

The Russell Genero-Radiative Concept

or

The Cyclic Theory of
Continuous Motion.

By

WALTER RUSSELL



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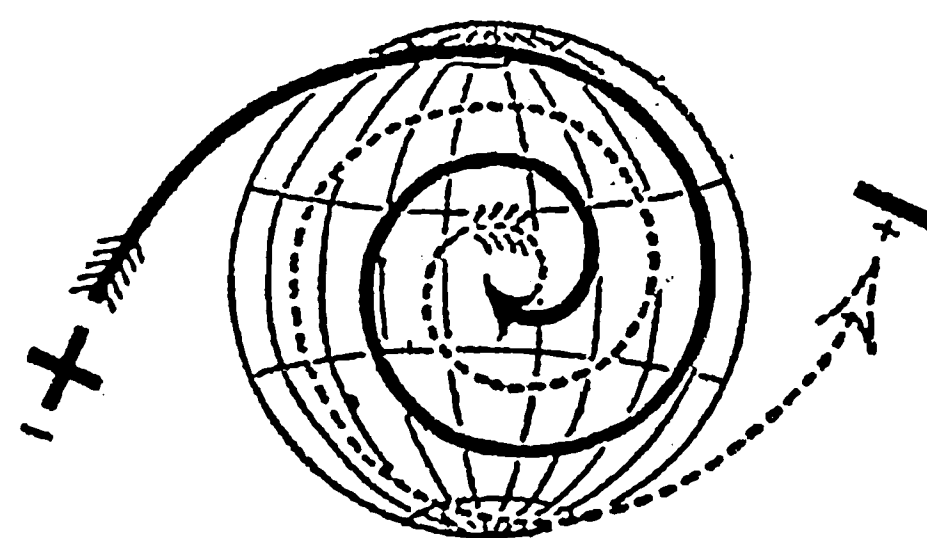
or

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Continuous Motion

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WALTER RUSSELL

To Caleb R. Brinton



Very truly yours

Walter Russell

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TO FRITZ BRIEGER

My first believer, who encouraged when others discouraged, who upheld when others ridiculed, whose vision and conviction prompted him to devote his time and means toward bringing this radically new system of motion into a position where it is receiving the respectful consideration of thinking people, and to whom the world will owe much when science and industry will have learned to apply the new laws and principles set down in THE UNIVERSAL ONE, this thesis is affectionately dedicated.

AUTHOR'S NOTE

THE UNIVERSAL ONE, of which this thesis is an expanded extract dealing with one phase of force and motion, and a brief generalization of the other phases, will not be republished in its present form. It was privately printed and widely distributed to scientists and prominent thinkers in philosophical and ecclesiastical fields.

One very fair criticism from scientists in general, was that its science, its metaphysics and its philosophy were not segregated under their respective headings.

For this reason the author will segregate his affiliated subjects and reprint them in separate books, conforming to the proper demands of each.

The following titles indicate the nature of the fifteen books to follow, all of which when completed will fully cover the principles laid down in THE UNIVERSAL ONE.

1. THE PHYSICAL EVIDENCE OF AN INVISIBLE UNIVERSE.
2. SPECTROSCOPIC EVIDENCE OF AN UNSEEN UNIVERSE.
3. THE RELATIONSHIP OF MIND AND MATTER.
4. LIGHT.
5. THE WAVE AS THE BASIS OF ALL MOTION. WAVE MECHANICS.
6. RUSSELL CHART OF THE ELEMENTS, WITH TREATISE ON HYDROGEN, CARBON, SILICON AND COBALT.
7. STRUCTURE OF ALL SYSTEMS, ATOMIC, SOLAR AND STELLAR.
8. THE METALS OF THE FUTURE. SILICON STEEL AND CARBON METAL.
9. CONCERNING TRANSMUTATION.
10. CRYSTALLIZATION. ITS ORDERLY PERIODICITY.
11. THE MYSTERY OF THE COMETS. WHAT THEY ARE, WHERE THEY CAME FROM, AND WHERE THEY GO.
12. FALLACY OF THE MOON TIDAL THEORY.
13. THE PURPOSE OF FIRE AND WATER IN EVOLUTION AND DEVOLUTION.
14. TIME. ITS RELATION TO MATTER, FORCE AND MOTION.
15. POLARITY. ITS ORDERLY PERIODICITY AS A MEASURE OF POTENTIAL.

PREFACE

THE purpose of this thesis is to demonstrate that the planets and satellites of a system would not fall into their primaries if their motion were stayed by some giant hand.

The experiment which illustrates this text was performed for the purpose of proving that "initial impetus" has no relation whatever to orbital revolution.

It also proves that the mathematical laws for falling bodies are as applicable to the orbit of a body which is floating in a pressure gradient appropriate to its potential as they are to a body which is falling just fast enough to keep it in the same relative distance from its primary.

The experiment is also intended to demonstrate that the mythical "initial impulse" which every mass in every kind of a system supposedly acquired from some unknown and unexplained source is in fact obtained from its primary and corresponds exactly to the loops of force which form in ever-widening striations of ever-decelerating speed (as their distance from their center increases) around a wire through which a current is passing, or to the striations of ionizing gases in a partially evacuated tube through which a high frequency current is passing, or to such spiral nebulae as the Canes Venatici, Ursa Major, Perseus and Andromeda whirlpools through which a spatial cosmic current is passing.

This thesis and experiment are also intended to prove that the commonly accepted

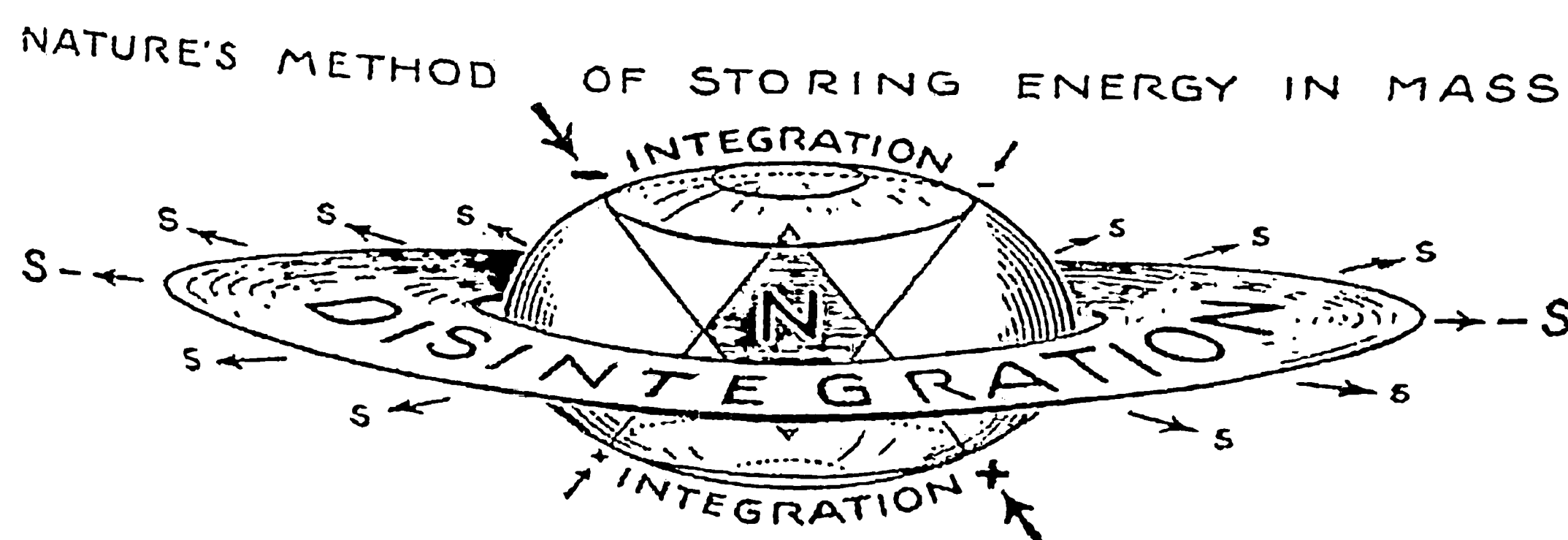
law that like charges repel and opposite charges attract is an inconsistent and flagrant error.

I contend that electricity and gravitation are one, also that magnetism and radiation are one, and that both of these forces make up the two opposing forces evident in every effect of motion. I also contend that these two opposing forces are unity, or one, expressing themselves as opposing separate forces only as they travel in opposite directions, the centripetal direction of a closing spiral, in which all attributes are endothermic, and the centrifugal direction of an opening spiral, in which all attributes are exothermic.

I also contend that the electric force attracts, or contracts, or compresses, or condenses, or generates energy into solids of visible matter, while the magnetic force repels, or expands, or disintegrates, or rarifies, or degenerates energy into tenuous, invisible matter.

This belief of unity of force, expressed in a continuous cycle of integration following disintegration, of generation succeeding degeneration, of the visible lifting itself out of the invisible in forever repetitive cyclic intervals was published in 1926 in my book, *The Universal One*.

This thesis has been written to take up these points with additional observations based upon experiment.



The Solar Gravitational Experiment

A SET of given relative conditions affecting the application of the forces of nature are not changed by changing the size of the objects which demonstrate those conditions so long as they remain relative.

An atom and a solar system are governed by the same laws.

There is no separate law for big mass which differs from the laws governing small mass.

Until 1926 when *The Universal One* was published no one had protested the theory that the laws governing solar systems were different from those governing atoms.

Science claimed that one was an electrical effect and the other a gravitational effect.

Recently, however, Einstein has mathematically upheld the theory of the unity of gravitation and electricity.

For further demonstration I have made the following experiment: A miniature solar system was set up so that in every respect it conformed to the known conditions which govern the planets' motions in respect to their nucleus.

A large and powerful permanent bar magnet was hung on a wire, with a little crank handle at the top.

Other smaller ones of assorted sizes were hung on very long threads. The threads were long because the different speeds of their turning would otherwise soon twist them up. The small ones were hung on concentric key rings.

The bar magnets were placed in positions relative to the positions of the planets in respect to the sun.

As the planets' magnetic poles are approximately in a line with the sun's equator, so all bar magnets were placed in this

relationship. All south poles were uppermost.

The result is as indicated by Figure 1.

Each bar magnet immediately found a comfortable position in space where it hung practically motionless, but "champing at the bit" like an impatient horse.

The heaviest and most dense ones hung near the "sun" and the less dense ones, and less powerfully polarized even though larger, found positions far away.

Little needles found positions near larger bars, as moons find positions near planets.

Invisible eddies caused a restlessness which proved that some force was at work within the group demanding that something happen to make them contented.

There was one condition which was certain. None of them expressed the slightest desire to fall into the other. They were all actively polarized as all mass in nature is more or less polarized.

As long as the respective poles remained in this relation the separate masses found potential positions proper to their own potentials and remained there. Each one pushed the others away from it and pulled them toward it as it oscillated impatiently back and forth out of true position.

I have always contended that there is one gravitative point where every freely moving body in space has no weight nor has it any pushing power or pulling power in respect to any other mass.

No mass in the universe can keep such a position when it finds it for the impetus of its motion in getting there always carries it past that point.

Also the point referred to is moving in unison with all other similar equilibrium points.

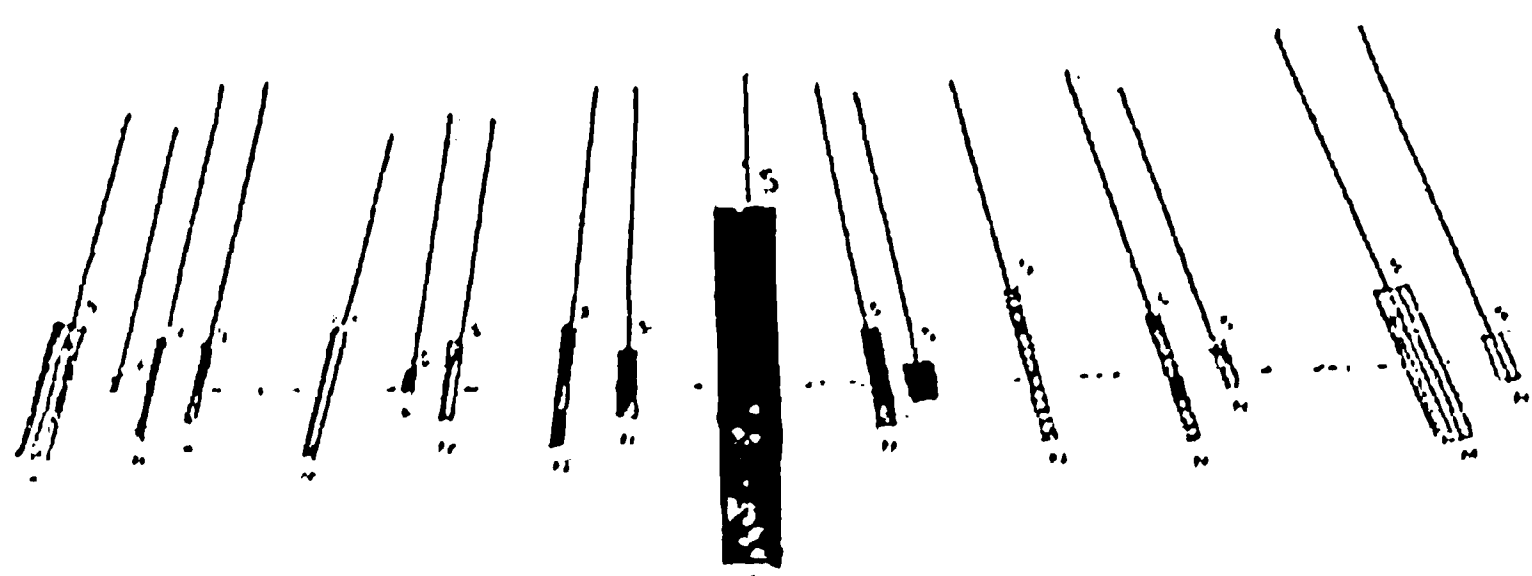


FIGURE 1

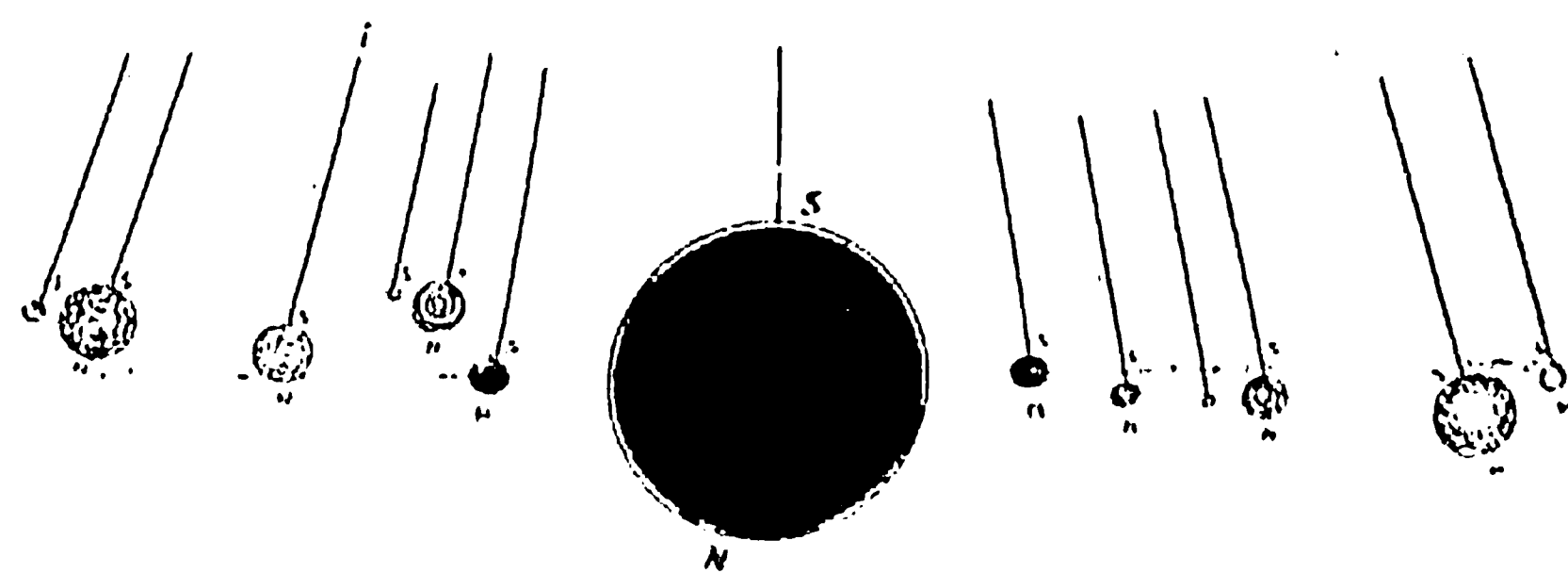


FIGURE 2

An additional reason for this constant motion is the fact that every mass is constantly changing its potential and is, therefore, always moving in the continuous effort to find a true potential position in space where it can be "comfortable."

By "comfortable," I mean a position where the pushing and pulling of the various masses are equal.

If the moon or any planet could be pushed out of its position it would then have weight in respect to its primary, but not otherwise.

To return to the experiment, when we turned the central bar, all the smaller ones followed the turning just as the planets turn around the sun.

Just as Mercury, the very dense, hard planet near the sun, turns fast, so will the heavy, dense small bar turn fast around it.

Just as the low potential, huge bulk of Jupiter revolves slowly so does the far distant large needle revolve slowly.

If these bar magnets were delicately hung so that there were no resistance to the turning, each bar would also revolve on its axis.

If any one was turned by its thread any little one near it revolved around it exactly as our moon revolves around the earth.

The constant change of position of these high pressure gravitative points which control the accumulation of mass around them, gives the appearance of mutual attraction and repulsion, but this effect is just an illusion of motion, for all freely moving bodies in space are in equilibrium vortex centers in respect to every other mass in the universe, and, therefore, are weightless in respect to them.

This experiment was repeated on a larger scale with spheres.

A large solenoid was wound in the shape of a sphere to represent the sun and surrounded by spherical substances of varying densities perforated by permanent magnets of varying strengths.

To more exactly represent the conditions of the solar system, the sun was tipped a little away from vertical, and the planets hung so that their entire lengths were just below the plane of the sun's equator, except the nearest and most dense one.

It was then found that all of the rotating poles inclined as they do in the solar system.

This experiment should convince one that bodies moving freely in space have no weight whatsoever in respect to each other.

It should also convince one that the so-called "initial impetus" is derived purely from the interchange of potential which is constantly taking place in all mass.

This interchange takes place in two orderly streams, each flowing in opposite directions, one inward and the other outward.

It proves also that all masses are doubly charged, there being merely a preponderance of one charge or the other.

We will later show that the locations of the so-called magnetic poles of all masses determine their positive or negative preponderance.

The poles of all masses of negative preponderance are the reverse of the poles of positive preponderance.

Let us now take up in greater detail the principles which govern this effect of rotation and revolution of masses in equilibrium positions within a system.

The New Creed of New Thinking

I BELIEVE that the basic cause of motion is extremely simple, and easy to understand.

I believe that the effects of motion are infinitely complex and extremely difficult to comprehend.

I believe that anyone who thoroughly understands cause can also understand the complex effects of cause.

I believe that the whole of this universe of so-called matter is being put together into relative solids and torn apart into liquids and gases by One Force divided in its pulsations so that it appears to be two opposing forces. These apparently two forces move in opposite directions against a resistance set up by each against the other, thus creating a minus equilibrium and a plus equilibrium which we know of as solids and as space surrounding solids.

I believe that solids are assembled out of space by one oscillation of the force which pulls inward from within, and that space consumes the solids by the other oscillation which pushes outward from within.

I believe that the reciprocation of these two opposing and repetitive effects constitutes a cycle of appearance and disappearance which we call "Creation."

I believe that each of these forces resists the action of the other and in so doing gives to the two opposing sex forces the repetitive effect which makes this universe of motion a continuous cycle.

I believe that the combined triad effect of the two opposing oscillations and resistance is registered in waves of varying dimensions which are the basis of all motion.

I believe that the opposed workings of the two forces creates a polarized or unstable condition and that thing which we call energy is the effort exerted by each force to regain the stability of equilibrium through depolarization.

