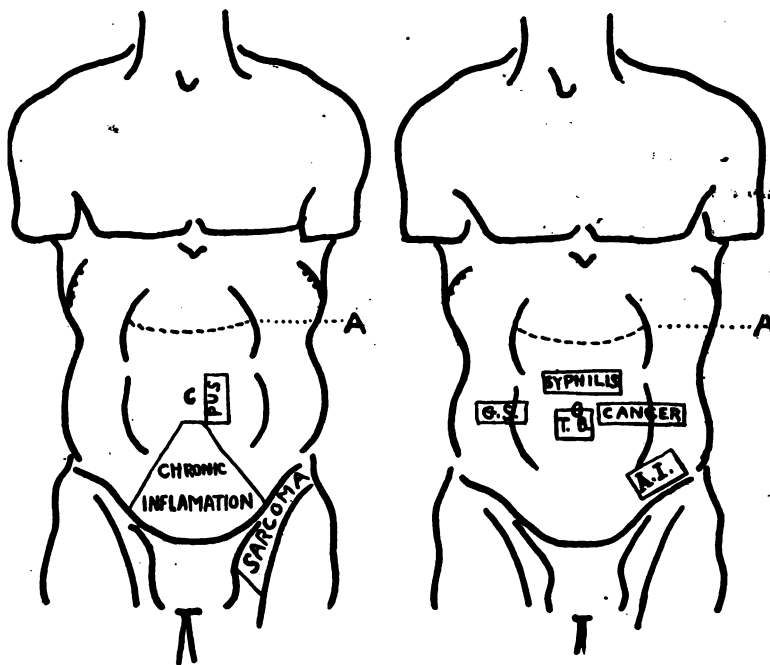


FIG. 74.—Areas of ventral dulness in splanchno-diagnosis.

Unlike the stomach reflex (p. 124), THE SPLANCHNIC VASOMOTOR REFLEXES CANNOT BE EVOKED IF PATHOLOGICAL ENERGY TRAVERSES A NON-CONDUCTOR either with or without a variable condenser (wavemeter indices, p. 286).

If a biodynamometer (p. 50) is used in connection with a variable condenser for conducting energy to the stomach, to the area between the 3rd and 4th dorsal spines or to the

reflexophone, the phenomena peculiar to each will ensue through a NON-CONDUCTOR (thin rubber) at the VIBRATORY INDEX (p. 191) provided the index of the condenser is at zero.

The vibratory indices (with a tested biodynamometer) are as follows:

Carcinoma.....	50
Syphilis.....	20
Autointoxication (intestinal).....	10
Tuberculosis.....	15
Streptococcic infection (pus).....	15
{ Gall-stones Chronic Inflammation	20
	40
(Energy does not traverse a non-conductor.)	

The splanchnic areas of ventral dulness measure approximately as follows:

ENERGY	TRANSVERSE DIAMETER	VERTICAL DIAMETER
Syphilis.....	5 cm.....	invades liver dulness
Autointoxication..... (intestinal)	4 cm.....	6 cm.
Carcinoma.....	9 cm.....	4 cm.
Chronic Inflammation.....	11 cm.....	12 cm.
Sarcoma.....	5 cm.....	3 cm.
Tuberculosis.....	5 cm.....	4 cm.
Pus.....	2 cm.....	4 cm.
Gall-stones.....	5 cm.....	4 cm.

The reactions are alike in both sexes. The subject on whom percussion is executed must face the west in the erect posture. The precautions noted on p. 32 must be rigorously observed.

Thirty seconds may elapse before the areas of ventral dulness are elicited and the latter are always in proportion to the potentiality of the conveyed energy and the duration of its action.

The dull areas disappear during a forced inspiration and are twice as sensitive as the reactions of the stomach reflex. Symbiotic reactions (p. 286) ensue when two forms of energy are synchronously conveyed. Thus, in mixed infection in tuberculosis, there will be two areas of dullness corresponding to tuberculosis (Fig. 74) and pus (2 cm. to the left of the navel).

If the biometer is employed (p. 275), the dull areas appear either at zero on the scale of the condenser or at the wave-meter indices (p. 286).

BIOSPHYGMOMANOMETRY.—This signifies the use of the biometer (p. 275) with a sphygmomanometer (p. 84).

The best type of the latter is shown in Fig. 34 and it is so constructed that any rise in pressure may be read directly or may be indicated by the sound of a buzzer or the lighting of a lamp.

All the data concerning the biosphygmomanometer correspond to the sphygmobiometer (p. 272) only substituting for the latter the fact that any blood-pressure rise substitutes cessation of buzzing.

The pressure rise varies from $\frac{1}{4}$ to $1\frac{1}{2}$ mm. (direct reading) when the energy is allowed to flow.

The degree of rise indicates the energy potentiality provided the same subject is employed.

In some instances, the primary action of conveyed energy is to decrease pressure but this contingency may be obviated by the potentiometer (p. 275).

Vagal exhaustion easily ensues after several observations on the same subject and rest is imperative.

Before an observation is attempted, permit the oscillating needle to attain a constant position (leakage, movement of the subject, etc.).

Tentative observations appear to show that **SEXUAL**

POLARITY (p. 110) may be determined as follows; In a male, a pressure rise ensues when the finger tips of the LEFT hand approximate the distal electrode whereas in a normal female, a like effect is only noted with the finger tips of the RIGHT hand.

CARDIOKINESTHESIA.—This neologism is worthy of acceptance insomuch as the mind can no longer usurp the functions of sentiency.

The heart has always been apostrophized by the poet as the abode of the emotions and, "In many ways doth the full heart reveal the presence of love it would conceal."

The biblicist pays a more extended tribute to the organ, "As he thinketh in his heart, so is he."

"Sensations sweet, felt in the blood, and felt along the heart" are responses equally as acute as revealed to the mind by the senses.

Thought is energy and consequently only a mode of motion (p. 233).

A frequent experiment which the author believes is original is to request any one in an assembly to will FORCIBLY and invariably, one skilled in palpation of the pulse can say the instant the person executes the power of willing.

Any person with a responsive vagus (p. 85) may be employed for this purpose. The nature of the vagal response is either an infinitesimal inhibition or irregularity. Some sensitives experience a peculiar sensation (*heart reflex*) in the epigastrium at the moment another person wills.

The action of energy on the vagus has been explained (p. 85).

Adverse willing (p. 260) by another will nullify the pulse phenomena. The moment of INTENSE thought can be similarly demonstrated if the person thus engaged in thought covers the head with red material (p. 69). THE LATTER IS

UNNECESSARY IN THIS AND SIMILAR EXPERIMENTS IN TELEPATHY PROVIDED THERE IS A RED LIGHT IN THE ROOM. However, one must remember that it is difficult to exclude the thoughts of others when there are several persons present but if the latter short-circuit the brain (*vide* personal equation) this possibility may be obviated.

THE CHANGES IN THE RADIAL PULSE AS DESCRIBED MAY BE UTILIZED FOR DEMONSTRATING THE CONVEYANCE OF NORMAL OR PATHOLOGIC ENERGY.

The latter is best conducted to the epigastrium (p. 85).

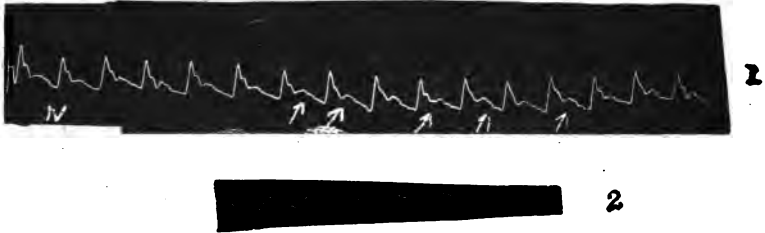


FIG. 75.—1, Sphygmogram illustrating the effects on the line of descent when energy is conveyed to the epigastrium through the biometer at zero on the scale of the condenser. 2, Illustrating the same effects when tuberculous energy is similarly conveyed at the wavemeter index of this energy, *viz.*, 15.

If the energy is primarily allowed to pass through the biometer, the pulse change may be noted either at zero on the scale of the condenser (showing only energy in general) or at its wavemeter index (p. 286) which demonstrates the specificity of the energy.

The pulse changes noted by palpation may now be demonstrated by the sphygmograph (Fig. 75), although mention of this impossibility was noted on page 90.

This graphic demonstration of energy with the heart as the detector is of the greatest scientific value. Thus, in 2, fig. 75, one observes that tuberculosis only shows a characteristic sphygmogram at its wavemeter index, *viz.*, 15.

PREDETERMINATION OF THE SEX OF EGGS.*—Having established a basic principle in the matter of polarity in relation to sexuality (p. 120), it was only natural to extend the scope of my observations. The following data are presented. Eggs of the domestic fowl yielded an electronic reaction in the center but not from the ends. For the reaction, the stomach reflex was employed although the reflexophone is equally available.

On July 29, '15, predetermination of sex was made and the results were reported Sept. 7, 1915.

Four eggs yielded a negative polarity. The result after incubation was four pullets (hens).

Five eggs yielded a positive polarity but only two hatched. The result was, one hen and one rooster.

Note here an error in observation.

Three eggs yielded a neutral polarity and as predicted, the eggs were sterile.

In one of the eggs yielding a negative polarity an attempt was made to reverse the sex by painting one end of the egg with a yellow (p. 122) coloring material (gamboge). The result was a rooster.

ALOPECIA.—Reference to this subject at this time is to correct any possible errors that may ensue when electronic reactions are executed with energy derived from the head in **PSYCHONEUROSES**. Some forms of symptomatic alopeciae yield a **NEUTRAL** duling energy (usually with a wavemeter index of 6) strictly limited to the bald areas. The psychoneurotic reactions are in no wise modified by the conventional forms of baldness (congenital, premature and senile).

PERSONAL EQUATION.—What we perceive frequently depends on what we expect to perceive. The employment

*I am very much indebted to I. Douglas, of Cloverdale, Cal., whose careful observations and keen interest enabled me to report these results.

of WILL on the part of the operator (p. 261) working with the reflexes or the reflexophone may dull either the latter or the stomach. To eliminate a possibility of this kind, the physician should temporarily short-circuit his brain (p. 109).

REFLEXOPHONOMETRY.—There is a unity of the living and non-living world of materiality. The reflexes exhibited in the living world may be demonstrated in certain metals. These reflexes have suggested the neologism, METALLIC REFLEXES. All matter lives (p. 266) and polarity is not an exclusive property of magnetic materials (p. 266). Like in the living, the electrons which make up the structure of metals may be regarded as a number of infinitesimal magnets. The theory of magnetism may be applied to the metal used in the reflexophone, *viz.*, the molecules are arranged in a haphazard manner but when acted upon by energy, they become so arranged that their poles point in the same direction (Fig. 76).

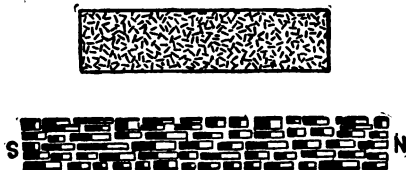


FIG. 76.—Illustrating the theory of magnetism. In the upper figure the molecules owing to their disorderly arrangement have lost their magnetism, but when the molecules are arranged end to end, so that their N-seeking poles all point in one direction and the S-seeking poles in the other as in the lower figure, the molecules are magnetized.

Elsewhere, the mechanic effects of magnetism have been described. Similarly, when the metal of the reflexophone is subjected to energy, the tension of its walls is augmented and its vibration is changed (p. 25). The changes in resonance of the reflexophone has its analogue in spectroscopy (p. 49).

The phonetic recognition of a reflex is a matter of experience. In telegraphic transmission, the mechanical device that was first used for impressing the dots and dashes on a ribbon was discarded by the operators who found that they could read the dots and dashes from the click of the instrument.

STOMACH REFLEX AND REFLEXOPHONE.—Many reasons urged the necessity for replacing the stomach reflex with a *viscus factitia* notably, the difficulty of obtaining a proper subject, the vagaries of the stomach reflex, its enervation and the elimination of the personal equation in percussion.

With experience in the recognition of sound nuances, the reflexophone will be found to be as sensitive as the stomach reflex. It responds like the stomach reflex to all the reactions (including polarity) in this book.

CONSTRUCTION.—Its essential component is a metal cylinder (A, Fig. 77) covered at one end with thin rubber dam (B) with a minimum amount of tension and secured by floss silk (waxed). To the cylinder A, is fixed three buttons (C, D, E) and refer respectively to the area for receiving energy from the electrode (REC), for determining energy polarity and for percussion. F, electrode for conveying energy to the reflexophone. The shaft of this electrode has a scale. G, cord for conducting energy to REC; H, condenser connected with REC for intensifying the conveyed energy; I, switch for making or breaking the energy current; J, muffler; K, standard with a revolving disk marked POSITIVE and NEGATIVE for determining energy polarity.

EMPLOYMENT.—Before diagnosis is attempted, the physician must acquaint himself with nuances of sound following the conveyance of energy from F to C. Strike E, with the felt hammer (Fig. 29) a series of uniform blows to obtain a maximum degree of resonance. It is necessary to

insert the rubber tubing (not shown in fig. 77) under the rim of the cylinder and possibly to shift the position of the cylinder to obtain good resonance. The muffler (J) must as a rule be clear from the rubber (B).

All the following phonetic exercises must be executed objectively, *i. e.*, the physician must be ignorant of the acts of his assistant.



FIG. 77.—Reflexophone.

The latter places one end of a bar-magnet to F, after the switch I, closes the current.

One then notes the transition of sound from resonance to dulness. The crescendo effect is gradual and the full effect is not noted for several seconds. With experience, the transition in sound is noted immediately even at a distance of 20 or 30 feet. During the time energy is conveyed, say with

a magnet, sound transitions are best noted by opening and closing the switch.

Next attempt to recognize whether the positive or negative pole of the magnet is touching F. To attempt the latter, first note the dulness and then turn the disk marked positive to D and then the one marked negative.

If the dulness continues with the positive disk surface and the sound becomes resonant with the negative surface, the magnetic pole employed by the assistant was positive.

Next, attempt to determine the moment a person WILLs (p. 260). During the time the physician strikes the reflexophone a series of uniform blows, there is an immediate change in the percussion note. This is an excellent objective demonstration of telepathy. With a red light in the room (p. 296), concentrated thought on the part of another will immediately change the resonance. A code can be thus established. A person willing consecutively three times would convey the message yes and twice, no and etc.

An interval of several seconds must elapse between willing and thinking for reasons to be mentioned.* Investigations after this manner were successful with R. R. Rogers, manufacturing chemist in this city at a distance of 2 miles and with H. G. Aylsworth, a "wireless" expert of this city at a like distance.

Next attempt to determine male and female polarity with the fingers approximating F (p. 112). The tips of all the fingers must touch the electrode. The sound of the reflexophone only dulls when the finger tips of the LEFT hand of a male approximates F, whereas a like effect in a

*By means of the method specified, the author was able to receive correct messages from I. E. Levi, Esq., a resident of Cupertino which is distant 41 miles from San Francisco. The electrode F was attached to the antennae as shown in Fig. 64.

normal female is only observed with the finger tips of the RIGHT hand.

Note also that the metallic reflex of the reflexophone cannot be elicited when normal energy traverses a non-conductor.*

Prove the gravitational theory (p. 226).

The amateur in phonology soon determines the best object on which to place the reflexophone.

If the latter is placed on a thick layer of felt on a hard-wood table (latter on carpet), the best results are achieved. C, for receiving energy should face the west (p. 34).

BEFORE ATTEMPTING ANY NEW EXPERIMENT STRIKE THE REFLEXOPHONE A SERIES OF BLOWS WITH THE FELT HAMMER.

The object of the latter expedient is to restore the resonance of the instrument. This action is not unlike that in "wireless" when the automatic tapper strikes the coherer to readjust the filings.

DIAGNOSTIC TECHNIQUE.—The object of investigation is a supposititious pulmonary tuberculosis. F, is gradually passed over the lung during the time percussion of the reflexophone is executed. The moment a tuberculous area is attained, dulness supplants resonance and the polarity of the transferred energy is determined by the disks (K); restoration of resonance with the positive and negative disks—the energy is neutral. The moment the energy is cut off at the switch (I), the dulness disappears and reappears when the energy current is on:

ALL THE REACTIONS PERTAINING TO THE STOMACH HOLD WITH THE REFLEXOPHONE.

*The reflexophone is provided with a non-conductor of rubber (not shown in Fig. 77) which can be interposed between C and REC when it is necessary to differentiate normal from pathological energy.

The scale on REC (in millimeters) approximately measures the intensity of the conveyed energy.

BIOREFLEXOMETRY.—The reflexophone previously described is available for ordinary use but when the vibratory index, wavemeter index and measurement of energy potentiality* is desired it is made so that it can be used in connection with the biometer (p. 275). If one substitutes for the action of the heart, the transition of resonance to dulness, all the reactions mentioned in connection with the sphygmobiometer (p. 280) are available with the reflexophone. This apparatus is provided with an AUTOMATIC TAPPER which excludes the personal equation in percussion.

NON-DULING ENERGY (p. 43).—With the reflexophone, note that either disk (K) will dull the apparatus. If the non-duling energy is positive, dulness will persist with the positive disk and clears with the negative disk. If the non-duling energy is neutral, neither disk will dull the reflexophone DURING the flow of energy.

REFLEXOPHONIC RECOGNITION OF SPECIFIC ENERGY.—It has been found empirically that the lower end of the cylinder (A) will only dull in specific areas when certain kind of energy are conveyed to it like in splanchno-diagnosis (p. 291). These areas not shown in fig. 77, are specified as follows:

- P. —Pus.
- A. I.—Autointoxication.
- C. I.—Chronic Inflammation.
- G.S.—Gall-stones.
- C. —Carcinoma.
- S. —Syphilis.
- T. —Tuberculosis.
- Sa. —Sarcoma.

*The biometer must be grounded at the connection specified on the coil, otherwise the POLARITY of the energy passing through it will be reversed.

In chronic inflammation the energy does not pass a non-conductor like in carcinoma (pages 184 and 191).

The dulling of these specific areas has its analogue in spectroscopy (p. 49).

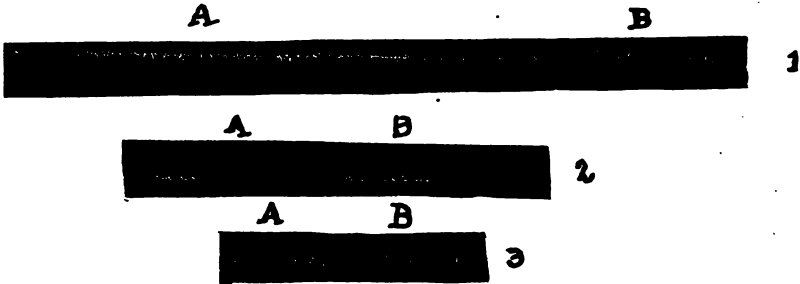


FIG. 78.—Reflexophonograms (to be read from right to left). 1, Tracings before (B) and during the time (A), energy is conveyed to the reflexophone. Note in B, that during the energy conveyance, the reflexophone partially recovers to again relapse into its former state (diminished curve amplitude). 2, Tracings of tuberculosis before (B) and (A), during the time tuberculous energy is conveyed with the variable condenser at 15 (wavemeter index). 3, Tracings before (B) and during the time (A) carcinomatous energy is conveyed through the variable condenser at 6 (wavemeter index). These tracings show that a DIAGNOSTIC RECORD may be made with the reflexophone in association with a variable condenser (biometer employable) at specific points on the scale of the latter. Tracing 1, shows only energy transmission in general and was obtained without the condenser.

In seeking these areas, adjust muffler (J) so that the maximum resonance is obtainable at the lower end of the cylinder (A). As a rule, the felt of the muffler must just approximate the rubber (B). Use the felt hammer (Fig. 29). It is understood that the cylinder in its totality dulls at E, but when a specific energy is conveyed, only specific areas dull when the latter are percussed. When the specific areas of dullness are sought, remove the rubber tubing under cylinder (A). Specific recognition of energy is also possible when E, is percussed when energy is conveyed at definite vibratory or wavemeter indices*.

*Definite words thought of by a transmitter (p. 247) may likewise be revealed by specific areas of dullness on the cylinder. Interchangeable cylinders are constructed for this purpose for psychologic study and also for the mineralogist.

REFLEXOPHONOGRAMS.—If the button of a cardiograph is so adjusted to the rubber (B) of the cylinder so as to elicit maximum oscillations of the lever of a tambour, a graphic record may be made on a registering apparatus when E is tapped.* To attain the maximum resiliency of the cylinder, the rubber tubing is placed beneath the latter. The effects of energy conveyance is noted in fig. 78.

TELEDIAGNOSIS.—It occurred to the writer that pathological energy could be conveyed over long distances and that reactions could be made at the office of the physician. My anticipation in this regard was more than realized with the stomach reflex or the reflexophone.

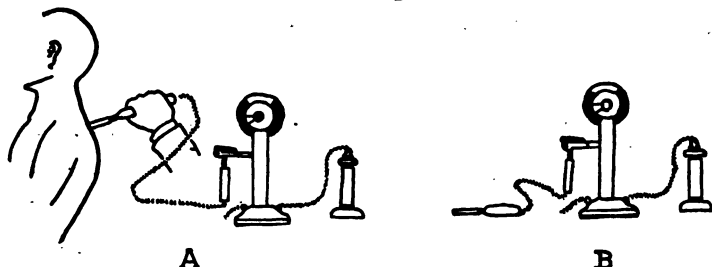


FIG. 79.—Telediagnosis (Pathotelephony). A, showing the method of conveying energy from the subject to the telephone hook at the transmitting station; B, receiving the energy at the receiving station. The distal electrode in B, may be used for eliciting the stomach reflex or it may be connected with the biosphygmomanometer, reflexophone or energieaometer.

To execute this method of pathotelephony, the hook of the telephone is used at the transmitting or receiving station (physician's office). The telephone may be grasped in the hand (insulating material on it prevents the transmission of normal energy) and the hook applied directly to the energy source or in the case of pus, the latter may approximate the telephone hook.

Better still, a conducting cord (with aluminum electrodes) is allowed to hang from the hook (Fig. 79) of the telephone

*The automatic tapper is employed to attain uniformity in the force and rhythmicity of the blows.

both at the receiving and transmitting stations, and the other electrode is used at the receiving station for receiving the pathological energy and at the receiving station for conveying it to the stomach region (for the stomach reflex) or to the reflexophone. All kinds of reactions (polarity, vibratory rate and wavemeter index, splanchno-diagnosis, etc.) may thus be made despite distance, and all the reactions thus far executed were as distinct as though made in my own office.