I believe, therefore, that all motion is the result of setting up an endless series of high and low pressure conditions which are ever interchanging in their constant and useless attempts to equalize.

This can never be accomplished so long as the One Force is a living, pulsing force.

* * * * *

It is very evident that the so-called solids of matter are condensed, or contracted, from larger volume into small volume by a force which pulls inward from within. This force is exerted against a resistant force which pushes outward from within.

That force which we call the attraction of gravitation corresponds to this force for it gathers large volume of little weight into small volume of great weight.

Electricity corresponds in every respect to this condensing force for it tends to shorten a line in the direction of its length.

Electricity also accumulates low potential into high potential by generating high amperage of low voltage pressure into low amperage of high voltage pressure. This step-up transformation process in electrical practice exactly corresponds to the accumulation of energy in solids by generation.

The generation of energy from large area into small area is a condensing, contracting, compressing effect which exactly corresponds to all electrical and all gravitational effects.

Planets, suns and solar systems, electrons, protons and atomic systems are the familiar results of this force which gathers energy into smaller volumes of dense masses.

Can we not reasonably and logically conclude that energy so compressed into closer integration is a plus of energy as compared with its environment from which it was condensed?

If it is a plus force and if it was generated gravitatively by electric contraction, can we not reasonably classify it as a charging force?

And can we not just as logically complete the analogy and identify this generating, electro-gravitational force which develops an ever-increasing pressure gradient in the direction of a common center, as an electro-positive force?

If the above conclusions from familiar, observed effects are logical, are we not now in a position to state that the one and only possible direction for any of these electro-gravitational effects is the direction of mutual attraction, which is toward a common center?

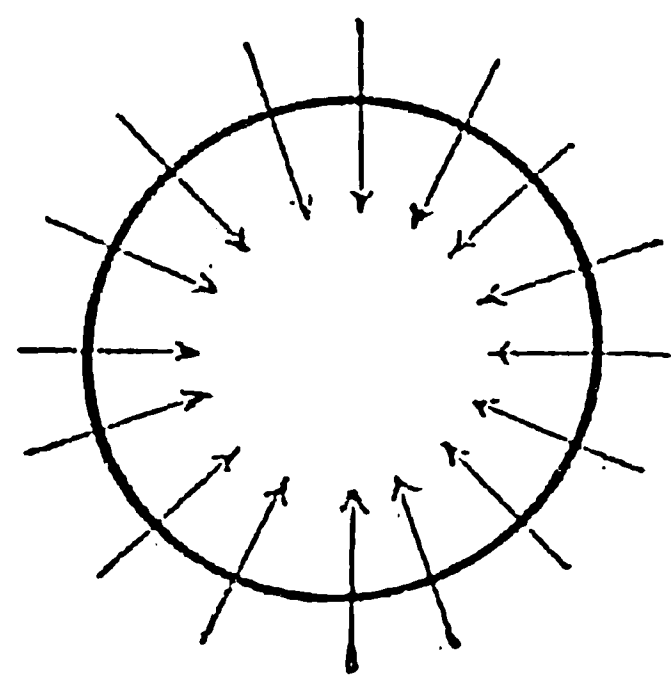


FIGURE 3

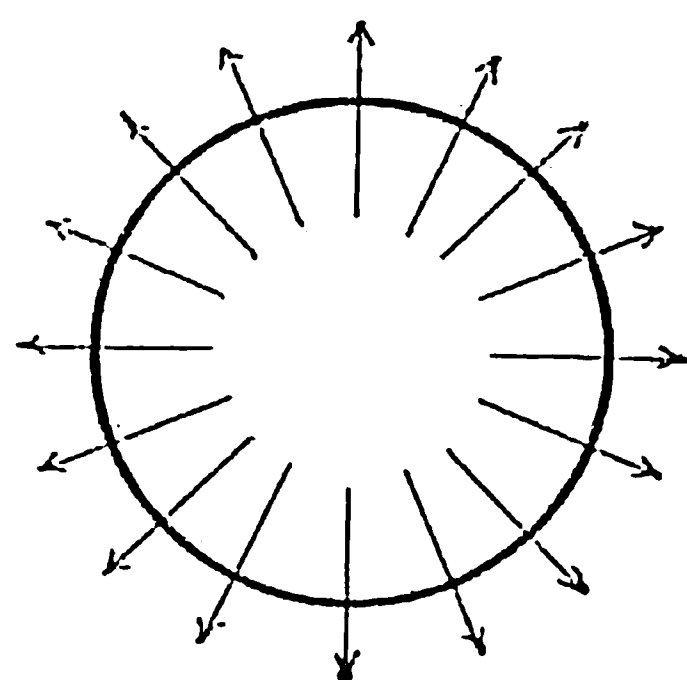


FIGURE 4

Observe that the arrows in Figure 3 all converge toward one common point toward which they are heading and at which they meet.

We have considered the assembling force which steps up energy from the invisible universe by Nature's spirally-wound transformer which contracts its windings on a centripetal journey to high pressure centers, so we can see and feel it as a visible universe of solids.

Now let us consider the reverse process by means of which Nature's step down transformer releases that accumulated energy through the spiral windings which ever expand on the outward centrifugal journey from visibility and density to invisibility and tenuity.

There can be no argument against the plainly evident fact that visible or condensed solids of matter disappear into invisible vapors, gases or ethers by a repellant or expansive force which pushes outward from within against a resistant force which pulls inward from within.

That repellant force which we call radiation corresponds to this force, for it disintegrates solid, integrated matter which has been compressed into small volume, into large volume.

The magnetic field of a generated force exactly corresponds in every respect to this expanding, tearing down attempt of Nature to disassemble her assembled solids.

What is a magnetic field? Is it not plain to see that it is the degeneration of a generated force which ever weakens as its distance from its source increases?

If the electric oscillation of an electromagnetic wave is the generative oscillation which increases in force toward its core, does it not follow that the magnetic oscillation must necessarily be the degenerative oscillation which repels?

If this is so, then is it proper to name the field which surrounds a generating current, a magnetic field? Is it not as properly an electro-magnetic field as a wave is an electro-magnetic wave because it exerts force in two directions?

And is not the electric oscillation of that field the one which pumps force with ever increasing acceleration toward the plus of high pressure and, conversely, is not the magnetic oscillation the one which pumps force with ever increasing deceleration in the opposite direction toward the minus of low pressure?

And does not the ratio of deceleration and acceleration of these opposite effects exactly correspond to the acceleration and deceleration ratios of all gravitational and radiational effects?

Magnetism, then, instead of being the attractive force which its name implies, is that decelerative, repellant force which tends not only to lengthen a line in the direction of its length, but to expand and retard that line in every outward direction.

If this is so, it necessarily follows that it is the opposite of the inductive force which hastens this time dimension of force by covering equal distances in less time.

Magnetism dissipates high potential into low potential by degenerating high voltage pressure of low amperage into low voltage pressure of high amperage. This step down transformation process in electric practice exactly corresponds to the release of energy in mass by radiation.

This degeneration of energy from small area into large area is a rarifying, evaporating, dissolving, expanding effect which exactly corresponds to all magnetic and all radiational effects.

Invisibility, vapors, gases, and the pressure gradient of space are the familiar results of this repellant force which always occupies the outside insulating position of non-solidity which surrounds solid masses as a protective environment of ever-lowering conductivity.

Can we not reasonably and logically conclude that energy so rarified by the ex-

pansion of radiation is a minus force as compared with the condensed mass which it surrounds?

And can we not just as logically complete the analogy and identify this degenerating magneto-radiational discharging force which evidences an ever weakening pressure gradient as an electro-negative (or, more properly, a magneto-negative) force?

If the above conclusions from familiar observed effects are logical, are we not now in a position to state that the one and only possible direction for any of these magneto-radiational effects is the direction of mutual repulsion, which is outward from a common center, as shown in Figure 4?

It is an experimentally proved and admitted fact that any electric current exerts itself in two directions.

It is admitted that an electric current does not flow until polarization begins or that polarization begins when an electric current begins.

Also that the strength of the current increases simultaneously with an increase in the "charge" or "moment" or "strength" of the poles.

It is also equally admitted that any potential either greater or less than the potential which it displaces seeks opposite directions. It is known that one of these directions results in charging both potentials and the other direction discharges both.

In the face of this evidence in observed effects, it is reasonable to state that there is a genero-active, positive force which acts simultaneously with the recognized negative, radio-active force.

If the positive force is a charging force and the negative force a discharging force, is it proper to refer to negative charge in a mass when there can be no such thing as "negative charge." We must properly define this force as "negative discharge."

This brings us to an effect which is one of the most obvious of Nature's effects but which is stoutly denied by the modern physicist, that every mass in Nature is doubly charged.

We know that all organic life is both male and female, each individual or cell being just preponderantly male or female.

We know that all generating bodies or currents are simultaneously radiating.

We know that all heating bodies are cooling through radiation, and that all cooling bodies are heating through contraction.

We see everywhere in Nature, especially on our planet, the generative effect of charging, and the simultaneous degenerating effect of discharging, yet the modern physicist insists, although he finds no precedent in nature, that an entire body is either negatively or positively "charged."

He defines a negatively "charged" body as one which has added some electrons, and a positively "charged" body as one which has lost some electrons.

Nature's electrical practice is obviously different from this supposed state of facts. The theory is, probably, inherited with the old theory that the universe is running down gradually and not winding itself up simultaneously to balance its degeneration.

Does it not seem more rational to suppose that the formation of every mass in nature is the result of a pressure gradient developed by the solenoid principle which first steps energy up to ever-increasing pressure; and that the destruction of that mass is caused by a preponderance of the discharging force which then steps it down to an equilibrium?

The sun is contracting. That means that it is not mature, not having yet reached the equilibrium limit of its wave impulse.

We know this to be true for it has not yet become a sphere, nor has its magnetic pole coincided with its pole of rotation, as it will when this solar system has reached the amplitude position of its wave.

It is still winding more tightly the spiral turns of its step up transformer principle, which increases the number of its turns and, as a consequence, narrows up the spaces between them exactly as a clock spring would tighten as it winds up.

This is the genero-active principle of nature which we recognize in our mechanical equivalent as a solenoid.

We know that an electric current centripetally passed through a spirally coiled wire to a central point, transforms a given quantum of potential energy which is dis-

tributed over a large area under low pressure, into a spiral pressure gradient culminating in exceedingly high pressure at its core.

We know also that a flux of lines of force radiate in an outward direction from a common center.

We know also that the voltage pressure of the "field" of pressure which surrounds the solenoid, gradually lowers until it reaches an equilibrium, then reverses its direction and returns to the opposite pole from which it was ejected.

We know also that if another solenoid coil or a hundred of them were placed near by, the radiated energy from each would interchange with more or less difficulty according to the conductivity of the insulating medium with which every solid surrounds itself. Pressure or density of this atmospheric insulator determines its conductivity and inductivity, which are two directions of the same thing.

Proximity determines the strength of the fields between solids, and density determines proximity.

Let us then consider the sun as a huge solenoid which steps up its energy to high pressure toward its core and steps it down to low pressure out in space.

In the first instance, the energy of increasing pressure is generated, and in the second instance, it is radiated.

When radiated energy leaves any charging body, whether it be a sun, planet, bar of steel, solenoid or storage battery, it is a discharge in respect to the body from which it has been ejected.

When that radiated energy changes its mutually repellant lines of divergence at an equilibrium point between the ejecting mass which discharged it to mutually attractive, converging lines which head toward the gravitative center of the next mass, is it not plain to see that the negative discharging force of radiation becomes a positive charging force of gravitation?

Is it not apparent that the energy stepped down from the sun, for example, which we call radiant energy, is converted into generative energy as it steps up its voltage pressure in our planet?

Is it not perfectly plain that the direction of a step down transformation of energy is exactly the opposite direction of that taken by a step up transformer?

Is it not evident that a charging force moves in the opposite direction from a discharging force?

If these premises are well founded, is it not impossible for a charging force to be attracted by a discharging force?

How then did the error creep into our consciousness?

Is it not the same reasoning that once convinced men that the earth was flat because they said "I see it with my own eyes?"

For an illustration of the practical workings of the solenoid principle, let us imagine a room of one thousand cubic feet.

Within that room is a certain quantum of potential energy expressed as air pressure which we will define as X quantity.

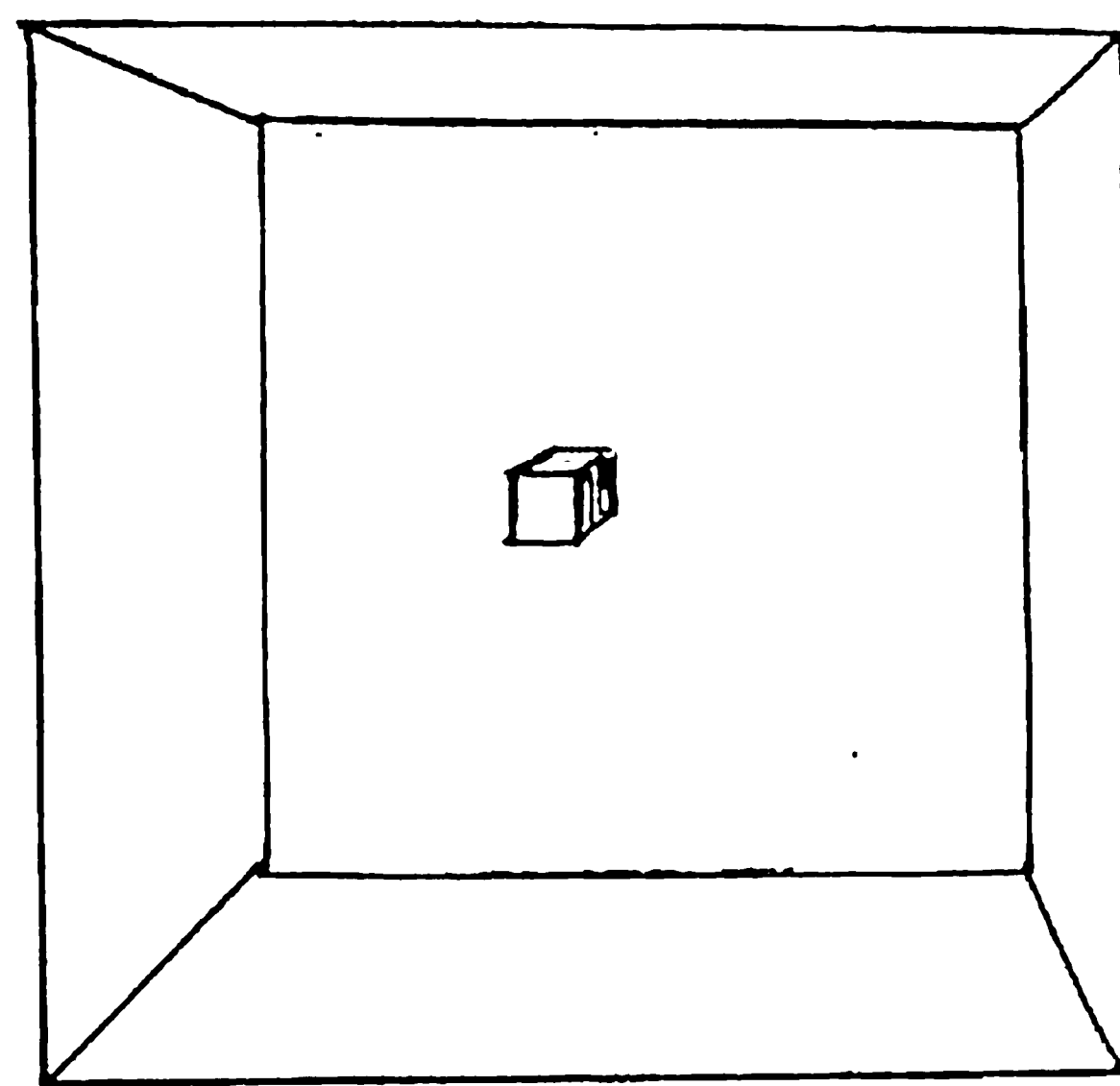


FIGURE 5

In its expanded state of uniform, equal pressure, this energy will do no work.

If, however, a tank of one cubic foot were placed at the center of the room and all of the air content of the room were pumped into that tank, the energy so pumped in would be equivalent to stepped up electrical energy while on the inward journey.

It would also be equivalent to a charging or generating force. It would be a positive force, for all lines of force are mutually attracting toward a common center of greater density.

It would also perform work while being compressed.

If this energy were released through a small tube, it would perform work for a long time, but if discharged through a large tube, it would perform the same amount of work in a short time.

It would then be a negative, or discharging force, for all lines are mutually

repelling toward an expanded area of lower density.

The X quantum of energy would still remain the same; the only difference would be that it had been divided into two pressures, a low pressure and a high pressure which is equivalent to a low potential and a high potential, or to vacuity and density.

This is all that Nature does to perform work, whether to create a storm or a solar system.

Whenever one equilibrium pressure is divided into two opposing pressures, each one of the two tries to destroy the other in order that they may each return to the stability of an equilibrium.

It is this universal desire of all force to return to its potential state of stability in equilibrium which performs all of the work of the universe.

This is a universal law applicable to everything in Nature. If a man, for example, is made comfortable and thoroughly at ease he is deprived of the incentive for work. Make him uncomfortable or place him in danger and he becomes intensively active until his stability is recovered.

Our solar system is composed of a series of generated solids of compressed energy all of which are in their comfortable and appropriate potential positions of the moment, but are constantly changing to the proper potential positions of the next moment.

A condition or position of stability is impossible to maintain in this universe of changing potential between any two masses. Constant readjustment of poten-

tial demands constant readjustment of position.

Let us assume that the tank of air above described was surrounded by a circle of others and connected by tubes of lessening diameter.

The discharge of the high pressure tank would charge the next one and discharge into the succeeding one, and so on until the entire X quantity of energy was all short circuited into an equilibrium.

During this process of continuing motion, wheels could be made to turn between the tanks. When the energy became equalized, motion and work would both cease.

In this same manner, the sun steps down its own energy along its equatorial belt by radio-active discharge and steps it up again for Mercury by genero-active charge just as the human voice is stepped down into disappearance and condensed again by radio or the cliff side.

Mercury's negative discharge becomes positive charge for Venus.

And so on, all down the pressure gradient of the system down to Neptune, and beyond, the energy of the high pressure vortex of generated energy in the sun is utilized to the last volt in repetitive sequences as it escapes from the sun's exhaust at its hot equator and returns as regenerated energy to its relatively cold poles, and to the cold poles of all the planets.

Nature does not waste one volt of pressure in an entire solar system, or in a Milky Way, or in ten thousand galaxies.

All of it is regenerated for re-radiation forever and forever.

III

Resistance, Repeativeness, and the Curvature of Space

ALL direction is curved. All motion is spiral. Resistance to motion is the cause of curvature of space. Resistance to motion is the cause of Nature's second greatest characteristic attribute, repeativeness.

Opposition is the first, but both are simultaneous. Nature desires action but demands an equilibrium.

Action can only be obtained through opposition.

With an expression in Nature of the desire for action, force is born.

Resistance to action divides the one force of action into two, one of which is genero-active and the other radio-active.

These two forces proceed in two directions.

One force proceeds inward to create a plus equilibrium condition which we call condensation, to accumulate the energy of force into a gradient of increasingly higher pressure and smaller volume.

The effect of this force is to create a minus equilibrium gradient of lowering pressure in the surrounding environment.

This force centres itself in harmonic vortices of energy waves and expresses itself by pulling inward from within toward those centers to form solids.

These vortical centers are the gravitative centers toward which force is attracted into increasing potential.

The other force thrusts outward from within to create a balancing minus equilibrium condition which we call radiation.

The effect of this force is to attempt to restore the evacuated space to equilibrium by redistributing the accumulated energy back to where it came from.

Nature does not succeed in this attempt, however, for if it could do so all motion would cease.

The action which causes one solid to form into systems causes other systems of solids to form. Between these consecutive systems of solids, and each unit of each system, there is a zero plane or area culminating in a point of maximum low

pressure where radiation ends, but is carried across by the impetus of its force, and begins again on the other side as the opposite force.

This is the universal mechanistic dead center of force where the centrifugal thrust of radiation ends and the centripetal pull of generation begins.