My primary efforts were made with Dr. V. G. Vecki, of San Francisco, whose eminence as an andrologist is conceded. His office is approximately two blocks from mine. He requested me to diagnose a specimen of urethral pus which he had placed on a glass. To assure myself that the energy conveyed was from his office, I requested him to approach the hook of his telephone with the specimen at intervals of his own choosing. After having announced to him over the telephone every time he did so, I was ready to make my reaction. The reaction demonstrated the absence of gonococci which later he confirmed to his surprise by microscopical examination.

One week later, he requested me to make a reaction from a specimen of urethral secretion from another patient. This specimen gave the gonococcal reaction. He demurred to this reaction claiming that the individual from whom the specimen was obtained had married only three weeks before and that his previous physician could find no gonococci in his urethra.

My reaction was confirmed by Dr. Vecki, by microscopical examination of the secretion.* Later, reactions were obtained from Berkeley, a distance of 11 miles.

*It has been suggested by the captious critic that telepathy is responsible for my results. In the experiments with Dr. Vecki, who was not aware of the nature of the specimens, this contention may be eliminated.

On Oct. 12, 1915, the author requested Prof. J. T. Fisher, of the University of Southern California in Los Angeles, to have in readiness several specimens for the object of telediagnosis. Each time Dr. Fisher approached the specimen with his electrode, my assistant so announced. This was done a number of times with two errors. Finally, a diagnosis of streptococcus was made (among several specimens selected by Dr. Fisher and unknown to me) which was correct.

The telephone wire (non-insulated, 30 to 50 feet above the ground and not reenforced by telephone repeaters) extends 475 miles from Los Angeles to San Francisco.

RADIOGEOLOGICAL DIAGNOSIS.—My reactions with the ground as the conducting medium for conveying pathological energy were uniformly successful in San Francisco but only partially so at long distances. Further experiments will be necessary to carry this method of telediagnosis to a successful issue.

The subject used for the test stands on an aluminum plate connected to the ground wire of a telephone (a part of which is free from insulation) or directly to the earth. If the reflexophone is used, it is similarly connected at the receiving station. At the transmitting end the electrode is similarly connected. It is best to employ a rubber covered electrode at the receiving station to eliminate all but the conveyance of pathological energy.

VAGAL POLARITY.—In a male, the following is noted when energy is directed toward the vagi in the neck.

POSITIVE energy to the left vagus causes the stomach reflex whereas negative energy is without any effect in the elicitation of the reflex in question.

NEGATIVE energy to the right vagus will only produce the stomach reflex. These reactions show the opposite polarity in a female. The foregoing may be utilized in diag-

nosis. Thus, carcinomatous energy (positive) will only evoke the stomach reflex when directed to the left vagus in the neck in a male and the right vagus in a female.

ENERGIAOMETRY.—The greatest discovery ever made in magnetism was that of Oersted;—the production of magnetism from electricity and the greatest discovery ever made in electricity was that of Faraday:—the production of electricity from magnetism. The whole domain of physics is tending toward a unification of the various forms of force under one great principle. This tendency is suggested by the transmutation of various forms of force such as the conversion of sound into electricity and of the latter, into heat, light, motion or chemical energy. All the forces are under the influence of one or two mechanic conceptions:—that of ether and that of ultimate particles which embody matter and electricity.

Matter is an accumulation of positive and negative electric charges and the chemic elements are merely varying numbers and arrangements of these charges.

It is not strange that Thales, should have endowed the magnet with a soul and when Lucretius, was inspired to sing the magnet's power in his "*De Rerum Natura*," he could have apostrophized no greater marvel.

The law of magnets:—Like poles repel each other and unlike poles attract is practically limited to magnetic materials.

Magnetism is the oldest of the physical sciences and despite its antiquity, its exact nature is still unknown.

The law of attraction and repulsion is universal and it remains for us to prove the correctness of this contention by a method of procedure which, we believe, is essentially new. We believe furthermore, that by this method we shall better acquaint ourselves with the supra-sensual world.

Polarity as has been shown (p. 228) is not the exclusive prerogative of magnetic materials.

When studying the ATOM IN VIBRATION (p. 49), it was shown that a definite vibratory rate could be established in different diseases (p. 191).

What holds for health and disease is equally applicable with reference to all things in nature.

PERSONAL MAGNETISM (p. 254) can no longer be regarded as mythical as we shall presently show.

In the discussion of love (p. 231), reference was made to attractive force.

In the Sanscrit language the magnet is called "Ayas-kanta" (loving towards iron.)

Apparatus heretofore suggested for measuring human radiations are impracticable.

ENERGEIAOMETER.—This term refers to an apparatus (Fig. 80) devised by the author for measuring energy. Its principle embraces the polarity of a suspended non-magnetic needle.* One end of the latter (negative pole) is repelled by a negative, and attracted by a positive energy. The other end of the needle (positive pole) has a contrary action†. When the energy conveyed to the needle is positive and negative, there is a to and fro motion which is slow and regular and, if the energy is neutral, the motion is the same but jerky in syphilis and relatively rapid in tuberculosis.

The best results are attained when the needle is placed directly north and south and the apparatus is level. As before remarked, the results attained are based on my observations concerning the atom in vibration (p. 49). The energy must be conveyed through the biometer (p. 275)

*Energy conveyed through the biometer will also attract or repel (dependent on energy polarity) the needle of an ordinary compass.

†For convenience, the negative pole is employed by the author in his biotic estimations. Several observations should be made to exclude movements from causes other than conveyed energy.

at the wavemeter index and vibratory rate (p. 191) of the particular energy investigated.

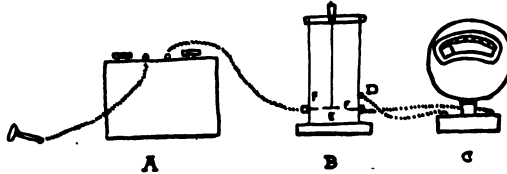


FIG. 80.—Energeiaometer. A, biometer (p. 275); B, suspended magnetic needle (E) in case which, when deflected by conveyed energy, establishes an electrical connection (positive or negative at F, F), thus causing the needle of the Galvanometer (C) to deflect to the right or the left side of a scale; D, circuit between B and C.

When the energy flow is established by B, Fig. 70, the special movements of the needle ensue.

ENERGEIAOMETRY IN DISEASE*.

DISEASE	VIBRATORY RATE	WAVEMETER INDEX	NEGATIVE POLE OF NEEDLE
Carcinoma	50 . . .	6	Attracted.
Chronic Inflammation	40 . . .	15	Attracted.
Syphilis†	20 . . .	6	{ To and fro motion (jerky).
Tuberculosis	15 . . .	15		{ To and fro motion regular but not slow.
Pus (Streptococcic infection)	15 . . .	7	Repelled.
Autointoxication (Bacillus coli)	6 . . .	10	{ To and fro motion (regular but very slow).
Sarcoma	7 . . .	17	{ To and fro motion (slow but regular).
Gall-Stones	20 . . .	15	{ To and fro motion (slow and regular).
Pain‡ (pages 164 and 286)	20 . . .	32	{ To and fro motion (notably attracted).

*The reaction indices may vary (foot note p. 191) but all energeiaometers are correctly gauged by the manufacturers before delivery.

†Parasyphilis yields a like reaction at these indices. Thus, in dementia paralytica (p. 172), the reaction from either frontal eminence is at 20 and 6.

‡To compute the intensity of pain (p. 164) the author prefers the stomach reflex. Pinching the skin in an average person yields an energy equal to 6-25 of an ohm. Severe pain may overcome a resistance of 200 ohms.

The needle movements are small and may be observed directly (accurate vision necessary), or by aid of a reading telescope. By aid of a mirror attached to the needle, the movements of the latter are accentuated by reflection on a screen so that many persons may make synchronous observations. The movements of the beam of light may be photographed on a moving surface thus furnishing a graphic method when the jerky movements of the needle in a neurasthenic are contrasted with the steady flow of normal energy.

In Fig. 8o, the apparatus is so constructed that the polarity of the energy is determined by the movements of a Galvanometric needle.

The potentiality of the energy conveyed is determined by the swing of the needle with the reading telescope or with the potentiometer (p. 275).

The latter is of the greatest importance (p. 44).

When the amplitude of the swing of the needle is determined, accurate and uniform readings can only be secured when a fixed distance is established between the tip of the needle and the electrode (within the box). The best movements are attained when the latter is 1.5 cm. from the point of the needle. Another method of measuring energy potentiality is after the manner suggested on page 47; needle movements are noted at variable distances when the electrode of the energeiaometer is on a line with the energy source.

The potentiality and polarity of DRUGS (p. 209) may be determined by the energeiaometer.

DRUG	VIBRATORY RATE	WAVEMETER INDEX
Safranin.....	4	4
Gamboge.....	5	13
Picric acid.....	3	3

NORMAL HUMAN ENERGY.—By aid of the energieometer, it can be shown that human radiations (p. 9) are electromagnetic (p. 225). When the vibratory rate of the biometer is at 14, and the wavemeter index at 8, and the energy of a bar-magnet approximates the receiving electrode of the apparatus, the needle is either repelled or attracted (when the energy flows) according to whether the negative or positive end of the magnet is in apposition with the electrode.

The latter fact definitely establishes the escape of electrons from a magnet (p. 224). The finger tips of the left hand in a MALE (negative energy) will repel the needle and the finger tips of the right hand in a male (Figs. 26 and 27) approximating the receiving electrode will attract the needle.

In a FEMALE, this polarity from the finger tips is reversed.

The foregoing experiment not only demonstrates human radiations but it also shows the magnetic character of the latter inasmuch as at the vibratory rate and wavemeter index cited, only energy of a magnetic character will influence the needle. This observation sustains the magneton theory (p. 211). Other experiments demonstrate that every phenomenon is not only a question of vibration but of polarization, thus emphasizing the importance of duality in Nature.

The energy discharge in a temperamental individual is relatively great.

A magnet capable of lifting nearly a pound has less influence on the needle than the energy discharge from the finger tips of a temperamental person.

Traumatic neuroses may now be explained. After a shock or concussion of the spine, the potentiality of the energy discharge is diminished owing to the disarrangement of the magnetons (p. 211, Fig. 76). At the indices for recog-

nizing human energy (normal) with the energeiaometer, topographical percussion may be executed after the manner cited on page 101 *et seq.*

The influence of COLORS on the individual may be determined. Red (bright) on the head, increases the rapidity and amplitude of the needle deflections whereas yellow on the head, reverses the polarity of the male and female.

The energy discharged from PLANTS is likewise magnetic and it can be shown that some colors thrown on the plant will so modify the polarity that the plant energy previously attracting the needle will repel it or *vice versa*. Heliotropism may thus receive explanation.

PSYCHOLOGICAL INVESTIGATIONS.—The energeiaometer only confirms the numerous new data cited in this work. The nature of gravitation (p. 225) may be demonstrated. Personal magnetism (p. 254) is not a myth and "*actio in distans repugnat*" cited by the medieval scholastic philosophers is easily disproved. Technically, the positive temperament (firm will power) is negative (negative pole of needle repelled) and the negative temperament is positive.

Argument by analogy is deceptive but positive and negative temperaments, and mediumistic polar attraction and repulsion, are conditions capable of demonstration.

The latter psychodynamic phenomena find expression in will. The potentiality of the latter, varies as determined by the energeiaometer, and its polarity may be expressed positively or negatively so that, the needle may be willed in or out. If one person willing that the needle should go out is opposed by another person (with a stronger will) willing a deflection of the needle in the opposite direction, the latter will prove the victor in the will contest. Such opposition of will is enhanced by a violet purple color on the head.

The specificity of thought may be determined after the manner indicated on page 247.

The energieaometer may be connected with a buzzer and the instant of profound and concentrated thought (p. 236) may thus be recognized at enormous distances. In this experiment the receiving electrode is connected with the antennae (Fig. 64).

The following usual code words may be selected with their vibratory rate and wavemeter index:

	WAVEMETER INDEX	VIBRATORY RATE
Saved.....	5	30
Well.....	2	40
Arrived.....	4	12
Operated.....	6	16
Girl.....	7	13
Buy.....	8	12
Sell.....	11	13

If the reaction for lead or iron is desired (287), for the former, place the index at 8 (wavemeter) and at 40 (vibratory rate) and for the latter, at 6 (wavemeter) and 20 (vibratory rate).

With the energieaometer, one may demonstrate the rhythmic undulations in the flow of human energy. The potentiality of will and thought may be computed.

It is impossible to cite all the experiments made by the author with this new instrument. Its use explains many supposed contradictions of physical law as exhibited by the "psychic medium" and others; it is destined to dignify diagnosis as an exact science and to aid the physicist and physiologist in the interpretation of phenomena heretofore regarded as inexplicable.

TELAERODIAGNOSIS.—Reference has already been made to telediagnosis on page 305. The author has recently suc-

ceeded in recognizing energy by aerial transmission over a distance of one mile and hopes that further experiments will enable him to exceed this distance.

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In the midst of all this came the diagnostic methods of Abrams. Methods so simple, so scientific, so exact, so practical, at once made the processes of the laboratory obsolete and historic in medicine."

Prof. Perdue is Director of the largest laboratory for cancer research in America and observes as follows:

"I have never seen the Abrams reaction fail or be misleading. I can say the same for the syphilitic reaction and the reaction for the predetermination of sex."

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**THE ELECTRONIC REACTIONS
OF ABRAMS**

THE ELECTRONIC REACTIONS OF ABRAMS*

PRELIMINARY.—Diagnosis is the most exalted and yet the most difficult task of the physician—*Qui bene dignoscit, 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, and, 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

*Reproduced, with additions, from *International Clinics* (Vol. I, 27th series, 1917); "A quarterly of clinical lectures by leading members of the medical profession throughout the world." In this book, the *stomach reflex* was utilized but owing to the difficulty encountered in its elicitation, the splanchnic reflexes are here substituted. All progress made on the subject is incorporated in the author's Journal "*Physico-Clinical Medicine*." Numbers in parentheses refer to pages in "New Concepts in Diagnosis and Treatment," where the subject is more fully elaborated. When "S" precedes the number it refers to the page in Spondylotherapy.

one physics, one chemistry and one mechanics governing animate and inanimate phenomena, and the latter must be studied by physico-chemical 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. Every atom is a microcosm teeming with Titanic forces and our scientific conception must embody *hylozoism*—all nature, including the world itself, is alive.

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 physico-chemical 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 (3).

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 this 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. Energy is susceptible of exact measurement and as all forms are convertible into heat, physicists measure it as such. The writer measures energy by his reflexes.

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;

*Prof. Thompson (Cambridge, England), received in 1916, the Nobel prize for his theory of the electrons. Prof. R. A. Millikan, (University of Chicago), succeeded in isolating and weighing electrons, the ultimate units of electricity and the most unthinkable minute particles ever thought of by man.

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 (20) surpasses, in sensitiveness, the most impressive scientific instruments and the retina is approximately 3000 times as sensitive as the most rapid photographic plate.

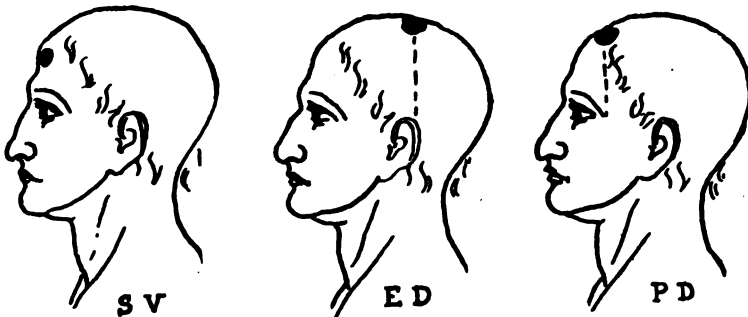
Consideration will, at this time be only accorded to the diagnosis of carcinoma, syphilis, tuberculosis, sarcoma and strep infection. The diagnosis of other affections are and have been reported in the writer's Journal, "*Physico-Clinical Medicine*." An atlas is published showing the topography of other reactions.

SPLANCHNO-DIAGNOSIS.—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 dullness over a consolidated lung area, and, if the former is unrecognized, I doubt the physician's ability to interpret the latter.

SPLANCHNO-VASCULAR 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 fibers 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 specific abdominal areas as revealed by dullness 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 action referred to is not unlike that in spectroscopy by which composite radiations are analyzed.

The author now utilizes cephalo-diagnostic areas (CD) in preference to the spinal areas (Figs. 81, 82 and 83). There are also pulmodiagnostic (PD) splenic (S) and solar plexus (SP) reactions. The areas will be generically specified as DA.



FIGS. 81 82 and 83.—Cephalodiagnostic areas.

The following angiodiagnostic reaction is easily executed:†

Take a culture of tubercle bacilli and direct the opening of the tube (without removal of the cotton) to the region

†With other forms of pathological energy, reactions invariably occur in definite areas of the ear and face and substantiate the rationale and definite localizations of the areas in splanchno-vascular diagnosis. (*Vide* in the latter part of this contribution, the use of the ear of a white rabbit.)

between the 3rd and 4th dorsal spines (depressor nerve) and note that within 10 seconds, flushing ensues in the region of the infraorbital foramen just below the infraorbital ridge. The area in question represents a streak. Apply the tube to the 1st 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 to 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 conducted from a tuberculous lung. Like phenomena are noted with a culture of the pneumococcus. In executing the experiments, the subject must be *grounded* facing the geographical west.

This experiment may be elaborated to cause a more diffused redness or pallor by aid of a conducting cord with two electrodes. To accentuate the *flushing*, fix one electrode at the first dorsal spine and allow the other electrode to come in contact with a grounded metal plate. Conversely, to accentuate the *pallor*, fix one electrode at the area between the 3rd and 4th dorsal spines and the other on the ground plate. Grounding is executed during the time energy from the culture tube is applied to secure flushing or pallor.

It is assumed that in the foregoing experiments and the assumption is verified by the results that, the center for vasodilation of the vessels of the face is between the 3rd and 4th dorsal vertebrae, and that of vasoconstriction, at

the 1st dorsal spine. In the norm. both centres are in equilibrium and the vessels are maintained at a definite caliber. When we ground the area of vasodilation (between the 3rd and 4th dorsal spines), the energy necessary to maintain dilation is abstracted and the other center (vasoconstriction) has undiminished play and pallor is accentuated when the culture of tubercle bacilli (energy) is directed to the 1st dorsal spine. The converse is likewise true when one grounds the 1st dorsal spine.

Dr. George O. Jarvis, who confirmed the visceral reflexes of Abrams, at the operating table, executed several investigations during laparotomies bearing on the conveyance of energy from tuberculous and carcinomatous material to the region between the 3rd and 4th 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 intraabdominal areas. This observation was confirmed by Drs. Parsons, A. W. Boslough and others.

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 dullness.

METHOD.—A healthy person (subject or reagent) other than the patient is used for making the electronic diagnosis. Exceptionally, the patient may be used (*vide* auto-electronic reactions later). 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 splachno reflexes cannot be elicited in the recumbent posture. The subject stands on plates of aluminum or sheet iron which are connected by insulated wires to a faucet, radiator or gas fixture. A separate ground should be used for each plate. 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 at the SV area (Fig. 81) of the reagent. Within thirty seconds, a specific area of *abdominal dullness* will be elicited and the latter persists during the energy flow. The dullness disappears during deep inspiration but reappears with ordinary breathing by the subject. It is most pronounced at the end of expiration. If abdomen is too tympanitic, diminish area of abdominal resonance, by having reagent place his arm across his abdomen. If abdomen is not tympanitic, have him hold one electrode at the SV area and have him extend other arm away from his body. If reagent is afflicted with disease, he will show areas of dullness corresponding to diseased energy from the blood or from a patient. For esthetic reasons, a screen may be placed between the subject and the

*When an intermediary is used (reagent) or when reactions are elicited from the patient (autoelectronic reactions) both must stand facing the west in such a way that the body is parallel with the earth's axis. Any deviation from this position will abrogate the areas of dullness. Owing to the magnetic declination one must conceive the earth's axis in relation to the true geographical poles.

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 growths may be directed to the SV area cited without the use of conducting cords.

In the event the reagent shows areas of abdominal dullness of morbid origin, they may be dissipated for hours by concussing the 7th cervical spine followed by concussion of 2nd dorsal spine. This maneuver dilates the spleen and aspirates the toxins into the latter organ. Concussion of 2nd dorsal spine fixes this splenic reflex of dilatation for several hours. Concussion of 2nd lumbar spine causes an extrusion of the toxins into the circulation and the dull areas reappear.

TOPOGRAPHY OF DULL AREAS IN DISEASE*
 SPLANCHNOVASCULAR (SV) REACTIONS

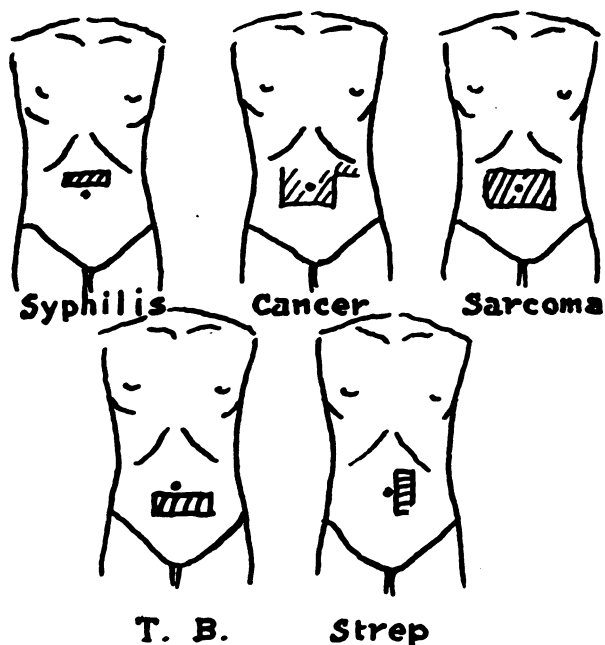


Fig. 84.—Acquired (VR55) and Congenital Syphilis (VR57)
 Cancer, Sarcoma, Tuberculosis and Streptococcus.

PRECAUTIONS.—Do not permit the *fingers* to come in contact with the metal of the electrodes and direct them

*These measurements were determined in a man used as a subject. If a boy is used, the areas would be less. The topography of the areas may vary in a subject with splanchnoptosis, but they may always be predetermined by cultures and specimens.

away from the latter as in holding the magnet (Fig. 91). †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. 92), uniform measurements can only be secured by cords of the same length and section.