The other dead center of force is at the high pressure point of gravitative centers where the step-up contractive pull of the genero-active pressure force ends and the step-down expansive thrust of radio-active degenerative force begins.

It will thus be seen that motion is continuous between high and low pressure points and low pressure areas throughout the universe. There is no cessation and no stopping, no unbalance, no distortion and no disorderliness.

It will also be clearly seen that Nature's mechanics are exactly the same as man's mechanics. The thrust and pull of expansion and contraction between high pressure and low pressure equilibrium points is the only method by means of which man or Nature can express energy and perform work.

The weather map is a good example of the exchange of force due to the polarization of sections of the planet.

Each low and high pressure point of atmospheric pressure is an extension of the earth's magnetic poles and these, in their turn, are extensions of every other bi-polar mass in this system, of which the sun is the control, and of every other mass in the universe.

The winds which rush frantically from one dead center to another with an enormous potential for work, or the gentle breezes which take their time about it, and which have little desire or capacity for work, are complete examples of Nature's plan of polarization to produce motion.

Whirling cosmic pin-wheels in the heavens which contain giant suns, and their systems, are larger, but otherwise

there is no difference in principle nor in effect.

The maximum of working high potential in any mass is developed when opposition is at its maximum in poles concentrated to points of disappearance in its axis of rotation. This is the amplitude position of the wave to which the then spherical mass of concentrated volume belongs.

In this position the axis of rotation of the mass is 90° from its plane of birth on the axis of its wave.

The minimum of working potential in any mass is in the plane of the waves' axis, where polarization is widely decentrated over the then very oblate, very tenuous and indefinite mass of expanded volume.

The poles of the universe are expansion and compression pumps which pump a plus equilibrium into mass at the expense of its spatial environment, which is then the minus equilibrium.

Motion cannot begin until the One Force thus expresses its desire to divide into the appearance of two.

Motion necessarily ends when this opposed desire becomes satisfied with its effort and the two forces unite again as an equilibrium.

This pumping process is the driving force of Nature's one universal machine in which all of its big and little wheels are geared together.

Science is well aware of the demonstrated fact of electrical practice, that no current can flow until both positive and negative electrodes are connected in such a manner as to complete a circuit.

Until this is done no energy is developed, no work can be performed and no "charged" condition can be developed.

In the face of this most evident and most obvious of Nature's mechanical principles science presumes mass to be separately "charged" by either of the two separate "charges."

Negative electrons supposedly surround positive protons in concentric shells and, by their number, the division into different substances is determined.

These negative electrons jump from one concentric shell to another in an extraordinary manner which has no precedent in Nature, nor in electrical practice.

They supposedly neutralize the positive protons in a manner which also has no precedent in Nature nor in electrical practice.

Nature has but few motives for her complex patterns all of which are visible in the heavens. Nature is repetitive. She uses her motives over and over again in repetitive periodicities in little mass and big mass, in low octaves and high octaves.

The atom models of today's thinking are as far removed from truth as the Arthurian concept of a flat world upheld by elephants and tortoises.

Sir Ernest Rutherford was aiming in the right direction with one of the two doors of truth opened to him, when Nature's principles were discarded by other thinkers and pure fantasy substituted.

Rutherfords theory was abandoned because it was mathematically incredible that electrons could revolve around a central nucleus without an attendant collapse of the entire universe.

The reason given for such a collapse is that the electrons would radiate all of their energy and eventually fall into their nucleus.

This is exactly what does eventually happen to every atom and to every solar system when they have run their cycles, but, as the process is a continuous one, and is delayed by a lesser generative process going on at the same time in each planet there is no possibility of collapse.

That process is going on in our solar system without any evidence of collapse, but, on the contrary, there is strong evidence of the sun's preparation for the birth of a new planet.

The difference between an atom and a solar system is only a dimensional one.

Electrons there are, and protons also if you like, but corpuscles they all are, for they are all as alike as our sun and our planets are alike.

They differ in their preponderance as their polarization either decentrates or concentrates.

Electrons, manufactured at the cathode by the polarization of its environment, change their preponderance many times during the one ten thousandth of a second in which they act as pulsing condensers to pick up messages.

It should be perfectly clear that the sun could not be a "proton" if it radiates.

It should also be clear that the planets could not be electrons, if they are capable of generation by impact of the charge of the sun's discharge.

It should be very clear that an admittedly polarized mass like this planet must be a solenoid, equatorially wound, and hence could not be "charged" with either positive or negative "charges" alone.

It should also be clear that this planet and its winding, and its satellite with its separate winding, and its orbital area with its separate but larger winding, are, collectively, one unit of a series of concentric solenoidal bi-polarized units which constitute this step-up, step-down transformer of energy from low to high voltage, and back again, which we call our solar system.

This solar system is as definite a whirlpool of motion as a striation in an evacuated tube, or a loop of force in an electric current, is a whirlpool of motion.

It should also be perfectly clear, by studying a storage battery, that the motion of force which performs work will in no way function until the one equilibrium force within that battery is pumped into an apparently divided state of two opposed forces.

It should be clear that when such a divided state is effected, there is a difference of pressures as definite as the high pressure within a planet and the low pressure of space, or as the opposed pressures which we see on the weather map.

It will also be clear that the spiral areas of high pressure which correspond to the wires in a solenoid must be separated by fields of flux in Nature's solenoids.

At the equilibrium positions in the cores of Nature's solenoids, the suns, planets, satellites and electrons of all systems find their orbital lanes.

All orbital lanes are coincidental with gravitative centers, and all gravitative centers are coincidental with the equilibrium position which lies somewhere within every polarized mass, not necessarily at its center.

Nebulae, for example, are polarized, and their gravitative centers are seldom anywhere near their centers as we shall more particularly show in another thesis.

A cross section drawn through solenoidal turns will reveal striations of alternate high and low pressure, or a mass "falling" or "rising" through them will cut across them.

The Heaviside layers around the earth and the loops of force around a wire correspond to these striations.

Striations are one of Nature's strongest characteristics which will have to be discussed in a separate paper.

At one of these dead center positions electricity changes its costume behind the wings and comes back on the stage of force and motion with all the attributes of magnetism.

It is the same force exactly. It has merely put on a repellent costume instead of an attractive one and begun to breathe out instead of in. Instead of an endothermic intent of heat absorption, it has become exothermic in nature. Expansion into invisibility has taken the place of contraction into visibility. Invisibility does not mean nothingness, it means that formerly visible solids have expanded to a tenuous state beyond our perception. Disappearance is only a fleeting effect for at the zero point of expansion reappearance begins again.

At this other dead center position, magnetism gets back into its attractive costume and begins its new role as a regeneration of its degeneracy in another winding up of the cosmic clock.

There is, therefore, but One Force in the universe which expresses itself in two opposite swings of the cosmic pendulum through the medium of polarization.

It has been stated that Nature desired opposition but demanded equilibrium.

We are now going to consider Nature's method of trying to enforce its demand for an equilibrium, through resistance to motion.

Resistance is the cause of repetitiveness in all effects of motion.

Through resistance to one impulse of force the opposite impulse is born.

Resistance is the cause of curvature of space and curvature of space is the mirror which reflects simplicity into complexity.

The rotation of every mass upon its axis, the revolution of every mass around the nucleus of its system, the evolution

of magnetic poles and oblateness, is due entirely to resistance.

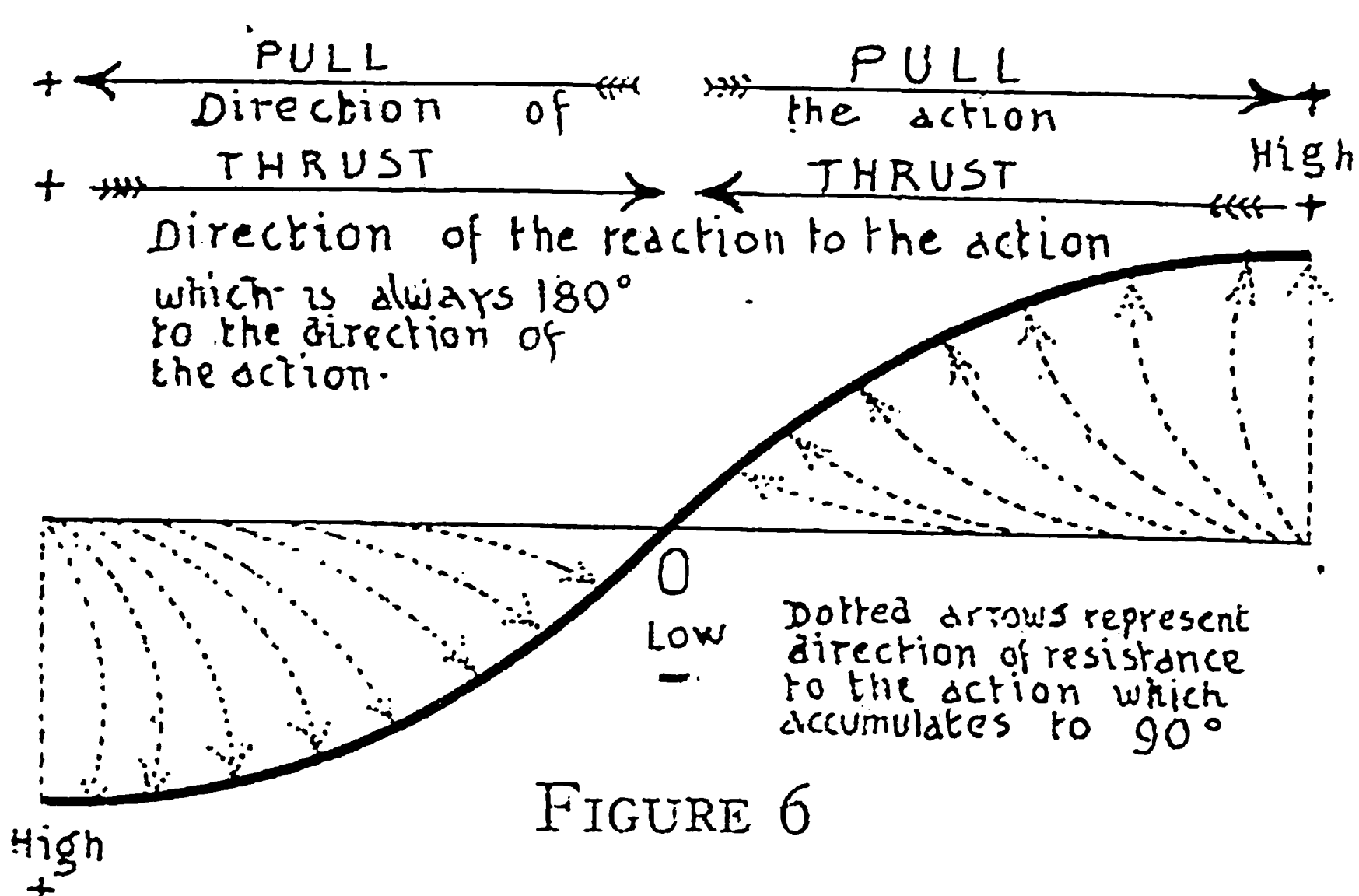
Resistance is the cause of that apparent division of the One Force into the appearance of two forces, in that expression of force which we call sex.

Force, motion and sex are the creative trinity.

Sex is the motive power behind force and motion.

Let us trace the action of force, motion and resistance.

An electric action takes place in space which expresses itself in pulling inward from within toward a nucleal center.



The direction of the thrust of resistance to the positive or plus action, and an equal thrust of resistance to its negative or minus reaction to that action is shown in figure 6 by the arrows.

The result of the thrust in each instance is to deflect the intended direction from a direct or straight line to a curved or spiral line which we know as the wave.

Along the sequences of waves so formed all of the systems within which matter is formed are centered.

The wave is the basis of all motion.

The atom is constructed along the wave. Systems and striations of atomic, solar and galaxial systems are strung along waves in the manner briefly described herein and in accordance with one law for all.

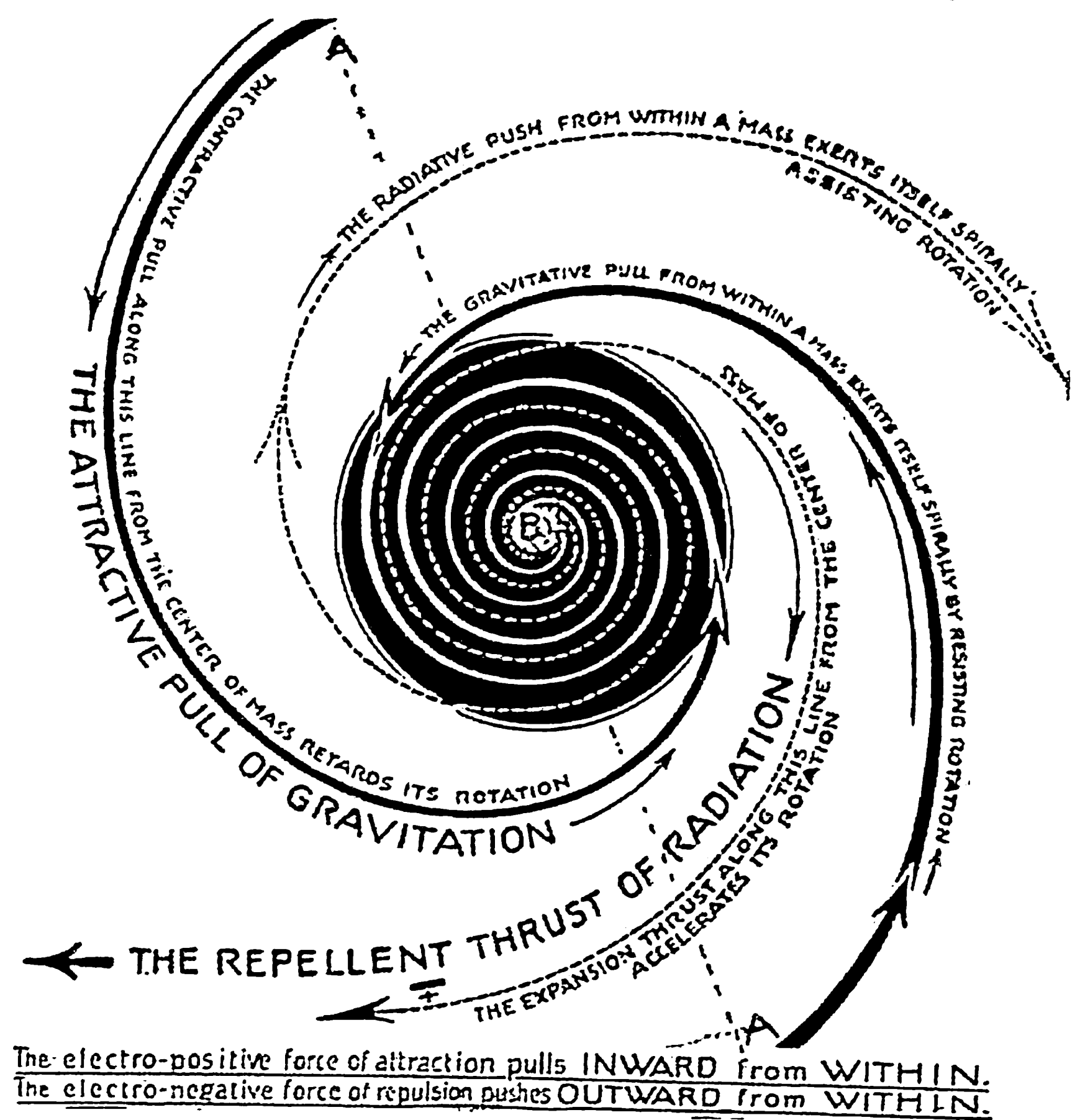
This subject will be treated in greater detail in another article in which chemical action, atomic structure and wave mechanics will be stressed.

Having considered the effect of the thrust of resistance which deflects the contraction of a straight line into a wave, let us now illustrate the effect of resistance on a mass within a wave.

To make this clear, the reader must refer again to figures 3 and 4 which in-

dicates the directions of pull and thrust as toward and away from a common center.

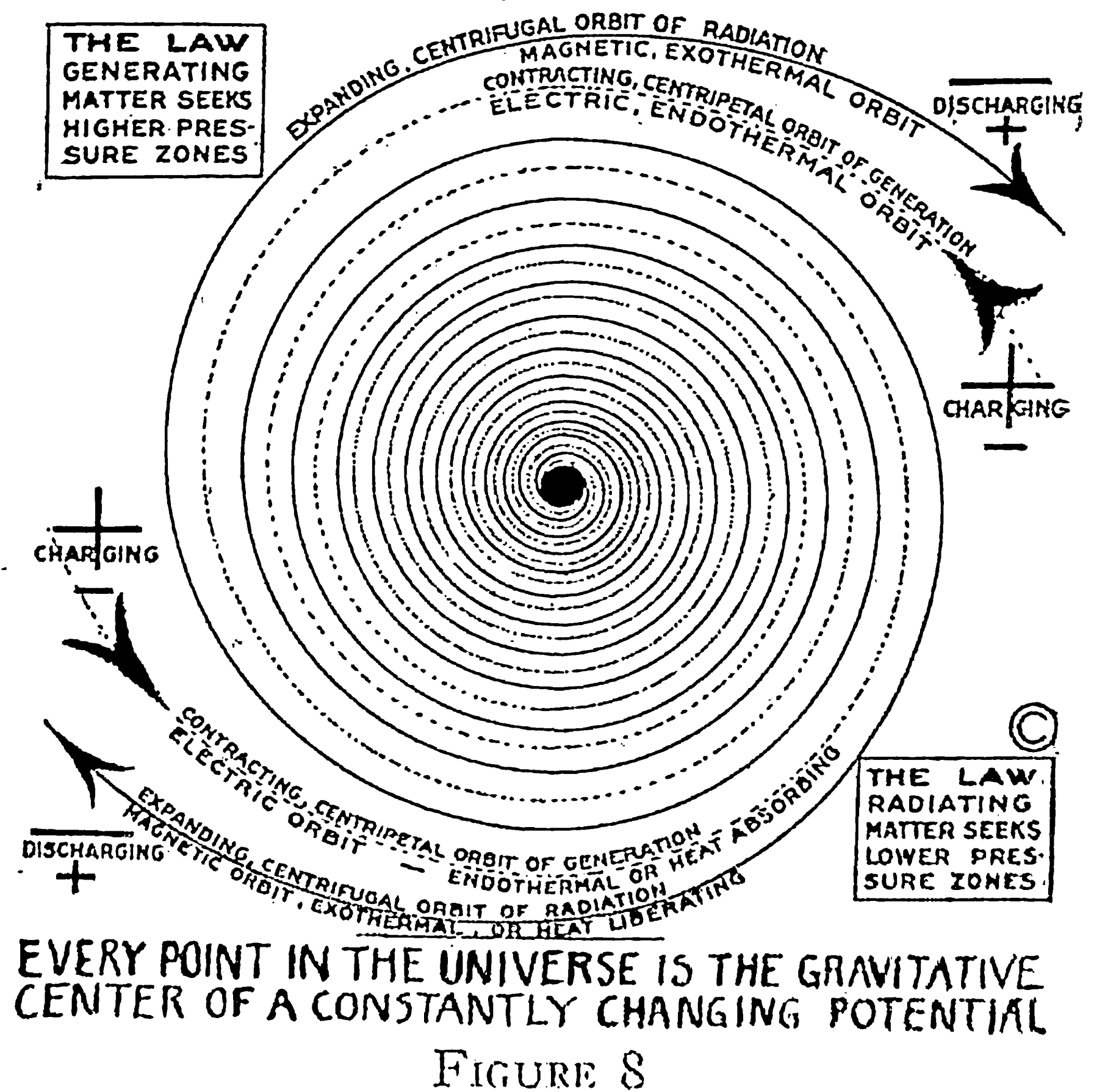
If Nature allowed the inward contraction of a force at A in figure 7 to exert itself in a straight line to B, no mass in Nature would rotate on its axis.



Nature does not allow such a happening, but deflects the action of electro-gravitational pull from a center of force as indicated in figure 7 so that all potential accumulating on a mass is pulled toward it tangentially, and all dissipating potential is thrust from it tangentially.

Position B, therefore, does not pull directly at A in a straight line but from the closed center of a spiral, each point of which is deflected by resistance into a continuous spiral orbit pressure gradient as shown in figure 8.

ALL DIRECTION IS CURVED-ALL MOTION IS SPIRAL



It will, therefore, be seen that motion, which is the expression of force, cannot take the route of the shortest distance between two points because of the deflection of resistance. **It must always take a curved route, its curvature always determined by the density of the intervening potential.**

The greater the density of matter the greater it resists penetration by any material body, therefore the greater the curvature of deflection.

It should also be plainly seen that the tangential pull of generative force acts as a brake to decelerate rotation, while the thrust of radiation acts as a force to accelerate it.

It necessarily follows that the higher a potential the slower the rotation, such as we find on Mercury in the high pressure gradient of this system. Conversely, the lower the potential, the faster the rotation, such as we find on Jupiter and Saturn out in the low pressure gradient of the system.

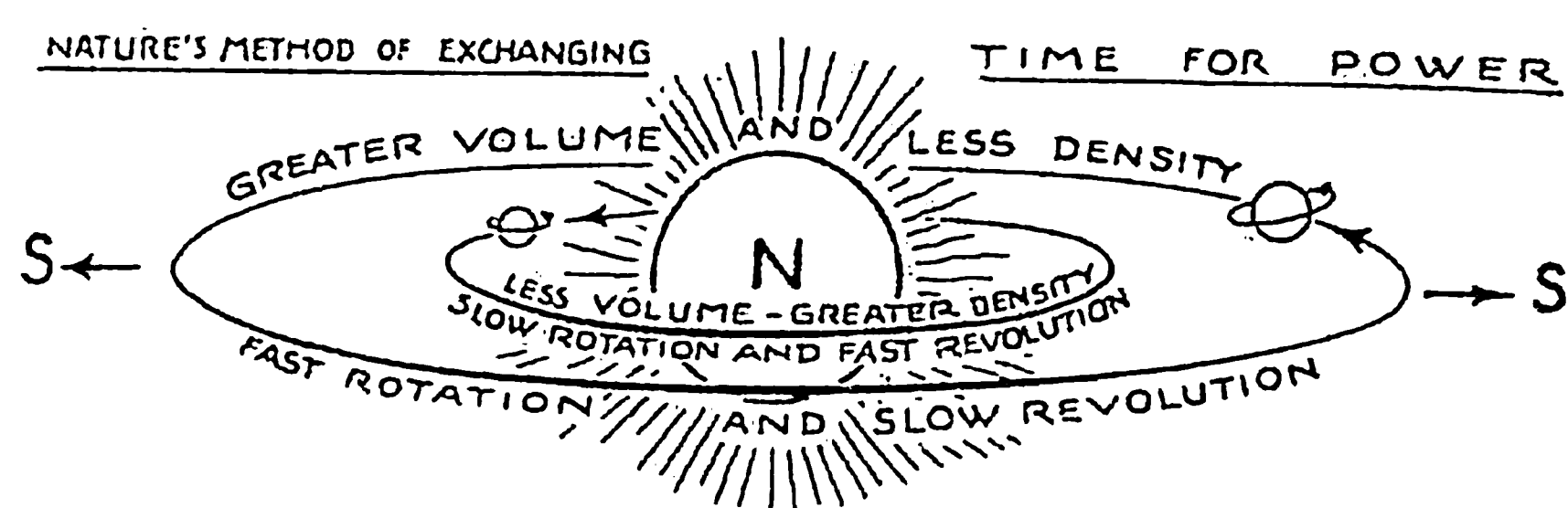


FIGURE 9

In accordance with the law of opposite actions for opposite effects, which follows on Page 18, the revolution of planets around their nucleal sun is accelerated by the greater pull or drag of the whirling vortex in high pressure positions while out in the low pressure gradient revolution is very slow because of the very little pull.

Mercury revolves around the sun in 88 days, this earth in 365 days, while Neptune makes the journey in 165 years.

The pull and thrust of the opposed forces exerted in the solar vortex, or in the vortex of the Milky Way, or in an atomic system, is the sole cause for the revolution of masses around their primaries, and, for the rotation of masses around their own axes, and their speed in each instance is entirely due to their potential positions. The law for one is the law for all.

This much talked of "initial impetus" of

masses which no one accounts for other than through some cosmic cataclysm is reasonably accounted for by the loops of force which cause vortices of whirling striations to form in the field of any solenoid. This matter might have been settled long ago if science did not so implicitly believe that electricity and gravitation were unrelated effects.

All direction of motion must be curved; the curvature of space must be spiral; positive charge and negative discharge pass each other on the inward and outward directions of the spiral at 180 degrees; magnetic poles must change as potentials change; and resistance exerts its force with varying intensity in the pressure gradient of a wave which has a maximum pressure at trough and crest at 90 degrees to the axis of the wave.

If positive charge and negative discharge pass each other, going in opposite directions, it is not logical to say that "opposite charges attract."

Herein follows the law which not only accords with observed facts, but is also logical.

Positive charge attracts positive charge.

Negative discharge repels both negative discharge and positive charge.

Every mass in the universe must rotate upon its axis due to the centripetal effect of tangential pull and centrifugal effect of tangential thrust.

Every mass must be the nucleal center of a spiral vortex which corresponds exactly in its effect to a solenoid.

Lesser masses which form in lesser vortices within greater masses, such as atomic systems or electrons within solids, or such as planets in solar systems and satellites in planetary vortices, must have their own gravitative centers toward which potential accumulates and away from which potential dissipates.

Conductivity lessens as pressure lowers in surrounding environment and inductivity increases as pressures are stepped up in the closing spiral.

If these statements are well founded, it necessarily follows that the environment surrounding any mass must act as an insulating medium to protect as far as possible its accumulated potential from dissipation into space or from absorption by other masses.

If this is true, the thrust of dissipating potential from any two masses must act as a repellant force to hold them apart as far as their respective potentials will allow.

Between every two masses there must, therefore, be a plane, or area, of maximum low pressure culminating in a point which acts as a limit of expansion to the radiation of both masses. This low pressure point must be an equilibrium or dead center of force, at which position there is no motion other than the impetus of approaching radiation and departing regeneration.

As radiation is carried beyond this equilibrium low pressure plane it must necessarily be caught in the generative centripetal lanes of the next vortex.

This would reverse the expanding negative discharge to contracting positive charge.

This is Nature's process of exchanging potential.

As high potential masses such as our sun draw the energy away from masses of lower potential such as our planet it thrusts it farther and farther away from it.

Conversely, as our planet is recharged by the impact of the sun's regenerated radiation, it resists the repellant thrust in accordance with its ability to absorb potential.

Thus we have the effect of repulsion and also the effect of attraction in every mass.

If it is true that every mass has both the power to attract as well as to repel, which it necessarily must have if it both charges and discharges, should not the Newtonian laws of gravitation be rewritten as follows:

***Every mass has the relative apparent ability to attract and to repel every other mass, its relative ability depending on its relative potential.**

Every body attracts and repels every other body with a force which increases and decreases in the universal ratios in accordance with its potential position and according to whether the direction of the mass is centripetal or centrifugal.

If the above laws and observations are

*Note. The laws printed in this thesis are selected from a series of about two hundred which were printed in "The Universal One". Such a radically new system of motion required new laws to conform to its new principles.

in accordance with Nature's principles, should not the following laws be recorded for man's use?

In any mass, its content of centripetal force is its content of power to attract.

In any mass its content of centrifugal force is its content of power to repel.

High potential is generated from low potential against an accumulating pressure resistance equal, in inverse ratio, to the cube of the equilibrium pressure of the low potential, and is degenerated with equal pressure assistance in direct ratio.

All motion begins in the plus, contractive, endothermic impulse of generation, and ends in the succeeding minus, expansive, exothermic impulse of degeneration.

The degeneration of any mass is exactly balanced by the regeneration of another mass.

The greater the positive charge, the greater the pressure of contraction.

The greater the pressure of contraction, the less the volume.

The greater the negative discharge, the greater the pressure of expansion.

The greater the pressure of expansion the less the volume.

Every pressure develops an exactly equal and opposite resisting pressure.

In every mass, the attraction of the accumulating pressure and the repulsion of the distributing pressure exert their forces in opposite directions.

All mass is generated by accumulation of the universal content of energy into higher potential.

That which is generated must be radiated.

All mass is regenerated by absorption of the impacting radio-active energy of all other mass.

All mass is degenerated by its own radiation.

All idea is repetitive and no effect of motion once started ever ends.

No state of motion ever began or ever ended.

All mass is both electric and magnetic.

All mass simultaneously expresses both opposites of all effects of motion, and each opposite is cumulatively preponderant in cycles.

All mass is simultaneously electric and magnetic, but preponderantly one or the

other cumulatively in endless repetitive cycles.

All mass simultaneously revolves and rotates though one effect is always preponderant and the other one is preparing for its right of preponderance.

All opposite effects of motion are simultaneous in the expression of their sex opposition but preponderant in sequence in each sex expression.

All electro-magnetic mass forms into systems of units which revolve in spiral orbits both centripetally toward and centrifugally away from nucleal centers.

All preponderantly charging systems are positive systems.

All preponderantly discharging systems are negative systems.

All preponderantly contracting systems are positive systems.

All preponderantly expanding systems are negative systems.

All systems whose spirals are preponderantly closing spirals are positive systems.

All systems whose spirals are preponderantly opening systems are negative systems.

All systems of preponderantly lessening volume are positive systems.

All systems of preponderantly increasing volume are negative systems.

All systems of preponderantly increasing potential are positive systems.

All systems of preponderantly lowering potential are negative systems.

All preponderantly integrating systems are positive systems.

All preponderantly disintegrating systems are negative systems.

All preponderantly generating systems are positive systems.

All preponderantly radiating systems are negative systems.

All preponderantly heating systems are positive systems.

All preponderantly cooling systems are negative systems.

Electricity attracts, magnetism repels.

Electricity and magnetism move in opposite directions, their departure from each other being 180 degrees.

Electric lines of force approach each other at 180 degrees.

*Revised.

Magnetic lines of force depart from the line of direction of electric force and also of magnetic force at 180 degrees.

Electric energy reproduces itself by induction and dissipates itself by conduction, at an angle of 90 degrees to the lines of direction of induction and conduction.

All mass is potential out of place, and all mass is constantly changing potential.

*Positive charge attracts positive charge. Its sole office is to attract.

*Negative discharge repels both negative discharge and positive charge. Its sole office is to repel.

The union of an action with its reaction is always followed by the reproduction of separate actions and reactions.

All mass is generated and regenerated by a contractive pressure exerted in the direction of its gravitative center. Its minimum of generative pressure is exerted from its equatorial plane and its maximum pressure from its poles.

All mass is radiated and diffused by an expansive pressure exerted in the direction of its surface. Its minimum of radiative pressure is exerted from its poles and its maximum from its equatorial plane.

The generation of all energy is accomplished only through the resistance exerted against the direction of the force of any established motion.

Every expression of motion has its equal and opposite expression.

There can be no increase or decrease in any effect of motion without a balancing increase or decrease in its opposite effect.

The power to attract and to repel lessens as volume increases and grows greater as volume decreases.

The relative ability of a substance to attract and to repel is in the same ratio as the increase or decrease of the opposing pressures and other dimensions which determine the potential of a charging or discharging system.

In any mass the apparent ability to attract increases with increase of positive charge and decrease of volume; also the apparent ability to repel increases with increase of negative discharge and decrease of volume.

The greater the resistance the greater the generation of power and the less its dissipation in speed.

The less the resistance the less the generation of power and the greater its dissipation in speed.

The greater the resistance to an action of force the greater the genero-activity.

The greater the genero-activity the greater the power of mass to absorb heat.

The less the resistance to the reaction of force, the greater the radio-activity.

The greater the radio-activity the greater the power of mass to give out its heat.

Radiating and radiated bodies seek equilibrium positions in lower pressure zones appropriate to their lowered potentials.

Expanding bodies seek lower pressure equilibriums.

Contracting bodies seek higher pressure equilibriums.

An action calculated to displace is simul-

taneously accompanied by a reaction to replace.

All gravitational and radiational expressions are simultaneous in their opposition.

All effects of motion are simultaneously opposed, but their repetitive acts are sequential.

Contracting, generating bodies decelerate the speed of rotation of inner planets by proximity.

Deceleration of rotation of the planets of a system increases the surface tension pressure of a system.

The greater the deceleration of rotation, the greater the centripetal force of contraction pressure.

Acceleration of rotation of the planets of a system decreases the surface tension pressure of a system.

IV

Weight

NOW let us consider in a new light this property of matter which we call weight.

What is weight?

It is defined as "the measure of the force with which bodies tend toward the earth's center, or the quality thus measured."

It is also defined as "the downward pressure due to gravity, diminished by the centrifugal force due to the earth's rotation."

Nothing in Nature could be more variable and more relative than weight, for any mass which has weight in respect to the earth has a different weight in every variation of its position in relation to the earth.

A pound of anything weighs more at the poles than at the equator; and less than a pound on the mountain top; and less as its distance from the earth increases.

This we know. It is admitted as a proven fact of experiment.

This being admittedly true, there must be a point somewhere in space where the weight of any object leaving the earth has no weight in respect to it.

This must be so. It is illogical otherwise.

Let us determine from further consideration of this principle if the moon has not risen from the earth to a point in space where it has no weight in respect to the earth or to any other planet, or to the sun.

Let us also determine if there is not a mutual point somewhere in space where something rising from the earth and from the moon have no weight in respect to either body.

Let us determine whether there are not low pressure points between all masses in the universe which are mutual centers of repulsion, or radiative centers in the same sense that there are mutual centers of attraction, or gravitative centers. To determine this would clear an age-long mystery.

In other words, is space polarized just as mass is polarized?

I believe that space is as definitely polarized as mass is.

I believe that there is an invisible bar magnet between every two masses in the

universe, the poles of which are the positive and negative plus and minus equilibrium positions which act as controls of the relations between the two masses.

One of these is the mutual gravitative center around which both masses swing. It exerts its force in drawing both masses together. The other is the mutual radiative center which holds both of the masses away at arm's length and exerts itself to its utmost in thrusting both masses farther apart.

The polarization of space reasonably accounts for many unexplained phenomena.

It clears up many deceptions which Nature unintentionally practices upon us through her illusions of motion. This illusion of weight and the conclusions drawn from it, which led Newton to decide that the moon had weight in respect to the earth, is one of the greatest of these deceptions.

Another one of them is the tidal theory.

The evidence of our eyes is conclusive and convincing evidence that the moon and earth have relative weight in respect to each other. The moon apparently exerts its attractive pull on the earth to such an extent that the ocean bulges in such a manner and at such intervals that the moon's attraction must be the cause of it. No other conclusion is possible, says science.

There is, however, another bulge on the opposite side of the earth away from the moon which has never been explained in a logical or rational manner.

The polarization of space accounts for both of these tidal bulges and also harmonizes with the fact that the earth and moon are pushing each other away from each other with more vigor than they are pulling toward each other.

For the present the following diagrams will explain the accentuated pull and thrust exerted between any two masses in the direction of a line drawn through their gravitative centers.

For a double purpose let us take the earth and the moon as our example.

This diagram illustrates the spatial control of both masses by the mutual high and low pressure points in space of which both the earth and the moon are extensions.

There is such a point in space as a mutual gravitative center. That fact is conceded and mathematically proven.

If there is such a point of mean high pressure in space there must be a mean low.

If one pole exists as an appearance in this bi-polar universe of opposition in every effect of motion, it necessarily follows that the opposing pole must likewise exist.

All effects of motion run in pairs of opposites and all moving things are polarized.

When motion ceases, or appears to cease through simulation of non-motion, polarization disappears.

Let us now consider whether any of the planets of any system, either solar or atomic, have any weight in respect to any other planet or in respect to the sun of its system, or whether they are not all floating in equilibrium positions proper to their respective potentials.

If we can prove this, it will dispel the old belief that planets and satellites would fall into their primaries if deprived of their "initial impetus."

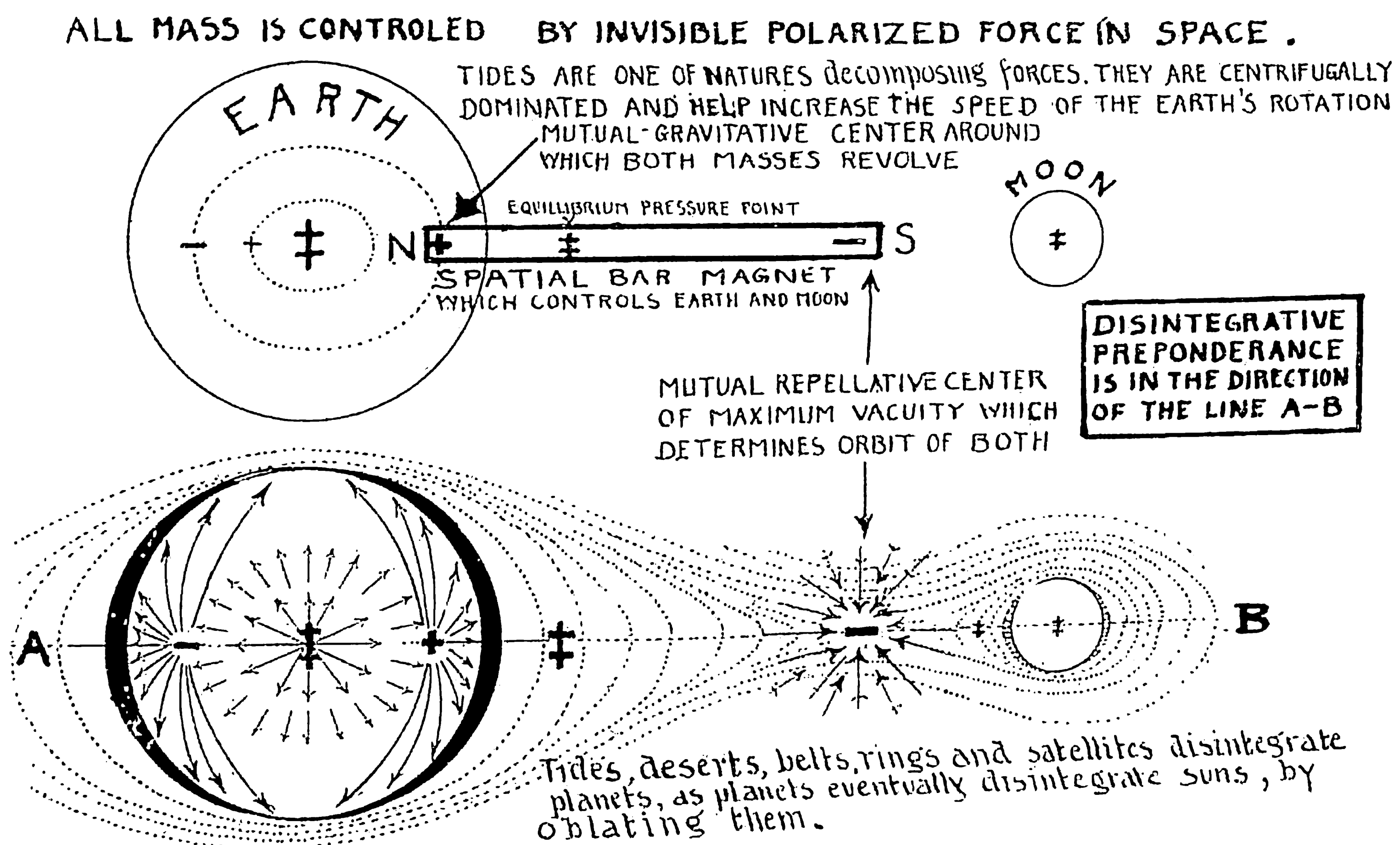
Not only this but it would prove that if the moon were pushed a thousand or more miles nearer the earth and released it would rise again to the same position, exactly as a ball of air forced under water would rise.

There are so many other conditions which alter the weight of the mass that it is quite necessary to readjust our thinking about it.

Mass means quantity of matter, yet weight and mass are too often joined together as inseparable. Actually they are as separate and separable attributes as are weight and time.

A given mass is always the same quantity of matter irrespective of what changes of volume, temperature or density it experiences.