Pressure on the dorso-lumbar spine or metasternum during percussion accentuates ventral dullness (S8o). If the physician places his feet on the ground plates during percussion dullness is accentuated. If the physician touches his foot to one foot of the reagent, dullness is accentuated. If his both feet touch both feet of the reagent, dullness is dissipated. Equally effective is the execution of percussion at the end of forcible expiration. The electrode approximating the CD (Figs. 81, 82, 83) areas should not exceed $1\frac{1}{2}$ inches in diameter. Direct contact of the electrode with the SV areas must be avoided by encircling disk of electrode with rubber (with center of same uncovered). 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

†Touching the conducting cords or crossing of the same (in using biodynamometer Fig. 92) must be avoided to prevent short-circuiting of the energy.

than with a light blow, and the intestinal reflex of contraction (S325) also evoked would yield a dullness which would be misleading. *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.

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 this is not possible, have reagent wear a black covering to exclude light. If colors approximating this shade are placed across the cranium of the subject, many reactions cannot be elicited. Short-circuiting the brain by uniting the two brain hemispheres with metal will dissipate the reactions. This also ensues by any metal uniting the two halves of the body across its median line on the exposed skin. Grounded, the examiner achieves a like object with two fingers.

Always note the percussion note over the abdomen before executing a test, for owing to the sudden accumulation of gases the transition of resonance to dullness 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 dullness.

SYPHILIS.—In this disease though quiescent and in any stage and irrespective of treatment, the reaction is always elicited from a few drops of blood on a clean white blotter free from printing and from any part of the spine,

liver or spleen.* It is also obtainable over any active luetic lesion elsewhere. With the electronic reactions, the ubiquity of syphilis can be demonstrated and recalls what the eminent syphilographer, Fournier said of it—"General pathology should be made a mere annex to syphilography." The German diagnostician avers:

"Was man nicht diagnostieren kann, Sieht man als n'syphilis an."—(When your diagnosis goes amiss, always think of syphilis.)

The recognized serological methods are discounted as is evident from the following:

"A positive Wassermann unsupported by clinical evidence is not sufficient evidence of the presence of syphilis." (Keyes.)

"Errors in the diagnosis of specific diseases of the nervous system were no greater in the pre-Wassermann days than at the present time." (Weisenburg.)

There is only one chance in five that a specimen of blood submitted to ten serologists will result in an agreement. Collins (*A. J. M. Sc.*, 1916), estimates that 15 per cent of paretics and 70 per cent of cerebrospinal syphilitics fail to give a positive Wassermann in the spinal fluid.

*The spleen in the norm yields a pseudosyphilitic reaction, *i.e.*, it provokes the reflexes peculiar to syphilis. The spleen is the cemetery of the infections. This structure is the pharmacy of the organism. The antibodies specific for each disease are the drugs and react like disease (other than at the definite vibratory rates of the latter.) Differentiation is possible by recalling that it will not produce the reflexes at the vibratory rate of syphilis (55 for acquired syphilis and 57 for the congenital form: if the latter is of *human origin*, there is a reaction at 20 but if from vaccination only (bovine type) a reaction is only at 57). Vide treatment of *syphilis* in 8th edition of spondylotherapy.

Abrams' reactions inform one:

1. Whether syphilis is present or absent.
2. If present, whether it is congenital or acquired.
3. What tissues are or will become invaded (*vide infra*).
4. What is the intensity of the disease?
5. Site of inoculation.
6. Approximate date of inoculation.
7. If of male or female origin, etc.

It is now known that there are distinct strains of the *spirocheta*; 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 (*spirocheta* present) without histological lesions or spirochetes elsewhere. In a considerable percentage of newborn infants spirochetes at the autopsy have been found in the aorta.

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

In addition to this general reaction, there are specific areas of dullness which seem to indicate the tissue for which the spirochetes 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. Some of the areas thus far elicited are shown in Fig. 85.

‡Specific strains in many other diseases have also been noted by the author by aid of his reactions. They are shown in his iconography (atlas) of the Electronic Reactions.

Under energetic antiluetic treatment, the reaction from the frontal eminences in dementia paralytica (172) may disappear.

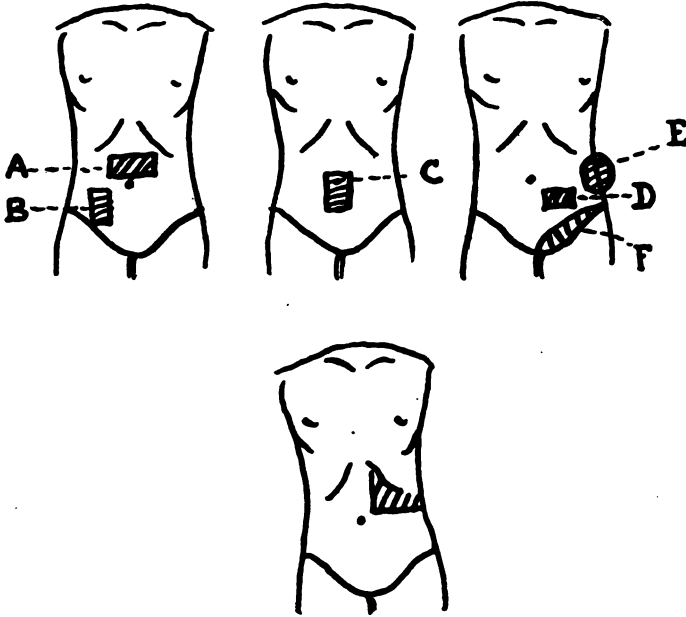


FIG. 85.—Ventral areas of dulness in syphilis when the energy in this disease is conveyed to the SV (CD) area. A, area in all cases of syphilis irrespective of the special structure invaded. In addition to the latter, the area B, is present in cardiovascular lesions; C, lesions of spinal cord and nerve roots; D, eye lesions; E, pulmonary lesions; F, digestive lesions.

Lower Fig.—Site of area in dementia paralytica from energy conducted from the spine (more particularly the forehead) 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.

Fournier, observed that 98 per cent of the children of syphilitic parents are syphilitic. The electronic reactions show that they are *all* syphilitic. The tale of syphilitic parents may be inscribed as follows: Sterility, still-births,

miscarriages, abortions, progeny dying in infancy of marasmus, meningitis, convulsions, etc. Familial syphilis is suggestive if any of the following diseases have occurred among relatives: Tabes, paresis, aneurysm, apoplexy (before 50 years of age), cardiorenal disease (before 50 or 55 years), headaches (not relieved by the usual means), nervousness (without obvious cause), rheumatism (obscure) and tuberculosis in several members of the same family, because hereditary syphilis according to Fournier, strongly predisposes to tuberculous infection later in life. Congenital syphilis is unfortunately identified with its manifestations at birth and we forget that it may not develop until adolescence or late in life (*syphilis tarda*). I wish to direct attention to certain stigmata which, with the evidence of the electronic reactions prove to be fairly constant in hereditary syphilis:—Argyll-Robertson pupil, tubercle of Caribelli and the auricular brachial and digital signs of Abrams.

The Argyll-Robertson pupil is regarded by many as positive proof of nervous syphilis.

No attention has been directed to the slow or sluggish pupil (reflex to light), which I find to be fairly constant in hereditary syphilis. It may be more marked in one eye. Testing for the Argyll-Robertson pupil demands circumspection (*Vide Physico-Clin. Med.*, Dec. 1917, p. 41).

A tardy pupillary reflex is equally characteristic of latent acquired syphilis. A normal pupil will react any number of times to a flashlight. In syphilis, however, it may react several times and then fail to respond. If *blue light* is directed on the pupil for about 30 seconds and the pupil is again examined, the light responses are temporarily restored in syphilis.*

*Light must be held as far as possible from the eye.

The *Tubercle of Carabelli* is a supernumerary cusp demonstrable on the palatine surfaces of the upper first large molars. The latter yield the electronic reaction of syphilis and radiograms which I had made of a number of them show diminished density (deficient calcification) in contrast with the other teeth.



FIG. 86.—Auricular Sign of Abrams.

Incidentally, I may mention that the Hutchinsonian teeth also show the electronic reaction for syphilis whereas the other teeth in the same mouth do not. The *auricular sign of Abrams* consists of a distinct ridge running from the antitragus downwards toward the lobule (Fig. 86). This ridge when palpated has a cartilaginous consistency. The *Digital Sign* of Abrams (Fig. 87) is fairly constant. It is an incurvation of the little finger (usually implicating the second phalanx).

The *Brachial Sign* consists of an incurvation of both radial bones.

ELECTRONIC REACTIONS WITH BLOOD.*—A few drops of blood taken from a patient and allowed to dry on a slide or white paper will, when the radioactive energy (radiant electricity or electricity in vibration) is conducted

*Reactions are executed at the writer's "Physico-Clinical Laboratory," from blood sent from different parts of the world.

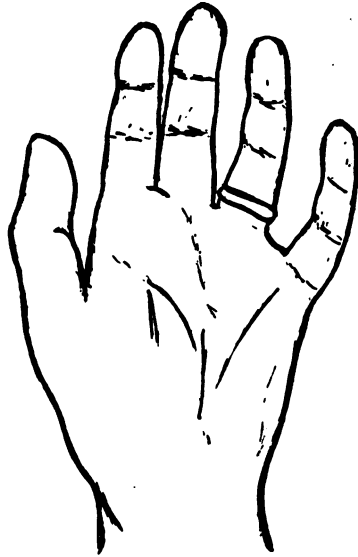
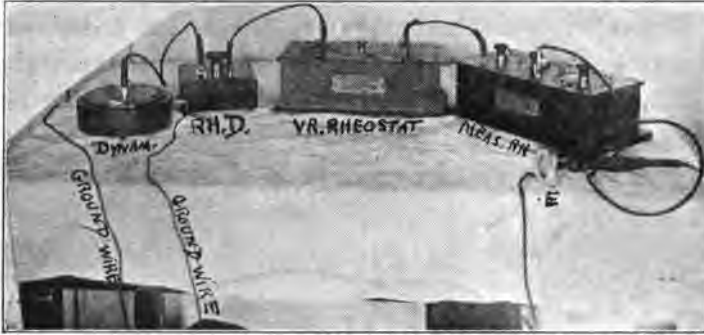


FIG.87.—Digital Sign of Abrams.

to the CD, PD, S and SP areas, yield the characteristic splanchnic areas of dullness. This holds for all diseases. In disease the dried blood yields a reaction for months. 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. The blood specimen is placed in a special contrivance (dynamizer) and its energy is conducted to the reagent as shown in Fig. 89.



ELECTRONIC REACTIONS

Fig. 88—Dynam. (Dynamizer)—Container for blood specimen. For connection to patient, insert tips of bifurcated cord, to openings on tops of plugs for ground wires and remove blood specimen from Dynam. **Ground Wires**—Better results when two separate grounds are used. **RH.D.**—Rheostatic Dynamizer for stepping up energy. Lever to SV. steps up Splanchno-vascular, Solar Plexus and Splenic reactions; to ED, Pulmodiagnostic and Enterodiagnostic reactions are stepped up. **VR. Rheostat**—For admitting energy at vibratory rate of disease. **Meas. RH.**—Measuring rheostat for determining energy, potentiality. **E**—Electrode to reagent (subject). All apparatus to be placed on a glass plate or table, may be insulated at legs by glass or rubber.