The weight of a given mass can be taken away from it entirely, without in any manner changing its quantity, by expanding it as a rain drop expands to vapor, until its potential lowers to that of its environment, or by surrounding it with water or



Tides are not caused by the pull of the moon but by the increased thrusting power of the earth, due to the mutual additional charge and discharge of proximity. The increased thrusting power is exerted equatorially and the increased pulling power is exerted axially. Increased potential in any mass adds to its centrifugal force in its area of maximum speed of rotation and least density, and to its centripetal force in the bi-polar areas of least speed of rotation and greatest density. The moving high points of the earth's pressure gradient are the two points on the earth nearest to and farthest from the moon. The tides follow these two high points.

any approximately equal potential until displacement and replacement equalize.

It is supposed that a man who weighs 150 pounds still weighs 150 pounds when floating in water.

This is based on the supposition that his "weight" is pressing down on the water as a force with which bodies are "attracted" toward the earth's center.

Is this supposition correct?

Shall we not find that radiation is pushing the man up just as much as gravitation is pulling him down?

Let us ask Nature a few questions and see if we cannot get a different concept of weight.

If so, then let us write a different definition for weight than that which defines it as the amount of "downward pressure due to gravity."

Let us consider a mass of water vapor expanded to a pressure of ten pounds per square inch.

It is quite obvious that this volume of water vapor cannot remain at the earth's surface where the pressure is fifteen pounds per square inch, for the upward pressure of its surrounding environment thrusts it upward.

Science claims that there is a downward thrust to every mass which is known as the attraction of gravitation.

Let us see if the upward thrust of radiation should not eradicate the idea of a downward thrust.

As the water vapor rises, it expands and, consequently, cools and changes its volume and pressure, but for the sake of illustration and simplicity, let us assume that it has risen, unchanged, with lessening speed until the pressure under it could no longer thrust it upward.

It would then stop. It could go no higher for the pressure above and below it would be equal.

Then what would happen? Would it not float in an orbit of equal pressure?

What else could it do? What else does it do than just that?

Now let us suppose that a cold wind condensed this vapor to a pressure of twelve pounds.

The same volume of vapor would then occupy a less volume and the theoretical "downward thrust" from above would push

it down closer to the earth where the pressure was twelve pounds.

Would it not again float in an orbit parallel to the earth's surface at the new level?

At each of the two levels, can it be said that the water vapor has any weight whatsoever in respect to the center of the earth?

If a weighing scale were placed under it, would it indicate any weight?

Of course not.

But, says modern science, if you could place that water vapor in a vacuum without destroying it as water vapor, it would be found to weigh something; or if you condensed it into water, it would have weight.

That is true, but by doing this, it would then have weight because conditions which take weight away have been altered to conditions which give weight.

One might just as well heat cold water to show that it had heat as remove the conditions which cause weight to prove that a mass could have weight.

If one could connect the earth and the moon with a huge vacuum tube, conditions would so change that the effects which caused those conditions would change.

Scientists who attempt to prove anything regarding the effects of gravitation must leave Nature as it is and not alter it.

Every inch of Nature is relative. Its pressure gradients change in an orderly manner. Not one inch is absolute, or homogeneous, and to apply a principle where resistance is removed by pumping one form of electric potential out of a tube necessarily leaves the other form of electric potential unaffected by that which has been removed.

Pressure of fifteen pounds an inch removed from a tube is a large amount of potential force of actual energy removed.

Let us consider the man floating in the water.

We will put under him a scale which cradles his entire body.

Does he weigh anything?

No. Not unless you lift up the scale to push him above the equilibrium position where "downward thrust" and upward thrust are equalized.

If you push him farther down in the water, will he not rise again to the same position?

If this is admitted, and if we can show that weight is a purely relative and continually changing local quality belonging

to "potential out of place," its relative difference depending solely upon how far "out of place" it is, then we can prove conclusively that the moon would require force to push it down toward the earth or to push it farther up, just as any body floating in any equilibrium pressure would.

If water vapor floating in an equilibrium pressure parallel to the earth moved in that direction due to a change of air pressure, which generates a wind current, perhaps we can find that the moon and the planets are floating in equilibria, and that their motion is partly due to being caught in the drag of a changing electric pressure generated by their rotating primaries and more especially to the fact that the one and only points of comfort are being removed from them continuously and they must keep on moving to find it.

Just as the donkey never gets the hay hung on his rider's stick, so does a planet never find a stopping place for that ever moving point of comfort.

Let us return to the man floating in the water and admit that if a tube were placed all around him, and down into the water, he would drop down with the lowering water as it was pumped out of the tube.

He would not, however, have weight so long as he floated in the displaced substance which his body equally replaced.

To weigh anything, he must be suspended in the tube above the water where the potential displaced by the man is vastly less than the potential of the man.

Over the floating man, the water vapor, drifting at a twelve-pound pressure density, suddenly strikes a cold current and contracts to a twenty-pound pressure or more.

The result of such a condensation causes the water vapor to become liquid.

Immediately this heretofore weightless substance, floating in an equal pressure, descends.

Why does it descend?

Let us not, for the moment, be conventional, and answer parrot-like: "Because it is attracted by the earth," for it is exactly the same substance which was thrust from the earth a short time ago.

Slight reasoning should convince us that nothing has happened to the substance of water except change of volume. It has

stepped up its energy by taking a few more turns in its solenoid.

When the given content of potential was spread out over a volume of environment of greater pressure than it could displace, volume for volume, it arose.

When it contracted to a smaller volume of exceedingly greater pressure than that of an equal volume of environment, it descended.

As water and air are two different substances, let us consider the same effect with each substance taken as one.

It is conceded that warm water or warm air has a greater volume for an equal mass than cold water or cold air.

Applying the rules laid down herein, one can explain the increased volume by the increased strength of the repellant radiative outward thrust due to the energy of that dissipative force we call "heat."

Nature's step down transformation works in every atomic solenoid to reduce the number of "turns" in each coil.

On the contrary, the number of "turns" in the colder water atoms has been increased with the resultant increase of generative inward pull.

In this instance, the same homogenous substance has been divided into a repellant force which rises, and which has a lifting capacity in respect to its environment, and another force which falls and has a compression capacity in respect to environment.

It will also be observed that the rising part of the substance has an evacuating effect of discharge which is dissipative, while the falling part of the substance has an accumulative effect of charging, which is integrative.

It seems incredible that science should attribute this disintegrative effect to the attraction of gravitation for it exactly corresponds to the repulsion of radiation.

It seems incredible also that science should continue to overlook the fact that the power of gravitation and radiation to exert themselves are adjusted entirely by relative proximity, and that relative proximity always changes with change of volume.

Substances which are compressed into close quarters by Nature's genero-active processes and radiate a sufficient amount of the heat developed by the resistance to such contraction, "freeze" together into close quarters.

We call this frozen condition a high potential because a large volume of energy has been forced to occupy less space in the universe.

A high pressure point is thus created around which Nature's lines of force more closely wind their solenoid turns.

The space between each spiral turn slightly widens, then closes and widens again and again, until the surface of the mass is reached. This gives a series of spiral wave striations of electric preponderance within a mass. This will be treated later in detail, when wave mechanics are considered.

When the surface of the mass is reached the same spiral striations of close and open windings of variable pressure continue out into space, until the pressure voltage reaches its lowest point somewhere between it and the next mass.

That condition which parallels the planet and which is known as the "Heaviside layer" is the first one of the striations which ring the planet. There are many of these at varying distances, varying also in densities, each succeeding one lower in potential than its inner companion. They correspond exactly with the "loops of force" with which every electrician is as familiar as a boy is with marbles.

Let us repeat the following law to see how the principles contained in it apply to this known effect of two directions for the same substance.

Every mass has the relative apparent ability to attract and repel every other mass, its relative ability depending on its relative potential.

Upon close analysis, is it not clear that every particle of the substance of water, or of air, which departed from the original mass changed its weight, its volume and its potential without necessarily changing its mass or its quantum of energy?

Is it not clear that the rising substance lowered its potential and the falling substance raised its potential?

Is it not clear that the drop in voltage pressure of the rising substance and the increase in pressure of the falling substance, exactly corresponds to the principles and mathematics of modern electrical practice?

Is it not clear also that the rising substance of lowering potential is less dense

the warmer it becomes? If so, is it not clear that every particle within it repels every other particle within it to accomplish the result of expansion into larger volume?

If this is so, can we reasonably continue to say that the discharging force whose sole office it is to repel by expansion, can possibly attract the charging force whose sole office is to attract it by contraction?

We know as an undisputed fact that condensing air falls, and contracts into closer quarters as it falls within higher pressure zones. We also know just as certainly, that volatilizing substance rises, and expands into larger volume as it reaches lower pressure areas.

Yet science persists in repeating as a fundamental law that "positive charge attracts negative charge."

We know also that rising substance is of less "weight" than the same substance when it is descending just as a thermometer registers a higher degree near the stove than in the ice box.

If rising and descending substance find their opposite directions because of changing volume, and if changing volume is due to changing potential it must necessarily follow that changing volume and changing potential must be closely related to gravitation and radiation.

Let us review these effects once more in another way.

Decreasing volume must mean increasing weight, for the upward thrust of radiation must lessen in proportion as the potential of the contracting volume increases its preponderance over the potential of its environment.

Increasing volume must mean decreasing weight, for the downward pull of gravitation must lessen as the potential of the expanded volume lowers.

Dense masses fall with ever increasing speed toward gravitation centers. Their "weight" also increases as they fall.

Tenuous **equal** masses of the **same substance** will not fall at all. They may rise.

If this is true, it is illogical to say that opposite charges attract each other, for it is well known that approaching bodies charge each other and receding bodies discharge each other.

This being admittedly true, charging, contracting, high-potential and gravitation

are either the same thing or attributes of the same force.

This force **must** be electricity, for electricity does just what these qualities in a contractive force must do.

Dense bodies are high potential bodies. The closer the atoms of a system, and the closer the units of an atom, the denser the mass.

Density is, therefore, the gathering together into closer relationship the energy of electro-magnetic units, all of which are trying to get together, and resisting getting together, at the same time. The closer they get, the higher the potential of their energy.

The farther apart they are the lower their potential.

This being true, discharging, expansion, low potential and radiation must be attributes of the same force. This force must be magnetism for there are but two expressions of force in the electro-magnetic field.

We have now established the fact that dense bodies have greater weight the closer they come within the influence of gravitative pull.

We also have established the fact that tenuous bodies weigh less as they recede from bodies of higher pressure, and that their "weight" disappears when they reach an equilibrium position.

Can we not logically and reasonably conclude that every potential has a true position somewhere for which it is seeking?

Could we not reasonably write it as a law that:

There is a true position for every potential.

Could we not also reasonably conclude that **weight is the measure of the force which a body exerts in seeking its true potential?**

Could we not also define weight as the **sum of the difference between the inward pull of gravitation and the outward thrust of radiation?**

Would it not also be reasonable to define that which pulls toward high potential as positive weight and the opposite kind which has a lifting capacity as negative weight?

Weight should be so divided for it works both ways.

All dimensions work both ways.

Negative weight, obeying the laws of negative force, travels in the opposite direction from positive weight, for they are opposites.

No opposites in Nature attract each other.

Positive weight and positive charge attract each other. Both are gravitative and contractive because they come closer together in every increase of their functions.

Negative weight and negative discharge not only repel each other but also repel positive weight and positive charge.

All positive dimensions attract all other positive dimensions, and all negative dimensions repel all similar and all opposite dimensions.

The three following laws relate to this opposition of effect.

The degeneration of any mass is exactly balanced by the regeneration of another mass.

In every mass, the attraction of the accumulating pressure and the repulsion of the distributing pressure exert their forces in opposite directions.

In any mass, the lifting capacity, in relation to high potential, is equal to the compression capacity in reference to low potential.

The exchange of potential, or pressure, or voltage, or weight, or heat, or of any other expression of energy is exactly and simultaneously equalized in the opposite of each expression.

If we could get into our consciousness the feeling of two directions, one which heads towards the genero-active center of high pressure which accumulates, and the other which heads toward the radio-active area of low pressure which dissipates, we would rid our minds of a lot of confusion.

The effects of motion would seem more simple, for every effect of motion could be found to be two-way and could be easily classified, as one or the other.

Let us do this now, and write down as many of the effects of motion as we can think of.

It will be found that each one can be placed in either the gravitative or the radiative column as equal and opposite positive actions and negative reactions.

Gravitation	Radiation
Attractive	Repulsive
Positive	Negative
Generating	Degenerating
Genero-active	Radio-active
Integrating	Disintegrating
Composing	Decomposing
Accumulating	Dissipating
Assembling	Distributing
Absorbing	Emanating
Contracting	Expanding
Cooling	Heating
Centripetal	Centrifugal
Freezing	Melting
Solidity	Tenuity
Condensation	Ionization
Density	Evaporization
Solution	Dissolution
Storing	Leaking
Appearance	Disappearance
Decreasing volume	Increasing volume
Inhalation	Exhalation
Endothermic	Exothermic
Distinctness	Nebulousness
Induction	Conduction
Charging	Discharging
Attracting	Repulsing
High melting point	Low melting point
Rising potential	Lowering potential
High pressure	Low pressure
Plus	Minus
Hardness	Softness
Slow rotation	Fast rotation
Fast revolution	Slow revolution

It can readily be seen that every effect in the gravitative column is accompanied by closer proximity, while every effect in the radiative column is accompanied by greater separation.

The fundamental law of modern electrical practice, however, claims that each opposite in both columns attracts the other and each like repels.

If we could but become two-way conscious, it could very readily be seen that gravitation is the genero-active force which puts the universe of solids together and radiation tears them apart.

We would then not worry about the universe running down by the so long expressed idea that the heat of the universe is radiating itself away for we would know that an energy must be generated in order that it be radiated.

Nature composes, and decomposes. She does not decompose that which has not been, or is not being composed. This is as true of a sun as it is of an apple on a tree.

The belief expressed by Sir Arthur Eddington and others, that the universe

is running down by the gradual waste of radiant energy is based upon the observed evidence of the decomposition of our stars and failure to observe the evidence of their continued composition.

It is presumed that they were "created" billions of years ago and are now being decomposed, all of them, so in some future far distant date the universe will be an equilibrium.

In point of time the "creation" of the stars precedes the "creation" of the apples on our trees but time is the only element of difference.

Both stars and apples were composed in the same generative manner, by contracting large volumes of various substances into small volumes of high voltage pressure through the medium of solenoidal polarization in space.

Both stars and apples are but visual extensions of their invisible polarized entities in space.

Both stars and apples are decomposed in the opposite manner, by expanding their small contracted volumes of high voltage pressure into large volumes of low pressure. During this process a gradual depolarization takes place.

Both processes of polarization and depolarization, of composition and of decomposition, exerted themselves simultaneously in alternating preponderances just as they do in all growing things.

All things are growing things, whether they are stars or apples, and all growing things follow the same law.

We are accustomed to seeing the entire process of the growing apple but not of the growing star.

If our lives were long enough to see as many generations of stars come and go as we see generations of apples, the concept of a running down universe would not persist.

How so inconsistent a thought could have so long persisted in the face of the belief in the law of equal and opposite action and reaction is incomprehensible.

We should realize that: **An action calculated to displace is simultaneously accompanied by an equal reaction to replace.**

Knowing this, we should clearly see the cycle of motion which forever swings between high pressure points and low pres-

sure areas, assembling the universe into solids and disassociating it, over and over again, forever and ever without ever ending.

All idea is repeated in repetitive cycles and no apparently new effect of motion once started ever ends.

No state of motion ever began or ever ended.

The creative universe of apparently new ideas which apparently requires new states of motion are but variations of old ideas materialized by variations of old states of motion.

When we think we start new effects of force we are but using old effects of force in what are to us new ways.

All force has always existed and always has exerted itself in repetitive cycles.

Cycles have no beginning nor have they endings.

Cycles have two directions, however, and both directions exactly balance.

Let us apply this two-way principle to the subject of this chapter, "weight," and see if by a change of consciousness applicable to nature's principles, we cannot correct that "downward thrust term" so constantly used in physics.

There is no "downward thrust" in Nature.

Gravitation pulls inward from within every mass and radiation thrusts outward from within every mass.

Force is not exerted "above" a mass to force it down. It is "pulled" down from underneath which means pulled together from a common center.

This is in accord with the known action of an electric force which shortens a line in the direction of its length.

The force of attraction works from a center and so does the opposite force of repulsion.

The force of repulsion does not extend from one mass to another by thrusting itself out from one mass and pushing the next mass away from it by pressing down from above.

The force of repulsion acts by thrusting discharge away from charge until it reaches its expansion limit at the dead center equilibrium plane which lies between every two masses.

At that position, the gravitational pull of the next overtone position at the center of the next mass acts upon the discharged ema-

nation and it continues the last half of its journey as a generative charge.

It will, therefore, be seen that the term "downward thrust" has no meaning in Natural law for no force exists in Nature to which such a term can be properly applied.

Negative weight ceases to rise when it reaches an equilibrium position where both forces acting upon it are balanced. In this position, it has no weight in respect to the mass from which it arose nor in respect to the next mass.

A scale put under or over it while in place would register zero.

Positive weight ceases to fall when it has reached an equilibrium position where both forces acting upon it are similarly equalized.

In this position, it also has no weight in respect to the mass into which it has fallen even though that position is not the center of the planet.

Let us consider the ocean.

Each inch in depth is a different density, because of its different potential.

Each part of it is where it belongs and if changed to another altitude would have to change its potential to a proper one for that new level.

No part of it has any weight thrusting down upon top of it for all parts are in equilibrium.

A scale plunged into any part of it would not register weight anywhere for in all parts the pressure in every direction is equalized.

If one were to place a stone, or some more dense substance, in the scales, it would register weight. This weight of the stone would vary exceedingly according to the depth of the liquid at the position of the scales.

The stone would weigh less anywhere in the liquid than at the surface. At a sufficient depth, there would be no weight to the stone. Potential would equalize, volume for volume, somewhere.

At that position, the stone would float and find an orbit parallel to the surface.

Its direction would be anti-clockwise. Its speed would be determined by the resistance of the surrounding pressures.

Its rotation would be determined by the difference between the plus of centripetal force and the minus of centrifugal force at that same level.

As a freely moving body it would become as much a moving part of the solar system

as the moon is; or as any electron of any atom within the planet or external to it is.

The moon above the earth is as much in its proper potential position as the stone deep down under its liquid surface.

If the position of either were disturbed it would return to that position.

The same principle which applied to the speed of revolution or rotation would apply to weight.

The weight of potential out of place is the sum of the difference in power of the two forces acting upon it.

When potential has momentarily found a position where force acts upon it equally from all directions, it is said to be potential in place.

Potential in place has no weight in respect to anything in the universe.

All potential is always changing. Potential in place for this moment would be out of place the next moment if it remained in that position.

All mass in place for the moment is potential out of place for the next moment, and all mass constantly seeks the proper zone for its changing potential.

If these statements are logical, and the facts are in accordance with Nature, then weight is not a property, attribute or quality of substance, but is a dimension of the motion of force. It indicates the difference in preponderance in pounds or grammes of the two forces in an accumulated potential, just as the thermometer registers it in degrees of temperature.

If our planet were a homogeneous liquid each point in it would be in its true potential position and would be as much an equilibrium center of one force, through the unity of the two, as the center of gravity of the planet would be.

There would be no motion whatsoever within the planet until, and unless, some portion of it condensed or expanded, in which case the changed particles would again seek proper weightless positions.

It is necessary to remold the traditional concept of gravitation as a simultaneously acting universal force in which the time element is absent, by understanding that it acts from every point in the universe simultaneously but in accordance with the potential of that point.

Also it is necessary to understand that it is only one half of a double force which

also acts simultaneously and oppositely from every point in the universe.

Also this double acting force has no effect whatsoever of "action at a distance" in the sense which we understand action at a distance to mean.

One mass does not pull or push another mass, no matter what its distance, by what we understand as the attraction of one mass for another, as accounted for in the Newtonian laws.

Each point in the universe regulates the potential of a volume outside of which its influence does not extend except as each volume is bounded by other volumes, all of which act together simultaneously throughout the universe just as a taut chain of any length would move simultaneously with the movement of any one link.

Each point in each volume is as much a similar vortical center as the one point of the inclusive volume, the difference being only that of relative potential and relative preponderance of potential.

Another idea must be inserted here to make this action of the universal force more comprehensible.

The idea of force and the motion of force must be divorced from each other.

Force is an existent and universal cause.

Motion is a non-existent illusion of force.

Universally existent force is non-dimensional. Neither time, distance, temperature weight nor any other dimension alters or affects it one way or another.

All effects of force, as expressed in motion, have dimension and are sequential.

The following laws may make this new idea more clear.

Every point in the universe is the gravitative-radiative center of the universe. Toward, and away from, that point everything in the universe is directed.

Every point in the universe swings around every other point in the universe.

Every point in the universe is the beginning and the ending of a cycle of motion from which all things move and to which all things return.

The universal Force is non-dimensional. Every point in the universe is the same point. The motion of force is dimensional. Every point in the universe of form "created" through the motion of force, is a

dimensional reflection of the One non-dimensional Force.

Think these laws over for a while and ask yourself the following questions while so doing:

Is not every point in the universe a place where condensation can, and does take place?

Is not every point in the universe a place where expansion can, and does take place?

Is there a point in the universe which is not constantly oscillating with the contracting-expanding pulsations of the electro-magnetic life principle which makes of this universe a living universe?

Is there a point anywhere in a solenoid or its field where the power to attract is not equal to the power to repel? In other words, is not every passing point in a solenoid or in the universe, an equilibrium point?

Is not every equilibrium point in the universe a gravitative-radiative center toward which the entire universe is falling and rising in constant adjustment to the changing, universal potential preponderance?

Is not this admittedly endothermic-exothermic sequence an inbreathing-outbreathing, pulsing of the motion of force?

Is not every mass in the universe, whether giant sun, or electron, or man, subjected to this polarizing effect of sequential generative and degenerative preponderance?

And are not all forms of the life which we know as living growing things constantly changing?

Can one not conceive that this sequential, dimensional thing which we call life, is but a reflection of the idea of that thing by the non-dimensional universal thinking Force which is unchanging?

Can one not go farther and conceive of motion as the motive power for manufacturing the ideas of thinking Mind, and of all solids of matter as but the building blocks to give fleeting form to those immortal ideas?

When this viewpoint of gravitation and radiation shall have been reached in which it is thoroughly understood that there is an invisible dimensional control in space for every visible effect of motion, and back of that is a non-dimensional

source in Mind from which all dimensional effects are born, one will then have a better understanding of this mysterious and elusive thing which we have up to now known as gravitation.

It will simplify the process of reasoning regarding all effects of motion if two characteristics of Nature which unintentionally deceive us are constantly borne in mind and used as a test by which to check our conclusions.

One of these effects is dimension.

To remember that dimension is born, as an effect, out of non-dimensional force, which is its cause, is to warn us always of the inherited longing of matter to at least appear to be non-dimensional.

To that end all substance throws off whatever it can that is dimensional to simulate the effect of non-dimension.

It tries to eliminate heat by absorbing the cold of surrounding objects and giving off its heat for absorption by them.

Any excess of charge, weight, potential density or any other dimension it endeavors to its utmost to share with all surrounding dimensional things to simulate the stability of equilibrium.

Substance never succeeds in doing this because the expense of such a simulation is thrust on to the opposite effect from that which it concentrates its deceptive desire upon.

Mercury, for example, in simulating non-motion by a slowing up of its rotation must run faster around the sun to balance it.

A hot object in order to share the normal temperature of its neighbors must do so at the expense of greater density, or a cold one at the expense of less density.

And so on down the line.

The other effect which invariably leads to an endless chain of deceptions, one following upon the other, is that all effects of motion exhibit both of their opposite effects simultaneously under all circumstances.

If an object is heating it must also be cooling in a less degree. It is only preponderantly heating, for heat radiates and radiation cools.

If a mass is expanding it must also be contracting for expansion cools, cold generates and generation contracts.

The trouble which arises from this deceptive two-way action of motion is that science often sees the lesser of these two instead of the greater and ascribes its offices to the lesser.

For example, the tide acts as a brake to slow down the revolution of this planet. That is true, but that is its lesser office, its centripetal or generative one.

Its greater office is its degenerative, or centrifugal one, which is to oblate this planet, along with its kindred centrifugal disintegrators, such as deserts, belts, rings and satellites.

Failure to see the greater of the two opposed offices which each mass in motion is fulfilling led to the conclusion that the earth was once turning very fast and will some day turn very slowly.

This is an unfortunate and confusing conclusion because all masses universally rotate very slowly and revolve very fast, when near their primaries, while those far away do just the reverse.

This orderliness of nature is one of its most self-evident ones.

It is regrettable that science persists in claiming that mass is charged either positively or negatively alone, for when it is ready to admit the double charge of all mass with a preponderance of one or the other in all positions save the amplitude position of the wave, it will then be ready to observe the double office of every mass and the two ways of every dimension of motion.

We say of a man "you are male," and yet we know he is only preponderantly male. We say the same of woman knowing full well that male cells constitute a goodly portion of her biological composition.

To apply the above to our subject is to realize that changing things are changing two ways simultaneously in every dimension in which it is changing.

*Questioning Kepler's First Law

ADDENDUM

KEPLER'S first law tells us that the orbits of the planets are ellipses having the sun in one of their foci.

Is this true?

Is the sun in one focus?

Certainly not the center of the sun, unless the balance of pull of all the planets keeps it there (which is not necessary for a system in equilibrium and therefore improbable.)

What is the one focus referred to by Kepler?

Is it a force?

It is difficult to imagine a planet transcribing an orbit without some force controlling it.

The attraction of gravitation accounts partly for that force and we locate the source of its action at **one** of the two foci of the elliptical orbit of one body around the other.

The focus cannot be the sun except by virtue of the huge mass of the sun in comparison with the planet.

If a planet pulls the sun and the sun pulls the planet the mutual center of gravity of both planet and sun cannot be at the sun's center, but at a point somewhere in a line drawn between the center of both. On account of the sun's huge bulk this point would be near the sun's center but not in the center.

If the sun and planet are both radiating, there must be a point, somewhere on the same line, where the mean repulsive negative force is focussed.

If there is such a point, then that point is the other focus of the elliptical orbit of the planet around the sun.

If it is true that there is another focus to the ellipse of a planetary orbit other than the gravitative focus it is logical to presume that the other focus is also a force.

Is this other focus a repulsive force which registers the relative negative force of magnetic thrust of both masses just as the gravitative focus registers the mu-

tual positive force of gravitative pull of both masses?

It is inconceivable that if one focus compels part of an elliptical orbit the other focus has not an equal purpose and an equal power, otherwise the ellipse could not be a symmetrical one.

In this universe of opposite effects what other could this neglected focus be but an opposite focus with an opposite purpose?

What other opposite to gravitation is there than radiation, or to attraction than repulsion, or to a compressed condition then a vacuous condition? The female focus is as equally important as the male. Without both the unity of a true circular orbit or true spherical form is impossible.

If we hesitate at all in coming to this conclusion, we are reminded of the law which tells us that to every action there is an opposite and equal reaction.

If, however, we wish to test it, as the writer has repeatedly done, it is a simple matter to place a large armature near a small one, with poles parallel, and trace the lines of force to a "neutral point" as the electrical mechanic who assisted in the experiment called it. This "neutral point" was nearer the small armature.

By increasing and decreasing the currents in both generators the relative positions of the concentrative lines of force and the decentrative ones changed with each change of potential.

As the potential of the small generator was raised in pressure and that of the larger one was lowered to a nearer approach to equality the decentration point and concentration point drew nearer together, or to be more exact, the decentration point moved ever nearer to the larger generator.

When both generators were working the gradients of pressure encircled both, with every evidence of a compression focus where lines of force concentrated at a point within the large generator near its center, but toward the small one, and a vacuous focus where the lines of force decentrated.

When but one generator was working

*So many inquiries have come in within a week after the publication of this book regarding the subject matter contained under this heading that it has been deemed necessary to insert this page formerly intended as a part of the next book.

the two foci disappeared. A gradient of pressure then developed in which all points equally distant from one center were equi-potential points.

This proves conclusively that there is a current flowing both ways between any two sources of generating energy.

The discharge of one mass, or of one generator, is an effect of charge upon the other.

It proves also that the difference in potential of each, which means the difference in preponderance of the thrust and pull oscillations of each, is registered at two points situated on a line between the two.

One of these points must be the mean plus equilibrium of both pressures and the other must be the mean minus equilibrium. Somewhere between these two points is the equilibrium pressure from which the plus and minus secured their opposing pressures.

Let us now return to the solar system and apply these findings.

We will ask ourselves another question.

If two masses were the same in every dimension would not both revolve around each other in true circles except for the influence of extraneous masses?

We know that the moon and earth revolve around each other and that the moon is the greater traveller, simply because of the difference in the potential of the two.

It necessarily follows, therefore, that every two masses in our solar system must and do revolve around each other, but inconspicuously so owing to the large bulk of the sun, as compared to the planets, and of the planets as compared to their moons.

The sun does not appear to revolve around the planets, yet it must do so, and it does. There is no way out of an admission of this fact, without eliminating that already admitted effect from lesser primaries and their satellites.

If this is true and that the orbits of revolution are ellipses, as they must be when two unequal forces act on each other, the vacuous focus must be as equally powerful a negative force of expansion as the compressive focus is a positive force of contraction.

If this is true the compressive focus

must measure the average force of the attraction of gravitation of both masses and the vacuous focus must measure their average of the repulsion of radiation.

The sun therefore owes its position as the center of the system, and also as one focus of its planetary orbits, to nothing but its huge relative potential.

It is so vast that it will not dance with its partners. They must do the dancing.

These facts being considered, would it not be more proper to write a universal and complete law, as follows, to replace Kepler's local incomplete first law:

All freely moving masses of different potential in any system revolve around each other in elliptical orbits of which the mutual gravitative center of any two is one focus and the mutual repulsive center is the other.

When the import of this aspect of genero-radiative relationship is understood is it not simple to comprehend the following which is so plain in nature:

Every contracting mass in any system is drawing closer to every other contracting mass in that system, and every expanding mass in any system is extending its distance from every contracting and also from every expanding mass in that system.

Are we not ready now to uncover the fallacy which has given birth to so many hypotheses regarding the formation of this solar system and to so many impossible theories of atomic structure?

What is a so-called system?

A nucleus around which "electrons" or planets, or systems, revolve.

A nucleus is always huge relatively.

How does it become so?

It is the gravitative high pressure positive center of a vortex which preponderantly accumulates energy at its center by generation until the vortex reaches the 90° amplitude position of its wave, then it becomes preponderantly degenerative and distributes that accumulated energy back into space from which it was condensed.

In this process the nucleus is preponderantly positive during its contractive period in which its melting points in the elements are rising.

After the amplitude position of its wave is passed, and the nucleus begins to ex-

pand, and melting points take sudden drops the nucleus is then preponderantly negative.

Why do planets or electrons revolve around nuclei? Is it because the nuclei are made up of positive masses or protons and the orbitally racing companions are negative masses, or electrons?

No. The reason is one of relative potential only; one of size, bulk, great density and high pressure, matched against diminutiveness, low density and low pressure.

Every planet from Mercury out is of lessening density and of lowering potential.

They are all expanding in their respective volumes which lowers their densities. Expansion of orbit keeps pace with lowering density because the two controlling foci which lie between any two masses in the system grow farther apart.

Expanding masses are negative (preponderant being understood).

Our solar system is a positive system because its volume is lessening, even though its negative planets are expanding in both mass and orbit.

Our sun is positive because it is contracting as it nears its amplitude position, dragging all of its planets along with it. When it reaches that position the sun will be a true sphere and all of the planets will rotate and revolve in one plane drawn through the equator of the sun.

After that the system will be a negative system with a negative nucleus, corresponding with nickel as it now corresponds with iron.

It can readily be seen that all theories of atomic structure which are founded on negative electrons revolving around positive protons have no parallel in nature and are pure inventions of experimentors who drew wrongful conclusions from what they thought that they saw.

"But," says the investigators, "we find that electrons are all alike and all are negative."

That conclusion is based on error. Electrons cannot be emitted from any substance by any process employed by man until that substance is overcharged. No substance can be sufficiently overcharged to discharge negative electrons until the discharge has reached amplitude for it

will be found that all electrons are born on amplitude positions on or near the equatorial planes of their primaries.

Electrons are as big and as clumsy things in comparison with lesser corpuscles of their systems as planets are in comparison with atoms.

The smallness of vortices in space is beyond our comprehension. They continue in their smallness until they disappear into the non-dimensional solidity from which, through the illusion of motion, they made their fleeting appearance as changing, dimensional form.

All structural theories regarding atoms are based upon negative electrons revolving around positive protons which form a nucleus.

Our sun must then be a positive proton, or group of protons, and our planets must be electrons.

Mercury and Venus have no satellites but all the others have from one to ten. Each one which has satellites must, therefore, be both a proton, in respect to its satellites, and an electron in respect to the sun.

Also each substance is presumed to change by the addition of another electron. If the sun gave birth to another planet or Jupiter's belts developed into rings and then to more planets, and the outer moons of Jupiter joined the comet group, would it be reasonable to expect the sun's system or Jupiter's to change their composition?

What would we think of an astronomer who set up a claim that one of Jupiter's moons could change to the orbit of another in absolutely no space of time?

All of this fantasy, which rightly belongs to the Middle Ages, is as seriously believed today as the epicycles of Ptolemy were believed ten centuries ago.

Let us now take up very briefly another important matter.

It has been said in another place that every point in the universe is an equilibrium point in reference to the potential of the two forces which are passing each other at that point.

We will now add that every two points in the universe are points of equi-preponderant potential through which currents are flowing in both directions just as they are flowing between the equi-preponderant, but opposed, poles of a storage battery.

By equi-preponderant we mean an equal minus to balance the plus of an equilibrium which exists somewhere between any two chosen points in the universe.

In other words any two points in the universe act exactly as the poles of a bar magnet act.

In other words, the entire universe is polarized into male and female sex divisions in reference to any two points in it.

The maximum of opposed current is always in a line drawn from the gravitative center of a mass and directed toward the next mass of high potential.

The minimum of opposed current is expressed in orbital lanes where potential pressures are more nearly equal.

One may better understand this by holding two copper balls acting as inductors connected by wires between the earth and a 100,000 volt overhead current.

In this position a Geissler tube suspended between the inductors will glow at its maximum by the resistance of the current passing both ways through it toward equilibrium.

If one turns these inductors gradually until they reach an equi-potential position in an orbital plane the light will gradually go out.

It must be thoroughly understood that force divides itself into opposite expressions in motion and proceeds in opposite directions along the curved lanes of this universe of resistance to motion.

It must also be thoroughly understood that there are no two points in the universe where the potential is the same, for all points are moving points and all potential is always changing. Any two such points of theoretically equal potential of this instant are unequal the next instant.

Every distance from every gravitative-radiative center has a difference of potential.

The atoms of matter of "space" are more open and extended and in lower octaves than the atoms of matter which are within our range of observation just as a great part of the spectrum is.

This does not mean that space is empty nor that it has an "ether." It means that our familiar octaves of elements have their more tenuous lower octave counterparts in space.

If it is thoroughly understood that potential is universally variable can it not be understood that no two electrons can be alike any more than two planets are?

Every millionth of an inch away from their source of birth expands them to lower potential unless they approach a region of rising potential, in which case they are no longer negative electrons but positive ions, or corpuscles, or protons, or whatever name is appropriate.

When any small mass is emitted from any large mass its potential lowers relatively faster than that of its primary and their mutual gravitative and repellative foci extend rapidly.

A mass thus emitted and its density thereby lowered sufficiently to develop extended foci, is of negative weight as compared with its primary and can never fall back again into the primary.

Planets and moons are supposedly swung around suns like weights on elastic strings of gravity. The faster they swing the farther out they fly, and if their speeds were increased they would fly off tangentially into space. Conversely, any slowing up would supposedly assist their falling into their primaries.

Unfortunately for this traditional belief Nature doesn't work that way. It acts in just the reverse manner. As planets slow up they go farther out into the system where Pluto jogs along at the pace of an airplane. The position of greatest speed is the innermost one where Mercury races at thirty miles to the minute.

The reason is obvious and the proofs in astronomical measurements, electrical practice and physics are uncountable. Acceleration of orbital momentum generates. It is a centripetal effect of contraction. Deceleration degenerates. It is a centrifugal effect. In axial momentum the reverse holds true.

If an armature is speeded up in a motor generator each given potential moves closer to its core and its lines of form multiply. If the planets of a system were speeded up they would do likewise. They would have to in order to cover equal areas in equal time. Falling bodies accelerate in the same ratio (inverse) as speeding orbits contract, and for the same reason. Rising bodies decelerate in direct ratio for the same reason.

This is the underlying principle of both greater density and surface tension pressure as we shall see later on in succeeding volumes.

Two-Way Consciousness

A Brief Story of Creation

IT MIGHT be well at this juncture to interpolate a very brief digest of the principle of the unity of *Force.

If one can conceive of One Force dividing itself into the appearance of two opposite forces, each force departing from the other in opposite directions and running around in circles, passing each other half-way, one would get the first step of the concept of Creation.

We will name these forces male and female, or positive and negative, or genero-active and radio-active, or electricity and magnetism, or gravitation and radiation, or attraction and repulsion, or life and death, or composing and decomposing, or generation and degeneration, or integrating and disintegrating, or cold and heat, or any other names of opposites one can think of.

One cannot think of any two opposite names which could not appropriately be added in these two columns.

For the second step, one must consider that the One Force had a purpose in so dividing itself other than just to create a mechanistic universe.

To avoid long philosophical and scientific discussions let us describe this purpose as the idea of a Creative Force desiring to express the images of ideas thought out by it into the forms of those ideas. Just as man must build a machine to produce his ideas in vast quantities, so must the Universal One Force do the same thing.

More simply still, it is the desire to bring form and the dimensions of form out of a dimensionless void by that quality of thinking that we call imagination.

The result of force and motion is an orderly and symmetrical universe in which every effect is balanced by a perfect mechanistic plan in which there is no waste and no loss.

It is impossible to conceive of so marvelous a plan coming into being automati-

*See "The Universal One" for its extended principles.

cally. There must be an Intelligence back of and within it, a Supreme Intelligence.

This creating universe of form must be the concept of a MIND Force, an indestructible and universal One Thing.

No matter by what name one may call this Force, it is there, must be there. And it must be living, perpetually living, and perpetually thinking, for every manifestation of its force is repeated in the images created by it.

Also every part of it must be a part of itself for there is nothing, can be nothing, in the universe outside of itself.

Further than that every manifestation of its thinking process is repeated in every growing thing, and all things are growing things.

Further still, this universe of motion must be a continuing one, and every manifestation of its force must be continuous.

Also it must be a simple force for its cause and its plan are simple.

Out of great simplicity of the two way expression of One Force comes the evolution of one form, the sphere, and the very few motives which we see in the octaves of the elements.

From the complexing of these few motives, and the dissection of its one form Nature invents such an amazing array of seemingly different patterns and effects that we are deceived into believing that the universe is composed of an endless array of many things.

All creating things, however, keep a record of their own complexing through their connection with their spatial pole in that mechanical compression-expansion pump, with which all mass is endowed, which we call breathing.

All mass breathes. It inhales and exhales in unison with the frequencies of its potential position in the dimensional universe of the motion of force.

The universe has not been created, it is creating by a thinking Force, which destroys that which it is creating in a man-

ner which keeps a perfect balance between composing and decomposing ideas.

Newly born ideas are given a preponderance of life during a generative period, which is maximum at maturity, while death is given its preponderance in degenerating things.

Death does not mean discontinuance, for no idea discontinues. Death means disappearance; just an interval between that and reappearance.

This is a repetitive universe of continuing things. There is always a gap in every cycle of motion, when expanding things get beyond our physical range of perception, but they come back again within it always.

The Universal One was written to show by this two-way plan of the One Force that the only thing created is form, and the only form created is the sphere. The sphere is the ultimate result of all action. Within the sphere all other forms are included.

It also traced the fact that form is an illusion of motion which changed continually in that orderliness which we call growth and evolution.

Growing things appear from invisibility, grow to a maximum of perfection in maturity, and disappear into invisibility.

Every effect of motion appears in every high potential and disappears in every low potential in this universe.

Invisibility does not mean discontinuance. It means only that temporary disappearance which follows every appearance and which is, in its turn, followed by reappearance.