Fig. 89—Autoelectronic Reaction (using patient). Arm of patient extended from body, or better, two arms (E, then held by assistant). Bifurcated cord from Dynam. to ground plate. Patient faces geographical west on two ground plates. Use rheostats like in blood examinations. E in picture is placed for SV. reaction. Place in correct locations for other reactions.

Lever at 0 points on rheostats nullifies reactions, which reappear at vibratory rates of diseases.



Fig. 90—Localizing site of disease with blood specimen (reagent used). E is held so that its tip (border of which is covered by write rubber or insulating tape) rests on skin while its surface faces the skin. Position for E is on either side of abdomen in mammary line, midway between navel and curvature of ribs. This E comes directly from Meas. RH. A single cord with two electrodes is used for localization of lesion. One is held by reagent (for SV reaction in picture) at proper positions for eliciting the different reactions. With the other electrode, localization is executed by an assistant.

POLARITY.—Radiant energy in disease has a distinctive polarity and is detected by presenting a bar-magnet about four inches away from the area of ventral dulness, or it may be presented to the receiving, proximal electrode or dynamizer. The magnet must be held at the extreme end

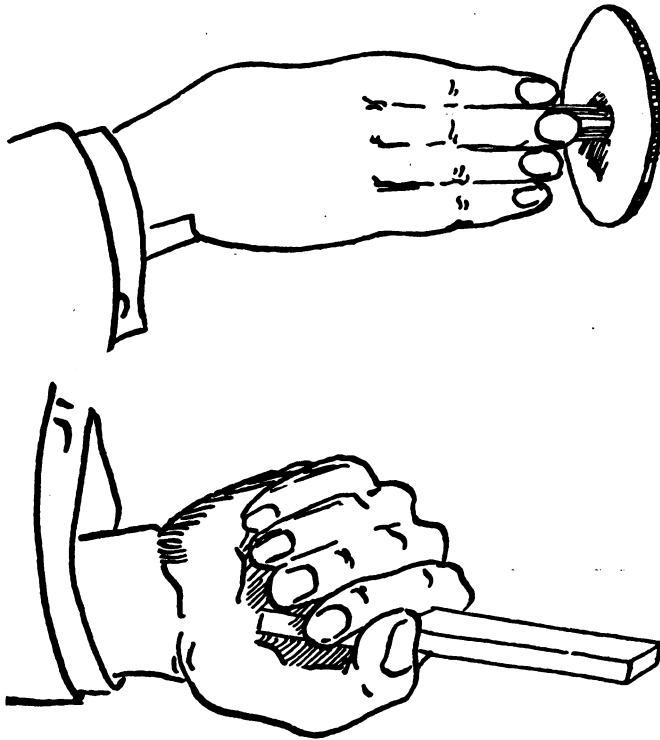


FIG. 91.—The lower figure represents the correct way of holding the magnet or electrodes. The upper figure is incorrect owing to modification of polarity from the finger tips and approximation of the latter to the metal which causes short-circuiting and interferes with conveyance of energy. The magnet should be held at the extreme tip. When held in the center, it fails to yield either positive or negative energy sufficient to determine the polarity of the ventral area of dulness. Be sure that the magnet is correctly marked which is easily determined by aid of a compass.

as shown in Fig. 91. If the dullness 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).

POLARITY OF ENERGY

Syphilis—Positive and negative.

Carcinoma—Positive.

Tuberculosis—Neutral.

Sarcoma—Positive and negative.

Strep.—Negative.

POTENTIALITY OF REACTION.—We are constrained to employ electrical terms and electrical methods of mensuration until our knowledge of pathological energy is better



FIG. 92.—Ohmmeter (biodynamometer) for determining in ohms the potentiality of energy. The resistances are as follows: $1/25$ of an ohm to 1 ohm, 1 to 10 ohms and 10 to 60 ohms. PE, is the proximal electrode (DA application) and RE represents the electrode for receiving the energy at its source. Three receiving electrodes are shown of different sizes. This set of electrodes is known as Abram's electrodes for the electronic test.

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 dullness appears.

An ohmmeter is more exact. The rheostat (Fig. 92) for this purpose is wound to carry 100 milliamperes with a voltage of 20. The scale is graduated from $1/25$ of an ohm to 1 ohm and then up to 60 ohms. To use the rheostat, place the R. E. (say over a cancer) and the other electrode at the DA. At zero of the scale, the specific dull area is present. Now interpose more resistance until the dullness disappears. If the dullness 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 18 ohms. A potentiality below 1 ohm only suggests a focus of irritation. Beyond 15 ohms, the cancer is inoperable.

The reaction in syphilis is always present and in this sense it exceeds in value the serological tests. In quiescent syphilis the potentiality rarely exceeds $2/25$ of an ohm; in active syphilis, it may exceed 40 ohms. The ingestion of drugs should be inhibited for at least two days before reactions are executed.

The splanchnic reaction is elicited even over a healed tuberculous lesion but the energy from it never exceeds a potentiality of $2/25$ of an ohm. Active lesions may show a potentiality of 20 ohms (moribund patients). 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. E. was held at a distance of seven inches from the tuberculous lesion the ohmic resistance was 6 ohms.*

Potentiality reactions in sarcoma correspond to carcinoma. A strep reaction beyond 1 ohm suggests the necessity for surgical intervention.

VIBRATORY RATE (VR).—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, 30 or 50 ohms.

Syphilis, 20 and 55 (acquired) and 57 ohms (congenital).

Tuberculosis, 42 ohms.

Sarcoma, 58 ohms.

Strep, 60 ohms.

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.

*One of the main difficulties by the conventional methods of diagnosis is in misinterpreting a healed for an active tuberculosis and accounts for the observation of Roepke that 10 *per cent.* of the inmates of sanatoria for tuberculosis are not tuberculous.

New knowledge is always viewed critically by the formalist and traditionalist and so it should be, particularly when the innovator creates discontinuity in the transition to new knowledge. Recent developments in science, however, have shown that discovery is not always cumulative in effect but there are also precipitous mutations. The theory of light and electricity as vibratory movements of the ether, was not established until the discovery of the Hertzian waves and finally led to the creation of wireless telegraphy.

The discovery of radium demolished precipitously the established theories of matter and force so that chemistry was forced to be rewritten and our conception of the constitution of matter completely changed. The transmutation theory espoused by medieval alchemy and the object of ridicule prior to the discovery of radium appears to be a reality after all. All the precautions cited must be sedulously regarded in the execution of the method. The writer concedes that it is difficult for the physician or physicist to grasp the import of the reflexes as detectors of radioactivity. Unfortunately, the physician is not a physicist nor the physicist a physician. Both are handicapped in the assimilation of these new data by the radical departure from standardized methods of investigation.

DIAGNOSTIC AREAS.—The method of execution corresponds to the elicitation of the SV areas with this modification that the proximal electrode held by the reagent is placed at the ED and PD areas (Figs. 82 and 83) over the spleen for the S reaction and in the epigastrium, 6 cm. below the ensiform cartilage in the median line for the SP reactions. The topography of these areas is shown in the following illustrations:

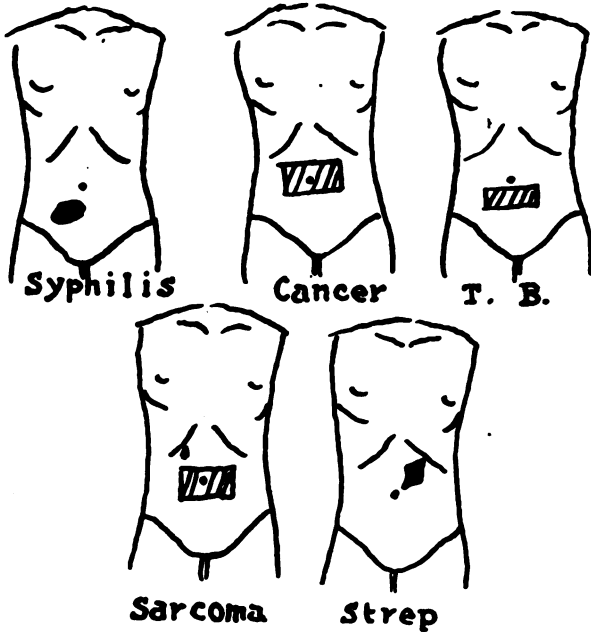


FIG. 93.—Enterodiagnostic Reactions.

(The TB reaction in illustration is incorrect: it should be a patch (same size and vertical to the right of navel).)

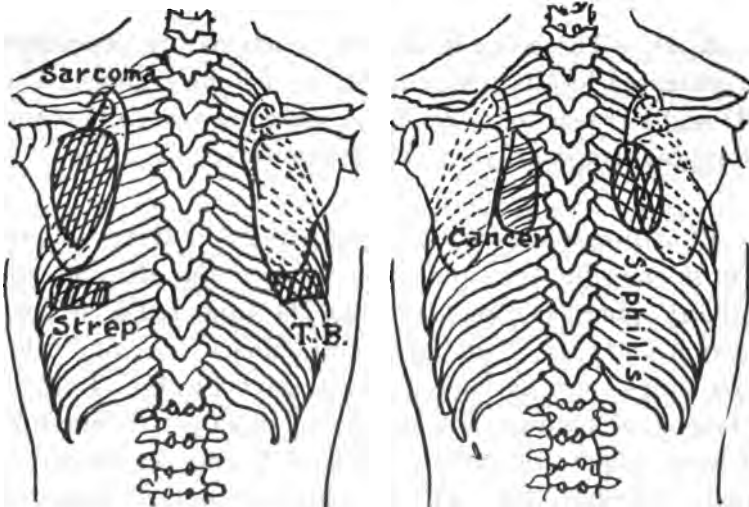


FIG. 94.—Pulmodiagnostic Reactions.

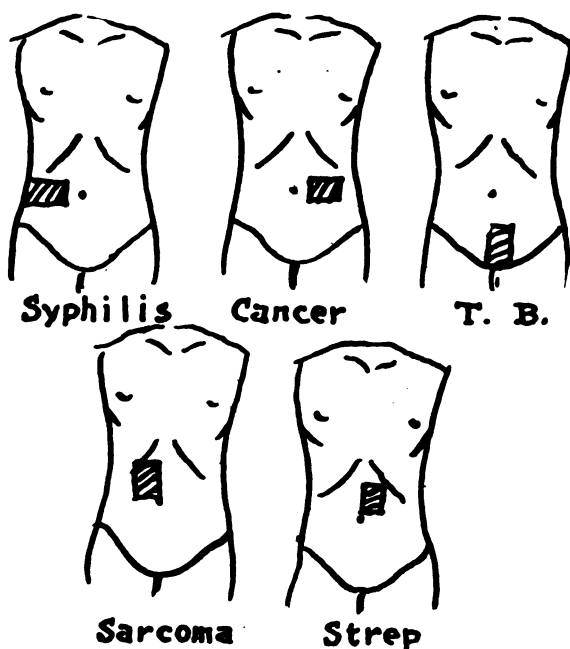


FIG. 95.—Splenic Reactions.

NOTE.—The SV, SR and SP reactions are dependent on increased localized vascularity in definite regions. The ED and PD reactions are due to muscular contraction and disappear temporarily on skin friction over the areas.