If we question our thinking process, we will find that ideas generate in the same manner, grow to a maximum and then degenerate because of fatigue into disappearance.

If we fit the mechanics of life and death to this process, it will be found to correspond exactly.

The conclusion drawn is that all forms are the ideas thought out by the Creative Force and that force and motion are tools used in fashioning its ideas as a sculptor's tools mould the sculptor's idea. If this conclusion is logical, creation is but a concept of dimensional form and has no real existence. It has only an appearance of existence as an illusion of motion.

The evidence of this two-way divine plan of mechanics proves that all "created" forms are but reflections in a mirror which we call Nature, of the ideas conceived by the One Thinking Force which could more appropriately be called MIND than by any other name.

Mind, then, is the only existant reality in this universe of changing things.

Let us now build up this orderly mechanistic process from a hypothetical beginning and superimpose one idea upon another in progressive steps until the picture is completed.

An action takes place which has for its intent the gathering of the outer void to one point by a pulling inward from within pumping oscillation.

Non-dimension now becomes dimensional because direction has been created, the inward direction toward density.

This action causes another effect to take place simultaneously. The inward pull is resisted by a reaction of thrusting outward that which was gathered in.

The One Force can not create form by pumping the entire homogeneity of its equilibrium into an unstable or unbalanced single solid form, because the desire to do that sets up a resistant desire to oppose the doing of that thing.

We now have three things to consider; first, the pulling inward charging force which approaches itself only because it focuses on a point; second, the thrusting outward discharging force which departs from not only the other force but from itself, because it spreads itself out into a larger area; and third, a quality of resistance which belongs equally to both forces.

Now we come to the third step. After finding that 100% of the One Force is divided into 50% each of an action and reaction force, the action force, which we will now name the electro-generative force, finds that it has the advantage of its opposed magneto-radiative force in the fact that its 50% pulls half of the energy of whole tenuous volumes occupying thousands of millions of cubic miles into small dense volumes so infinitesimal in comparison with the whole that each one might be compared to a single speck of dust in the center of an armory.

This is just what the generative force

desires to do and a thorough comprehension of this most important step in the scheme of creation is absolutely necessary in order to understand the advantage that the generative force has over the degenerative in the struggle for supremacy.

Consider it for a moment.

One half of a total quantum of energy accumulates at the exact centre of a volume so vast that its particles are hundreds of millions of times closer together than the particles of the other half.

What is the result?

"Solids" of high potential and high inductivity become insulated from each other throughout the universe by low potential fields of low conductivity.

Out of "space" the generative force has pulled whirling vortices into gravitation centers, to accumulate energy into high pressure centers which we call solids.

Back again into space, the degenerative force pushes this accumulated energy by that process which we know as radiation.

What an inconceivably great advantage the generative force has over its equally strong opponent can be best realized by comparing the energy locked up in a ton of coal with an equal quantum of energy in fully expanded water vapor miles above the earth.

It is the advantage of concentration over deceneration.

It is as though one half of New York City's population were spread out over the continent, each one ten miles from his nearest neighbor, and put into business competition with the other four millions who are all concentrated in a space equal to that occupied by only four of the decenerated half.

We are now ready to consider the next step, a vastly important step which we will designate as relative preponderance.

This idea of preponderance of opposite effects present in every mass has been stoutly denied.

In all electric practice a mass is considered either positively or negatively "charged." Such a possibility as both charges being present in every mass is not considered in modern science.

We shall not only see how absolutely necessary it is to a continuing universe but how evident it is in Nature which plainly tells us that the universe is not

running down to zero but is winding up as fast as it is running down.

Radio-activity and genero-activity are each exactly fifty per cent of the whole.

Let us then once more accentuate the fact of relative volume and realize that the two equal forces are divided, one into a very large volume of the same amount of energy spread out into what we call low potential, the other equal half packed closely into a small volume of high potential.

Let us add one more two-way idea to the plan which we will call expansion pressure (which is the negative direction toward low pressure), and contraction pressure (which is the positive direction toward high pressure).

Let us connect the maximum low and maximum high positions of these two opposite pressures with pistons to get the driving force of the universal machine.

The machine itself is made up of two sets of pairs of wheels, all geared together, each pair cross-geared so that each set is turning in opposite directions, and graded in sizes from large slowly turning ones, to small ones which turn 186,400 times per second.

These sets are so arranged that the smallest is next to the biggest in each set at one end of the piston while at the other end, which is the middle of the cycle, both sets of wheels are exactly the same size.

To understand why the little wheels are next to the big wheels in each case, it is necessary to understand that the One Force discovered that it could not send each entire half of its energy in opposite directions around the cycle, so each had to lose a little to the other in a series of progressive preponderances and take them around the cycle with them in pairs of effects instead of as single effects.

We will come back to this idea again shortly.

Let us now briefly interpolate another idea, the idea of time, and the balance of time in its two directions. Positive time, which is generative, in proceeding in the inductive direction, must accelerate in order that small volume may sweep over areas equal to areas swept over by large volume. In the opposite direction, negative time, which is degenerative, must de-

celerate to keep a balance of all dimensions.

That is why all opposites must be in pairs and why all but the two sets of pairs half way round the cycle have different sized wheels.

Consider the time element in rotation and revolution for example. They are one set of pairs.

Mercury must revolve very fast to sweep out areas equal to Jupiter's, in proportion to their relative potentials, and Jupiter must travel very slowly in order to keep from getting ahead.

On the other hand, Jupiter must rotate extremely fast to balance Mercury's slow rotation.

We are ready now for the next step which should be anticipated because it is so logical.

The electro-gravitative force does not keep on attracting new energy into its vortex forever for the energy in its respective volume of influence would be used up.

To restore the supply, the radiated energy, which was exhaled from the generated solid into the vast field surrounding it, bends around gradually to an equilibrium position where both opposing forces are even enough to neutralize each other. At this low pressure position the radiated energy stops expanding, and contracts as it bends in a slow gradual spiral curve within the intake of the electro-generative inhalation.

Now, we are at the fifth step of this progression with a realization that a repetitive cycle of a series of two opposing dimensions has been perfected as a mechanistic means of bringing form of varying densities into the universe.

We now have positive spiral pressure curves, which we call "centripetal force," and we have negative spiral pressure curves which we call "centrifugal force."

All energy must travel along those two curves no matter whether that energy is an invisible flux or a visible solid.

Because of the spiral concept in a curved universe one must conceive of spiral gears and many eccentricities added to the universal machine.

This concept is necessary in order to understand the orderly progression of an effect which is known as crystallization.

This intricate and extremely complex idea cannot be more than touched upon here but the simplicity of its fundamental basis is so plainly written in Nature that its complexities cannot elude one who understands the universal plan.

To put it briefly Nature is aiming at the true sphere in all her gyroscopic turnings.

She finishes her sphere only in one part of the universal machine which is half way around the cycle where the wheels are the same size. In the wave this position is at trough and crest.

At this position an element called carbon crystallizes in true cube. It is the only element which does crystalize in absolutely symmetrical true cube because it is the pivotal point of ten efforts of Nature to get her two halves equally divided to equal opposites.

These ten waves are what are known as the octaves of the elements. The octaves are spiral waves along which the elements are strung like discs on a string. As a matter of fact, the elements are the wheels of the universal machine and the reason for this variance in form, eccentricities, gearing and crystallization is because they all are parts of a sphere within which all separate parts fit together.

In carbon the nucleus of the atom is a true sphere, but in no other atom is there a true sphere.

All other atoms only approximate the sphere and then only in passing the amplitude positions of their waves where both sets of wheels of the universal machine are the same size.

The ten octaves constitute a complete cycle of all effects of motion, of which the first half overlaps the last half of the last octave. This makes carbon the pivotal point of the cycle.

In the beginning of the cycle all generative dimensions correspond exactly to the radiative dimensions of the overlapping end.

Radio-active emanations of the elements at the end of the cycle have the speed of light in their return to space. Genero-active corpuscles have exactly the same speed as they begin their journey from the unseen universe into the visible range.

Of the ten waves only five and not quite a half are within the visible or perceptible range.

The rest are beyond perception as elements but their existence is clearly indicated in the spectra of all other elements.

I pointed out the fact in my first book that spectrum lines were letters and words of a universal language of light which plainly recorded all effects of motion, and asked science to read each spectrum as cumulative history and not as an individual record of each element.

I stated that light was Nature's means of communication between the spatial controls of her invisible universe and the poles of her universe of form.

The language of light is as legible and as orderly as our written and spoken language. Its pressure symbols have as definite a meaning as our alphabetical symbols, or as the dots and dashes of our telegraphic code.

They all have their relations in the spectrum cycle of varying pressures.

Much of this language has been available to science for many years, through spectroscopic pressure lines, but science has translated each set of pressure lines as belonging to one unit or one element. Science has not realized that each element contains within it all of the other elements, just as this planet, which is an "electron" of an element, contains all of the other elements within it, being just preponderantly one element.

All of the language of light is comprehensible to the inner Minds of all men when they learn how to connect up with the spatial controls of their real selves, of which their bodies and brains are but temporary and periodic extensions.

I stated that all of the elements of the entire cycle are within each other and that by making allowance for the changing pressures of each succeeding octave the history of the past could be clearly deciphered.

Future history cannot be so deciphered because unevolved elements exist only in potentiality within the evolved ones, just as the full oak exists potentially within the seed of the oak, and in the wave dimensions of the growing oak sapling.

This idea of the existence of "patterns" of all evolving things recorded in wave dimensions and locked up in the inert gases until the time of their regeneration was ridiculed by a scientific world which was

not then ready to consider a continuing universe of motion even though I pointed out very clearly the history of the evolution of iron from its beginning in the unseen universe up to its present position in its cycle in its spectrum lines.

When science is fully willing to accept the continuity of all effects of motion the roads within the unseen universe will be as clearly posted as the Lincoln Highway.

I also pointed out the clearly evident fact that hydrogen, carbon, silicon and the other overtone elements born on the amplitude positions of their waves, were not single elements but were complex ones. Each one of these contains seven full tones within it and in the case of carbon and silicon many split tones of new metals of great value to industry can be secured by understanding Nature's simple principles.

Carbon metal, for example, will have a tensile strength of over three hundred thousand pounds. Silicon steel will become an ideal structural steel of more than double the present tensile strength, and very much cheaper because of the unlimited supply of sand as compared to iron ore.

By understanding Nature's method of acquiring density, industry can at least double the density of any metal.

Nature knows how to compact her atoms so that a cubic inch weighs a ton. Man has all the electric power at his disposal that Nature has but he has not yet observed how Nature contracts her atoms. He has not even believed that Nature is genero-active so he has been content with expanding her atoms, then letting them freeze as they will instead of as he wills.

When he is willing to accept the idea of the universe as a complexity of solenoid coils of varying dimensions which exert their influence two ways simultaneously, and that every radio-active effect of expansion is simultaneously accompanied by a genero-active effect of contraction, he will then command nature to give him greater density in the materials furnished him by her for his use, instead of passively taking them as created and unalterable finalities.

We are close to the day when industry will have this knowledge of now unbeliev-

able densities and the advantage of transmutation of one substance into another.

Both of these effects of motion are attainable only through knowledge of the wave and of the laws of polarization.

Before that day comes, however, science must comprehend the great simplicity of Nature's plan and eliminate the inconsistent and unworkable complexities of her many theories which have no precedents in Nature.

Nature's entire simple plan is written in each and every individual wave. To know the mechanics of the wave is to know the entire secret of Nature.

We are now ready for another idea, the idea of orbit, along the spiral path of which all energy must be pumped centripetally into a vortex, to create the forms of the images of universal idea, or out of it, centrifugally, to tear those forms apart.

This introduces a new idea into the concept which we call "polarity" for polarity and orbit are as indissolubly linked together as light and color are.

Like the crystallization idea, this very important part of the machine is too involved and intricate to explain in so limited a space. It requires a volume in itself.

However, it is sufficient for the moment to say that all mass is one mass in the sense that it is connected together through its electric and its magnetic poles, which we only know as magnetic poles as though both were alike. They are not alike, for they are opposites, having opposite effects and opposite offices. They work two ways as all other effects and all other dimensions do.

These poles act as regulators to keep each mass in the universe in its proper position in respect to all other masses, to keep its proper density in respect to other mass, and to keep all other relative dimensions properly adjusted.

They are the rudders which steer each mass and the gyroscope control which keeps each mass revolving in its true plane.

They also act as wireless connections to keep the entire universe informed of every changing event.

These poles are so perfect in their workings, and so sensitive, that if a child throws a ball on this planet, every mass in the

universe adjusts itself immediately to the changing position of that ball.

The element of time does not enter into this effect of motion for it is universally simultaneous.

Every mass in every system has an orderly and progressive change of position for its poles which are controlled from space by like poles, of which they are but the extensions.

The spatial poles are also extensions of an infinite number of extensions which have their focal point in the One universal equilibrium from which all polarized force extends as the appearance of two forces.

One extension of the divided One Force controls all of the charging effects which accumulates energy gravitatively, by employing that centripetal, contractive attribute which is the electric endothermic inhalation of the One Force, the other extension controls all of the discharging effects which distributes energy radiationally, by employing that centrifugal expansive attribute which is the magnetic, exothermic exhalation of the living One Force.

The function of poles is to create and to destroy things simultaneously in an orderliness of preponderance which we call "growth."

They are opposites, with separate functions, separate effects and separate directions.

If they come together anywhere in the universe they destroy each other.

It is the greatest error of science to be deceived by this desire of mutual annihilation into concluding that they attract each other.

How perfectly these polarized extensions of the universal One Force carry out the orders of the thinking Mind back of them will be told in much detail of formulae and description in other writings.

Before passing this subject, however, let us give thought to the fact that every operative machine of man's is polarized while in action by some mechanical force which alternately exerts expansion and compression power in alternating sequences.

All electrically operated, steam driven, hydraulic and air pressure machines have positive and negative connections for

pumping the compression and expansion plus and minus forces through them.

These connections are the poles of the machine which will work when the polarizing force runs through them and are dead otherwise.

Just as workable machines can be considered as extensions of men's minds, for they do what man wills them to do and perform the acts for which purpose he created them, so may all corpuscles of matter be considered as extensions or reflections of the Mind Force doing what it wills them to do.

Mind Force created these "machines" just as human mind force created its machines, solely for the mutual purpose of giving expression to ideas thought out by Mind.

The polarized points of matter are the visible electrodes connecting Nature's wireless current of divided Force with the extensions of that Force in space to keep them working.

In the same sense men's brains are but material extensions of the universal thinking Mind Force.

As long as one's brain remains polarized, and works in unison with every polarized mass which constitutes that very large community which he thinks of as himself alone, just so long will his brain function as a current carrier of the universal Force.

He is directly connected with its unlimited supply to use when and as he knows how to use it.

Not one corpuscle in this universe is independent of its connection with the universal Force during its entire repetitive cycles between appearance, disappearance and reappearance.

These space controls between large masses, although invisible, can be located mathematically and this knowledge will greatly aid the astronomer in retracing the path of our solar system through the ages gone by, and its future path.

I have already located its present position in its wave as corresponding to that occupied by iron in the elements.

It is not, however, a celestial atom of iron as first calculations indicated, for it has not yet reached the octave in its cycle occupied by iron.

It is in the plane of iron but in the carbon octave, between boron and carbon.

As polarity measures the intensity of preponderance between charge and discharge exactly as weight measures the difference between thrust and pull (which mean the same thing) polarity is zero in any equilibrium and maximum in the instability which immediately precedes the amplitude position of a wave, or in the oblateness of the nearly perfect sphere.

It would be extremely difficult for science to calculate the exact longitude of these poles on an oblate planet but it would be a simple thing to calculate their latitudes, or their distances from its pole of rotation, if the inclination of that pole to the solar equator and the oblateness of the planet are known.

When a sun or planet is a true sphere the magnetic poles disappear in the pole of rotation and will not again reappear until oblateness begins again at the degenerate half of the cycle of that particular mass.

We are now where we must add another two-way dimension through which the universal messages are taken, the magnetic field.

A two-way conscious person would properly name it the electro-magnetic field, for that part of it which pulls inward toward concentrating or condensing mass is electric. The effect which this positive dimension causes, we call "gravitation."

On the contrary that part of the field which pushes outward toward vacuity is the negative field, which is magnetic, or dissipative. We call this effect "radiation."

It is common knowledge that a coil of wire carrying many turns will step energy up or down according to the direction of the current.

Imagine a spherical volume of energy, cut through the middle as an orange is halved.

If you could see the electric spiral turns, they would look like a spiral vortex of many wires, close together and well defined near the center until lost suddenly in what one calls a solid. In this they become apparently fused.

The outer ends of the spiral are very broad bands of increasingly foggy indefiniteness.

If one could see such an effect one could understand Nature's solenoid principle of stepping energy up and down.

Let us now introduce another idea as the next step, the idea of mathematical relations, or universal ratios.

The solid mass of high potential, being a known fifty per cent and its field fifty per cent, makes it possible to estimate other dimensions.

For example, if the solid mass is fifty per cent, and we know that the inward pull is exactly equal to the outward pull we then know that exactly twenty-five per cent of each force is exerted in each direction within the high potential solid, and that the other twenty-five per cent of each force is passing in opposite directions within the low potential field.

The following fundamental laws governing mathematical relations will briefly convey the idea of the principles governing universal ratios which is in every effect of motion the direct and inverse square of the distance area or time dimensions and the cube of volume or potential dimensions. The direct and the inverse are the two way indicators of direction, the latter belonging to gravitational and the former to radiational effects.

The energy of the volume in an electromagnetic field surrounding a mass is equal to the energy in that mass.

All dimensions contract in the direction of electric force and expand in the direction of magnetic force in universal ratio.

Every effort of motion which is added to any expression of one force must be equally subtracted from any expression of the opposite force.

Every plus pressure total must be balanced by a minus one to maintain a system in equilibrium.

All dimensions simultaneously expand and contract in opposite directions of the same ratio.

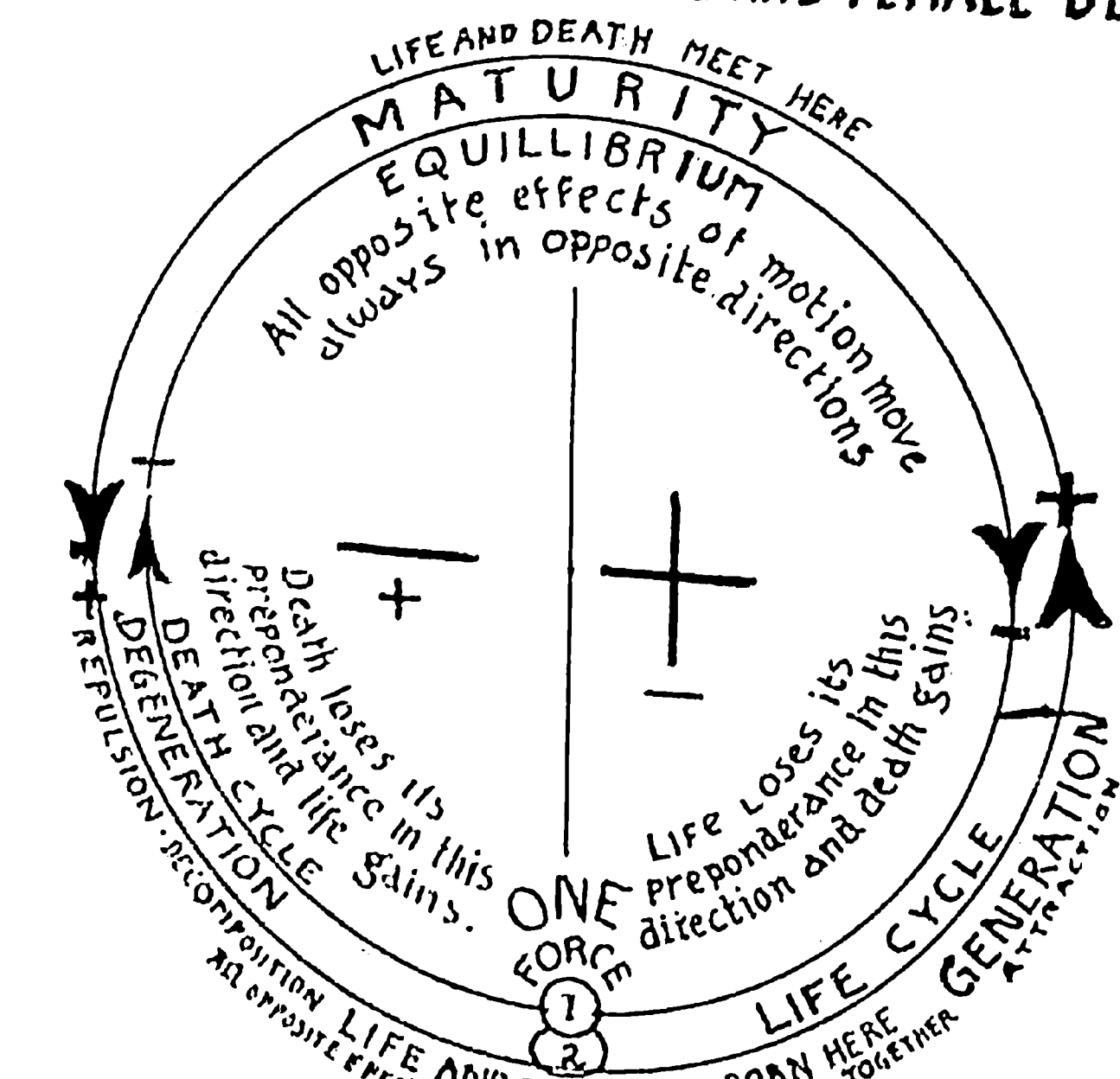
Expansion pressure is in direct ratio to the square of the distance, area, plane, orbit or time unit, and to the cube of the volume.