PULMO-DIAGNOSTIC (PD) REACTIONS.—It is known that if one stimulates the areas between the 4th and 5th cervical spines, one may provoke the lung reflex of contraction (S. 313). This lung contraction which implicates both lungs may be viewed Roentgenoscopically. Like in splanchno-diagnosis radioactivity in disease is a question of wave length and definite diseases having an energy of specific vibratory rates will only stimulate certain broncho-

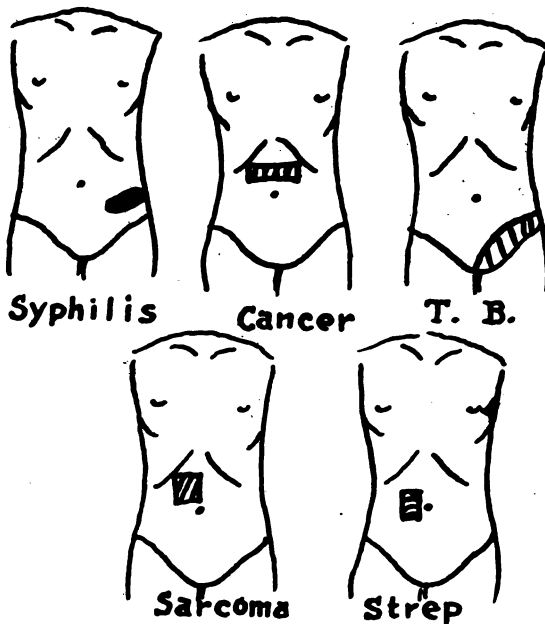


FIG. 96.—Solar Plexus Reactions.

constrictor fibers in the vagus and only definite pulmonary areas will contract. The latter are usually demonstrated by percussion although they may be shown by *careful* inspection with the fluoroscope. In the elicitation of the pulmo-diagnostic reactions, the method of execution is the same as in splanchno-diagnosis with the only difference that the energy from the patient to the subject is conveyed to the PD area (Fig. 83) on the head. The ED area on the head (Fig. 82) is used for the ED reaction area. These reactions will confirm the evidence of splanchno-diagnosis.

When percussing the PD areas, arms of reagent must be extended from his body although he may hold the

electrode on his head or better still it may be fixed by an assistant.

AUTO-ELECTRONIC REACTIONS.—By aid of these reactions one may dispense with an intermediary (subject) and employ the patient. To a certain extent the auto are more convenient than the heteroreactions yet, there are many instances, notably when the abdomen of the patient is universally dull that it is difficult to differentiate ventral areas of dullness. In such instances the pulmo-diagnostic reactions are alone available. As in heterosplanchnodiagnosis, the patient faces the west and stands on plates of aluminum.

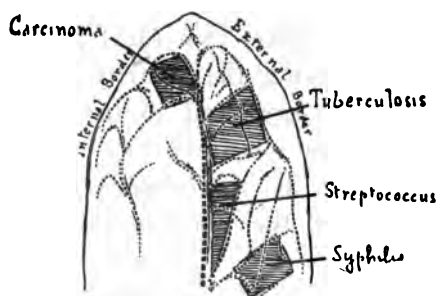
To execute the auto-electronic reactions use method suggested in Fig. 89.

When auto-electronic reactions are contemplated, attempt to secure an abdomen free from dullness by purgation and enemata and by abdominal massage and forcible inspirations to eliminate intraabdominal congestion. These reactions constrain us to study *symptomatology* from an electronic viewpoint. A symptom is invariably a reflex superinduced by the radiant energy of disease (always of a definite vibratory rate) acting upon definite cerebrospinal structures.

Just as radium confers radioactivity on other substances so may a cancerous person by induction alter the polarity and vibratory rate of another individual (184).

Take a cancer specimen, place the corked end of the bottle containing it against the leg or any part of the body of an individual and note that, after a few minutes the splanchnovascular, enterodiagnostic and pulmodiagnostic reactions in that individual may be elicited during the time the bottle is in contact with his body.

VASOMOTORIAL DIAGNOSIS.—Reference has been made (*vide antea*) to vasomotor reactions. The ear of a white rabbit is admirably adapted for this purpose. After the animal is hypnotized by stroking its back, place the animal's ear between two squares of white glass held in a support.* View the ear directed to the light (artificial light will nullify the reactions) which must not be too intense. Note the pallor or flushing invariably in definite regions of the ear (Fig. 97) when the energy of disease is conveyed respectively to the 1st dorsal spine or the area between the 3rd and 4th dorsal spines. These spines are easily counted in the rabbit. Cultures of streptococci or tubercle bacilli may substitute the energy.



Right Ear of White Rabbit

FIG. 97.—Specific areas of pallor or flushing of the ear of a white rabbit. The dotted lines represent the blood-vessels.

ELECTRONOTHERAPY.—Just a few words should be accorded to the writer's new concepts in treatment (193 *et seq.*)

*Place animal's feet toward the geographic west on a metal plate which is connected with a wire to a ground.

Electromagnetic waves have no effect on objects which are incapable of vibrating with them and as Abderhalden observes, "Bodies out of harmony with the tissues are either not absorbed or changed before absorption."

Wireless transmitters and receivers can be "tuned" to respond to electrical impulses of specific wave length alone. It is this principle of sympathetic vibration which has been applied to the control of machinery at a distance and the guidance of boats.

The writer has demonstrated by aid of the biodynamometer (Fig. 94) that all of the specific drugs have the same specific wave length as the diseases for which they are employed. This refers to syphilis, malaria, gout, and polyarthritis.

My investigations show that ideal pharmaco-dynamics in disease aims to change the polarity of the soil (I have called this *polaritherapy*) and to use radioactive drugs which show the same vibratory rate as disease (I have specified this process as *oscillatotherapy*). Both methods are embraced under the general neologism, *Electronotherapy*.

Like many others of the so-called "Regular School," I ridiculed the doctrines of homeopathy but now the writer is constrained to retract an opinion based on belief and not on fact.

The Hahnemannian doctrine of attenuation is not a myth. It can be demonstrated by the aid of the biodynamometer and the reflexes that the mechanical subdivision of drugs or their dilution will augment their radio-active potency. From what has been said, the law of similars (*similia similibus curantur*) is a verity. Pharmacodynamics is identified with what I have called homovibra-

tions and drugs of dissimilar vibrations (heterovibrations) are without remedial value.

SPECIFIC MEDICATION.—"The diseases of which we know the least pathology are the diseases which we treat successfully." Many of our most potent drugs are of empirical genesis. The electronic reactions aid us in interpreting medicamentous action.

Syphilis and malaria evoke definite ventral areas of dullness and like areas are produced by mercury and quinine. The latter drugs will dissipate the dull areas of syphilis and malaria. Pharmacodynamics is thus identified with homovibrations (homovibratotherapy). This action of drugs is exemplified by the physical analogy of resonance. Disease, like other entities, has a natural period of vibration and if we approach an object with a source of vibration of the same vibratory rate as itself, the object will be set in vibration.

This forced vibration of the object may attain such magnitude as to fracture and utterly destroy it. Investigating the action of drugs used in syphilis after this manner, I found that the splenic extracts were the most efficient and in the treatment of this disease, I use in combination with the specific drugs concussion of the 2nd lumbar spine (thrice daily) with two objects in view: forcing the spirochetes and their toxins from their "blind" habitat—the spleen and forcing from the latter into the circulation, its immunizing bodies.*

Eosin is a marvelous remedy in the treatment of *cancer*. I can employ no other word to justify this conclusion based on the observations of others and myself. By

*See Syphilotherapy in the last edition of Spondylotherapy.

virtue of its neutral rays it neutralizes the positive soil (193 *et seq.*) of cancer. In *gonorrhoea* and gonorrhoeal rheumatism, its action is equally efficient by neutralizing the positive and negative soil of the disease.

Gamboge mixed with alcohol painted on the chest in *lung tuberculosis* (without mixed infection) is practically a specific in this disease and incipient cases are symptomatically cured in several weeks. Other substances more efficient are now under investigation. Congo red is similarly used in cancer and mercurochrome (1%) in sarcoma.

In the latter citations, the pharmacal effects are secured by polaritherapy and homovibratotherapy.

The inefficiency of radium (compared with eosin) in the treatment of cancer is due to the fact that, the *alpha* or positively charged rays which possess over 95 per cent of the energy evolved from radioactive substances only serve to contribute to the growth of a carcinoma which likewise shows positive radioactivity. Owing to the action of specifics in *modifying the reaction of a disease*, say mercury in syphilis, measurements to determine the progress of the disease while the patient is undergoing treatment must be made with two rheostats. The index of one rheostat must be placed at the vibratory rate of the disease (55 acquired and 57 congenital). After this manner, the potentiality of the disease will be uninfluenced by the mercury or other preparation used.

ELECTRONOLOGICAL DATA — ELECTRONOLOGY. — Like radioactivity, this is a new primary science and bears no allegiance to cytological medicine. This drastic innovation in diagnosis, pathology and therapeutics, predicates a knowledge of the recent developments in physicochemistry and it would be puerile to assume that, its mastery can be

attained without painstaking study preceded by the conviction, however, that anything can be true however marvellous. Electronology is destined to solve problems in science and medicine in particular before regarded as insoluble. Electronic diagnosis appeals to the uninitiated like the mythical fabrications of an Homeric poem in which with a blow of the hand, the heroes destroy worlds. The simple story of its evolution can be inscribed in three chapters: 1. Discovery of the visceral reflexes; 2. Recognition of the fact that electrons and not cells are ultimate constituents of the organism and that in the incessant activity of the electrons, radioactivity or its equivalent energy is evolved, which has an invariable vibratory rate; 3. That the reflexes surpass in sensitivity any scientific contrivance for the recognition of this radioactivity.

MULTIPLICITY OF REACTIONS.—In hetero—or auto-electronic diagnosis, several reflexes may be present synchronously; thus in tuberculosis with mixed infection, the tuberculous as well as the streptococcic areas of dullness can be elicited. In heterodiagnosis, the subject must be exempt from the disease for which the reaction is sought (*Vide antea*). In the presence of cancer and sarcoma, the tuberculous reaction cannot be elicited unless two rheostats are used and both placed at the VR (42) of tuberculosis.

SPHYGMOMANOMETRIC INDEX.—Using a sphygmomanometer (with an aneroid barometer) and conveying the energy to the heart* of a subject, note that, at the vibratory rates of syphilis (55 acquired and 57 congenital), tuberculosis (42) and cancer (30 or 50) etc., there will be a slight and transitory inhibition of the oscillations of the needle followed by an infinitesimal deflection of the

*Second right intercostal space close to sternum.

needle toward a higher point on the scale (85). Execute these observations when the needle shows its maximum oscillations and remember that the heart will soon exhaust itself when used for these test purposes.

IMMUNODIAGNOSIS.—The electronic reactions enable one to say whether the individual possesses a natural or acquired immunity to certain diseases. Thus typhoid bacilli (culture) yield a definite area of ventral dullness. The blood of all patients who have had typhoid fever will dissipate this dullness. This is not so with many persons who have not contracted the disease. Many other diseases are similarly amenable to immunodiagnosis. Immunodiagnosis thus established in cancer will dissipate the obsession of many persons.

ELECTROSTATIC ELICITATION OF THE ELECTRONIC REACTIONS.—With a supersensitive electroscope, it can be shown that the dull areas of the reactions show static charges and with a galvanometer, potential differences from the adjacent skin areas.

With a hollow glass rod sealed at the ends or often a very small solid glass rod, the areas can be defined as shown by a stickiness of the rod to the skin (followed by pallor) when the border of the dull area is reached.

1. The skin of reagent must be dry.
2. The person manipulating the rod must be grounded.
3. The reagent must face the geographical west.
4. The movements of the rod must be continuous with firm and even pressure on the skin and manipulated on the skin in different directions.

If the skin is moist, use a hard rubber rod which although less sensitive is more adapted for the purpose under such conditions.

To be sure that skin moisture does not cause stickiness, short circuit the skin by aid of two fingers placed on either side of the median link of trunk (when feet are on ground plates). When the latter maneuver is executed, the stickiness is dissipated. It is also dissipated when reagent turns to the magnetic meridian.

The rod is a simple substitute for those who are not adepts in percussion. It takes about 15 seconds for a reaction.

With the rod one may also accurately define the borders of viscera.

CATECHISM OF THE ELECTRONIC
METHODS OF DR. ALBERT ADAMS

CATECHISM OF THE ELECTRONIC
METHODS OF DR. ALBERT ABRAMS

IS MEDICINE A SCIENCE? No. Man is governed by mathematical law and anything concerning him incapable of numerical expression must be limited to speculation. Thus medical counsel is not expressed by facts but by opinions. It is only when one can time, weigh and measure knowledge that facts in place of theories can be expressed.

WHAT HAS RETARDED MEDICAL PROGRESS? Ignoring the laws of physical science in investigating disease. Man is only a machine and art is a crude imitator of nature. The real advance in modern medicine began with the investigation of cells (cell theory) about 60 years ago and the physician studied diseases in accordance with the changes of the cells as shown by the microscope. This makes PATHOLOGY (science of diseases) the basis of medicine and is illustrated by the story told of a celebrated physician who, when requested by a patient to tell him what was the matter with him confessed he did not know but that the nature of his disease would be revealed at the autopsy. It would be absurd were the mechanic seeking for a defect in machinery to first dismember (dissect) it before ascertaining how it functionates.

WHY DOES THE PHYSICIAN FAIL TO RECOGNIZE DISEASE IN ITS INCIPIENCY? Owing to the arbitrary domination of the cell theory, he awaits cellular alterations which are EFFECTS. Disease in its incipency is only a physiological

disturbance. Just as the barometer portends a storm so may these cellular alterations be anticipated and checked. The phenomena of disease are not inert but dynamic. Thus the actions of the body should be regarded as processes and not as structures and, if the microscope is utilized as a criterion of disease when cell changes have ensued, the patient is eligible for the morgue and not the hospital.

IS THE CELL THEORY CORRECT? No. This theory is obsolete because ELECTRONS and not cells are the ultimate units of the body.

WHAT ARE ELECTRONS? Charges of electricity and the basis of the material universe, including man. Electrons have invariably uniform vibrations and it is only in the rate of vibrations that we can distinguish one object from another object. An Electron is the smallest thing known to science: a thousand times smaller in mass than the smallest atom. During the revolutions of Electrons, thousands of billions of times per second, their vibrations (RADIATIONS) escape. Many are perceived as light, heat, electricity, etc., but most of them are unrecognized because they have thus far eluded all scientific instruments.

Heretofore, the atom in inorganic, and the cell in organic matter, were regarded as the basic constituents and unresolvable into anything more minute. Forty years ago Thompson showed that the Electron was the fundamental unit of matter. It would take two and one-half million people twenty thousand years to count the number of Electrons passing through an ordinary electric filament in one second. The Electron theory of matter is the prevailing one and Abrams was the first to apply it in the study of disease.

HOW DID ABRAMS SUCCEED IN DETECTING THE HITHER-TO UNRECOGNIZED RADIATION? By employing human reflexes. A reflex is an involuntary response to a stimulus. A ray of light (the stimulus) will contract the pupil of the eye. Such contraction is a reflex. The chemist employs the pupil reflex when he wishes a delicate test for certain poisons. A frog's muscle is used for recording wireless messages. The sense of smell surpasses in sensitivity the most delicate scientific instruments. The retina of the eye is 3,000 times as sensitive as the most rapid photographic plate. The animal machine is equipped as receivers for all kinds of vibrations and is like the receiving station of a wireless apparatus.

WHAT IS THE ABRAMS BLOOD TEST? The very earliest recognition of disease, its location and its severity by an examination of a few drops of dried blood on a clean white blotter without color or printing material. The early recognition of disease, say cancer, does not necessarily signify that it will progress. On the contrary, it may remain inactive for years—thanks to the defensive mechanism of the animal machine. Disease, like every other natural phenomenon is only a matter of vibrations and vibrations are as material as the substances analyzed by the chemist. Each disease has its specific vibration and, by aid of apparatus attuned to these vibrations, they are conducted to the body where they are recognized as definite reflexes. The method is practically an analysis of radiations or vibrations (RADIO-ANALYSIS). It is not unlike the use of the spectroscope employed in chemical analysis. The spectroscope breaks up light (radiant energy) into the colors of the rainbow which are only different rates of vibration. We use radio-analysis every time we see objects. The optic nerves of the eyes with their 300,000 to 500,000 perfectly insulated wires

which we call nerve, fibres are so attuned to respond to different rates of vibration. Thus, 462,000,000,000 vibrations a second produce a sensation of light and, as the vibrations gradually increase, the eye perceives one color after another until violet is reached with its 733,000,000,000 vibrations to a second.

WHY CAN A DROP OF BLOOD REVEAL CONDITIONS OFTEN UNPERCEIVED BY AN EXAMINATION OF THE BODY? The blood drop 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 by the ERA (electronic reactions of Abrams).

WHAT IS ABRAMS' CONCEPTION OF DISEASE? Disease is only a reaction or symptom. Symptoms represent a mechanism of defense called into action to oppose something foreign to the body. The intrusion into a shell of a foreign body resulting in a pearl is a like mechanism. The alluring germ theory vaunted as a final solution in the

interpretation of disease is a chimera. Germs are everywhere but they need a favorable soil for their growth. They are only scavengers and, if our bodies were not "garbage cans," they would find no soil for their sustenance. They are like vultures feeding only on dead or putrefying flesh.

A child had a little tree which grew as he grew. Soon the tree grew sick and its leaves withered. The child lamented. One day the tree leaned toward the child and said: "The trouble lies in my roots. Remove that and my leaves will become green again without any other remedy." So the child dug at the roots of the tree and found a nest of mice there.

The fool who sees the suffering of humanity seeks to relieve it by removing the outward symptoms of misery from the eyes of the superficial observer and will ignore the cause.

WHAT IS THE MORBID SOIL? SYPHILIS. We may question the world's civilization but its syphilization is incapable of refutation. NO SYPHILIS, NO DISEASE. We are all syphilitics in various degrees of dilution from vaccination (although this is necessary if its syphilitic constituent is eliminated) and from tainted and not sainted ancestors. Our present degeneration is from the past generation.

Cancer, tuberculosis and other diseases can only thrive on a syphilitic soil. If we wish to eradicate disease, we must commence with the soil, which is of no less importance to the physician than it is to the agriculturist.

CANCER is steadily on the increase. During the year 1915, the cancer mortality in the United States (continental) was over 80,000 and it has been suggested that cancer in time may exterminate the entire human race.

The ERA show cancer in its incipency even before a tumor (the usual sign of identification) is present. A mere thickening of the skin or mucous membrane is, with the ERA, a sufficient sign of its presence.

The world is governed by names and the portentous name SYPHILIS will never be deprived of its malignancy until it is accepted with the same faith as the "original sin," substituting, however, moral transgressions for the innocuous fruit.

Surgeons concede, what little else is known of Cancer, that it is caused by CHRONIC IRRITATION. Now, it has been found by the ERA that every abdominal operation is followed by a cancer. In an operation, the delicate structures are bruised, torn and otherwise mutilated and then adhesions do the rest. Several prominent surgeons desyphilize patients before an operation with excellent results.

Unfortunately, syphilis, in the lay mind, suggests immorality. Practically only 25% of the cases are thus associated; the remaining percentage is from inoculations, heredity and accidental infections (Innocent Syphilis). Unfortunately the dubious Wassermann test for the disease has been accepted as an evidence of its existence. Says Nicolas, a distinguished French physician: "The Wassermann is present in the absence of syphilis and absent in the presence of the disease. It is a DANGEROUS test, because we treat those who are not syphilitic and fail to treat those who are."

WILL THE PROBLEM OF DISEASE BE SOLVED? Abrams contends (based on his blood tests) that this is not improbable. That, if a child is desyphilized at an early age before the germs of the disease are fixed in the tissues, the sterilized soil would prove unpropitious to disease. An

organization, "International Association for Racial Purification," has been formed with this object in view.

WHAT IS THE OSCILLOCLAST OF ABRAMS? An apparatus for treating disease by definite rates of vibration. Electric waves have no effect on objects which do not vibrate in resonance with them. This action corresponds to tone vibrations which set other bodies in motion. If we strike the A string of a violin, the A string of a piano standing near sounds in harmony with it.

HOW CAN VIBRATIONS DESTROY DISEASE? Every object has a natural period of vibration. If one approaches an object with a source of vibration of the same vibratory rate as itself, the object will be set in vibration. This forced vibration of the object may attain such magnitude as to fracture and utterly destroy it. Caruso could take a wine glass and determine its tone (vibratory rate) by tapping it. Then by singing that tone in the glass would shatter it. This is exactly what happens when you impose on a disease its own vibratory rate by the oscilloclast. The radiations from the latter, unlike radium and the X-rays, are absolutely harmless. Patients accustomed to sensation cannot understand why they do not feel the vibrations. It is because true remedial action is qualitative and not quantitative. You do not feel light, yet, by its mechanic action it may agitate bodies so forcibly that they fall to pieces.

HOW CAN THE EFFECT OF THE OSCILLOCLAST BE DETERMINED? By accurate measurements of the radiations of disease. As the disease recedes in virulence, what is known as ohmage (measure of resistance) becomes diminished and finally there are no morbid radiations to measure. Nothing, however, gets quite well. While you may deprive a cancer of its malignancy, some damage has

ensued during its growth and some minor suffering is better than death.

ARE DRUGS EMPLOYED EXTERNALLY BY ABRAMS' METHODS? Yes. All drugs are radioactive and some are more powerful than radium itself without the dangers of the latter. Drugs are used which have the same vibratory rate as the disease and, acting like the oscilloclast, they fortify the action of the latter. These drugs are usually painted over the morbid areas.

THE ELECTRONIC REACTIONS OF ABRAMS

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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 govern-

ing 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 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 sub-

sequently 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 unifying 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 Thompson, 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 sensitiveness 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 radio-analysis 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, colisepsis, streptococcaemia, etc., etc., but can determine them in their very incipiency, 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 virulency 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 virulency of carcinomata and sarcomata—providing the virulency 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 virulency 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 virulency 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 colisepsis, 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 streptococcal 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 radio-activity 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 TEST

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 a glass rod or rubber wand, properly charged with static electricity by brisk rubbing with silk or wool,

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 entire 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 radia-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 patients, 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 analyzation 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 $1\frac{1}{4}$ 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 $1\frac{1}{2}$ 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 manœuvre 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 de-

pressor 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 Wasserman reaction can be obtained in non-syphilitic cases of pneumonia, typhus fever, malaria, and other infections, 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."

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