Contraction pressure is in inverse ratio to the square of the distance, area, plane orbit or time unit, and to the cube of the volume.

Every mass in the universe occupies a measurable potentiation position.

Every generative effect of motion begins its cycle at its maximum in the region of lowest pressure, loses one half of every dimension of it at the high pressure point of its cycle wave, and exhausts its effect at the place of its beginning.

ALL THINGS ARE BOTH MALE AND FEMALE BEING ONE OR THE OTHER ONLY IN PREPONDERANCE



ALL EFFECTS OF MOTION OBEY THIS UNIVERSAL RYTHMIC CYCLIC LAW OF ORDERLY PREPONDERANCES

FIGURE 11

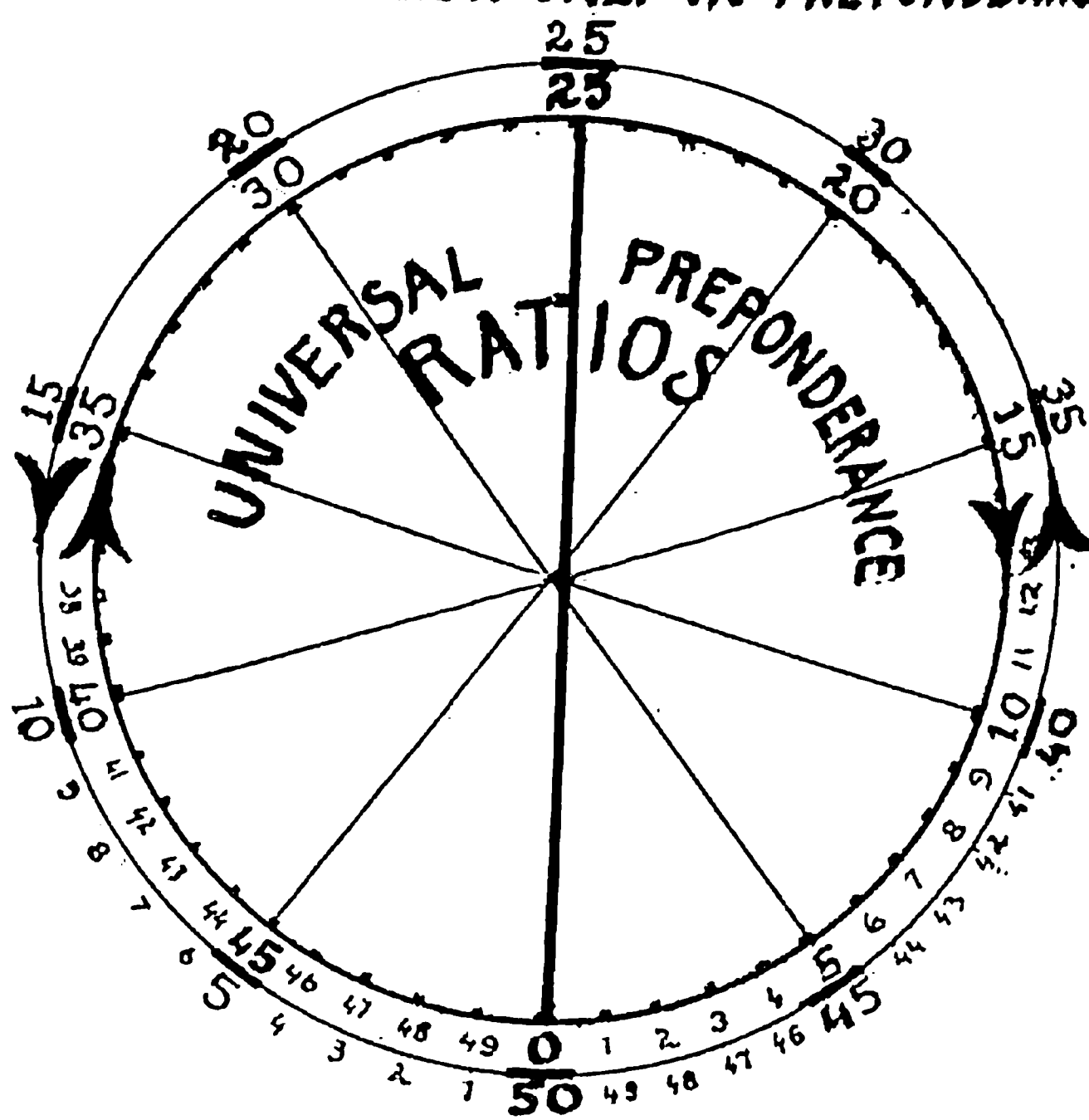


FIGURE 12

Every radiative effect of motion begins its cycle at its minimum in the region of the lowest pressure, gains one-half of every dimension of it at the high pressure point of its cycle wave, and attains its maximum at the place of its ending.

These last two laws lead us to a comprehension of the orderliness of preponderance.

Let us consider the cycle of life and death, which includes that element of time called growth as well as all other dimensions.

Figure 11 illustrates preponderant life and diminutive death born in the same cradle and preponderant death and life parting company at the grave.

If one will closely study Figure 12, it will be clearly seen that in whichever direction one force proceeds or gains in preponderance the other goes in the opposite direction and equally loses its preponderance.

At every opposite end of any radius drawn through this cycle in any direction, the quantum of each force, if added together, would always exactly equal one half of the whole quantum of force.

If the preponderance and its lesser opposite, at either end of the radius at any point in the circle, were added together the whole quantum would also equal one half of the force.

It can readily be understood that the sum total of the two halves of the force added together will be the whole quantum of the One Force.

This being understood, the fundamental law of physics which says that "every action is accompanied by an equal and opposite reaction" is thoroughly accounted for.

We are now ready to observe carefully the passing point of both forces. At this point and only at this point both forces are equal in their opposition.

Still remembering that this half way point of life's maturity is one end of a radius, and recalling that the other end is where life began and death ended, it can readily be understood that these equal opposites differ from the equal totals of opposites at the ends of radii which cross the circle in any other than this direction.

These two positions represent stability. All other positions are unstable positions.

Figure 12 suggests the orderliness of all effects of motion for all add to one hundred per cent in every variation of preponderances as well as at the equilibrium points.

At the two stable points in the mechanics of the universe which are dead centers, force does not appear to exist and the motion of force ceases. The motion of inertia or impulse gained from force when force acted upon it is the only motion at these two stable points and this motion carries through to the beginning of instability on another round of the cycle.

At either of these two constantly shifting points, potential is equalized and weight is non-existent.

Every freely floating mass in the universe, whether an electron of an atomic system or a planet of a solar system, is assembled around one of these points and pivots around it.

All freely floating masses in the universe are assembled around a mutual gravitative point in space and pivot around it in orbits determined by a mutual radiative point in space.

Every two freely floating masses in the universe have polarization points in space around one of which they both pivot in an orbit determined by the repulsion strength of the other.

If the moon and the earth were the same in all dimensions, they would pivot around a low pressure point midway between them, while the point itself would describe a circular orbit around the sun carrying with it the two gyrating partners in a celestial dance.

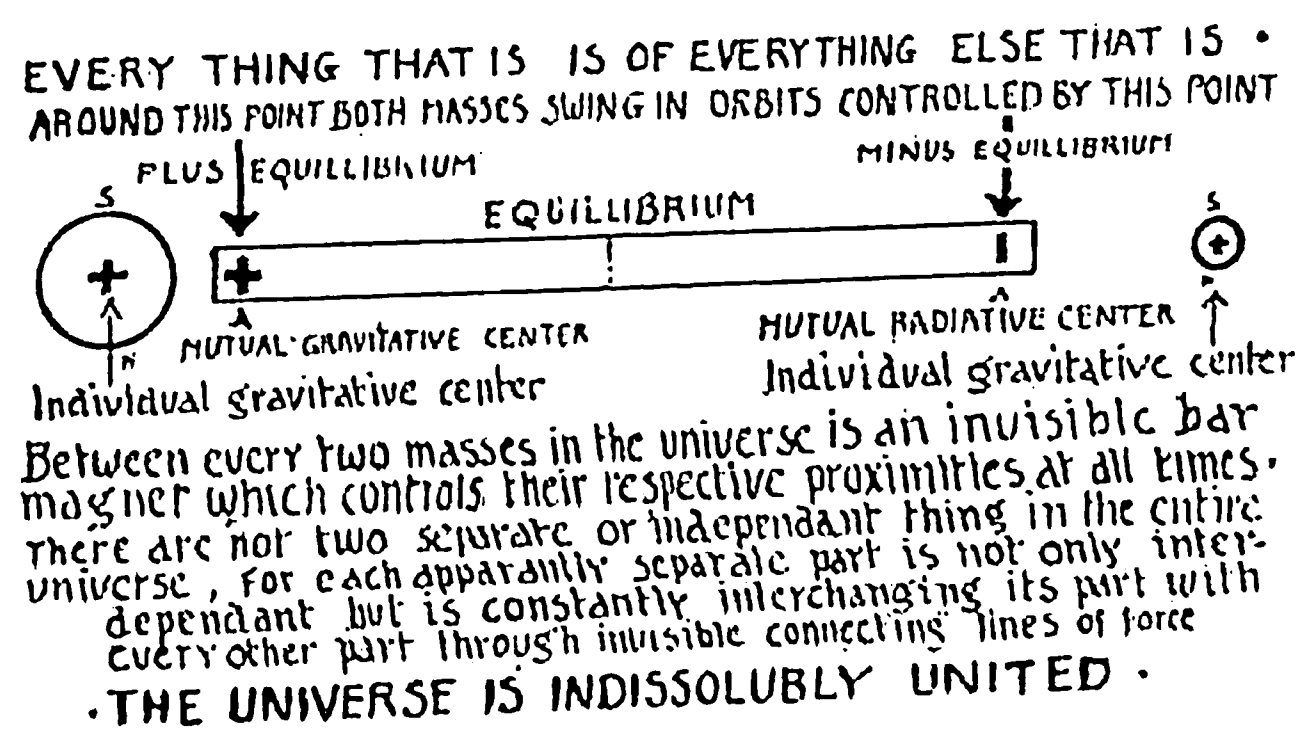


FIGURE 13

Electrons, planets and satellites which revolve around their primaries, do not do so because of the gravitative pull of said primaries plus the mythical and mysterious "initial impetus."

They all pivot around their mutual high pressure points in orbits determined by the thrusting, repulsive power of their low pressure points which hold each one at arm's length.

The only reason why small ones are apparently governed by larger ones is a question of relative density and mass.

The heavy dense bodies swing the light ones as a heavy partner in a dance would swing his light partner, and naturally the low pressure points would keep pace with the dance, keeping ever between them, exerting always their centrifugal thrusting power like a weight swung at the end of a string.

The office of low pressure points or radiative centers is purely dissipative. Its force is centrifugal and its process is fast rotation and slow revolution. It shortens the day into disappearance and likewise lengthens the year.

The office of gravitative centers is solely to accumulate, its force is centripetal and its process is retarded rotation and speedy revolution. It lengthens the day into disappearance and likewise shortens the year.

If these effects of motion are true to Nature's practice, it is wrong to say that centripetal force attracts centrifugal force, which is the equivalent of saying that charge attracts discharge.

Let us consider the life and death cycle of motion.

At the zero-fifty point where life and death are born in the same cradle, life starts in one direction as fifty and death in the other as zero.

When life has gone to the forty-nine position death has scored one in the opposite direction, and so on till they meet at life's maturity where life and growth are half gone and death begins to assume preponderance.

If one is confused by the comparison of infancy and maturity in relation to relative strength, and feels that the strong man of forty is much stronger generatively than the infant, he must remember that energy has been stepped up to that point, and though he is apparently more generative he is in reality just half as generative. His voltage alone has been changed.

Also half of life is gone and half of death has overtaken him.

From that point on his energy steps down, for death assumes control.

By referring to one of the above laws, one may see that the genero-active corpuscles at the zero-fifty position would, for example, have a speed of 186,000 miles a second while radio-active emanations would be zero. Radium, for example, is nearly around the cycle where its emanations register about 180,000 miles. On the contrary, sodium which is just newly born is only slightly radio-active.

The last idea that will add to this structure is the idea of temperature, as known by the words heat and cold.

Heat is so generally misunderstood that it is necessary to correct wrongful impressions and fit it in to the universal machine where it belongs.

Heat is purely a dimension of energy just as a pound or an ampere are.

The common and accepted premise which says that "heat is a form of energy" is an error.

If the thermometer registers 72 degrees "of heat" it means just what the yard stick means when it registers eleven inches of distance, or what the scales means when it registers five pounds of excess potential.

Weight in pounds is not a "form of energy." It is the substance which is the energy and it is the excess of potential which is the weight. Weight is its measure as the degree of heat is a measure.

Nor is it proper to say that cold is less heat.

Cold is the positive or generative direction of this two-way dimension of which heat is the negative or radiative direction.

The universe is cyclic. All effects of motion in the cycle change.

Heat and cold are dimensions which register the temperature changes at every position of the cycle.

The temperature cycle herein follows. By studying it, one may see that this is a continuing universe, and that every atom in it is continuous.

The author's book from which these extracts were rewritten was based on the continuous atom and, when written, the world of science accepted only the discontinuous atom and the running down universe of wasting, radiant energy.

Cold generates
Generating bodies attract
Attracting bodies contract
Contracting bodies heat

Heating bodies radiate
Radiating bodies repel
Repelling bodies expand
Expanding bodies cool

Thus the cycle of opposition is completed. One effect of motion is always followed by its opposite.

Like all opposites heat and cold are born with and of each other.

The old formula to which we are accustomed reads: "Cold contracts, contraction heats, heat expands, and expansion cools."

This leaves the cycle incomplete because of the omission of that which makes this universe a creating or evolving one.

Cold does not contract. Cold generates electric force.

Electricity is the attractive force and it is electric generation which contracts. It is proper to say that expanding bodies cool and that cooling bodies contract, but not that cold contracts.

Conversely, heat does not expand. Heat radiates magnetic force.

Magnetism is the separative force and it is the separative force of radiation which expands.

It is proper to say that contracting bodies heat and that heating bodies expand, but not that heat expands.

Discharging and discharged bodies cool.
Cooling bodies generate.

Generating bodies draw closer to each other. They attract.

Generation heats through resistance to generation.

Heating under pressure is nature's method of assembling mass.

Heating is nature's process of moulding form.

Cooling is nature's process of complexing form.

All form is simplified by heating.

All form becomes complex by cooling.
The sun shapes the world to its own form.

The sun shapes her melted planets and satellites into spheres, the simplest of forms and puts them out to cool. Thus they begin their complexing.

All planets or satellites are born at the equatorial belts of their primaries and end their careers, or what little is left of them, at their primaries' poles.

the masses follow the new pressure gradients and draw closer together.

Contraction of volume is Nature's process of integration.

Proximity of high pressure points in solids increases the potential of their fields and thus compacts their low pressure pivotal points against a terrific resistance for it must be remembered that all oppositely polarized nucleae desire extension and exert their utmost to put distance between them.

This effect can be best observed in a bar magnet which will extend its opposed poles to infinity if given the slightest chance either by contact or by induction across a gap. In the face of this fact science claims that positive and negative attract. If they do attract why are not the opposed poles together in the middle of the bar?

Science is deceived by an illusion.

The north pole of a bar magnet will destroy itself and the south pole of another piece of polarized metal in order to extend itself to the other end of the added metal. The south pole will do likewise to the added north.

Approaching bodies mutually heat.

Heating bodies charge. Charging bodies raise potential.

If this law is well founded then heat, charging bodies and the attraction of gravitation must be related. Also positive charge must attract positive charge.

Heating bodies radiate. Radiating bodies repel all other bodies.

Receding bodies mutually cool.

Radiation cools both the radiating body and its emanation.

Cooling bodies discharge. Discharging bodies lower potential.

If this law is well founded then cold,

discharging bodies and the repulsion of radiation must be related. Also negative discharge must repel both negative discharge and positive charge.

Discharging bodies contract and contracting bodies heat.

The re-heating of degenerating bodies by contraction is nature's process of regeneration.

Heat emanates from heated bodies. Radiation lowers pressure and potential of radiating and ejected bodies and their emanations.

Radiating and radiated bodies seek equilibrium positions in lower pressure zones appropriate to their lowered potentials.

Radiation of heat is nature's process of solidifying integrated substances of cooling bodies into locked potential positions.

Radiation expands and the consequent regeneration condenses, or freezes, the emanations expelled from radiating bodies. It also cools the radiating body, thus regenerating it also.

Expansion disintegrates.

Disintegration is Nature's process of redistribution.

Disintegration freezes radiating and radiated bodies.

Freezing is Nature's process of effecting rigidity in radiating bodies and beginning the repetition of the same process in emanated bodies.

Radiation is discharge.

One could continue indefinitely to set down these effects of motion and name each pair of opposite effects as more inductive or conductive effects.

The conclusion to be drawn from the foregoing is that the universe of motion is simple, orderly and symmetrical instead of complex, disorderly and distorted.

VI Einstein's Gravitational Hypothesis

ONE of our most celebrated physicists has advanced the idea that gravitation is not a force of Nature, but a property of space-time.

This is a grave error which should be corrected at this time lest it complex our already too-complex thinking in respect to effects of motion.

In the first instance, it is illogical to conceive of motion without force, or of the power to appear to attract without a force back of that power.

In the second instance, it is illogical to conceive that the effects of a cause could be due to other effects of a cause without eventually getting back to the underlying cause.

Effects become causes of other things but effects cannot become the cause of their own existence nor can they subtract themselves from their cause.

Space-time are effects of force; they are dimensions of force; just as a foot is the dimension travelled by force, or as a pound is the dimension of a substance accumulated by force, or as a temperature is the measure of a resistance generated by force.

Time is merely the measure of intervals between sequences of events, which in themselves could not be unless force acted to cause those intervals.

And what is space?

Is it anything other than a concept?

Without light and two objects in the universe, could there be such a thing as space?

If the universe were homogeneous and lightless, could there be such a thing as distance? Could there be such a thing as space, or time, or temperature, or density or other dimension unless there were two things plus light in the universe to measure from, to compare to, or to relate to?

All dimensions of force are illusions of motion, which in itself is an illusion of force.

Without force dimensions have no existence other than as a concept.

In concept, dimensions have an appearance of existence through the illusions of force which is their cause.

This is, however, another and an extensive subject in which the question of infinity, beginning and ending, are considered.

In illustrating his point, Einstein cited an hypothetical condition which does not parallel the effect of gravitation in a mass, and, therefore, the conclusion cannot apply.

We hereby quote an abbreviated resume of Einstein's hypothesis and conclusion as written by J. Arthur Thomson in "The Outline of Science":

"Einstein thinks that gravity is not, as Newton held, a force, but a property of space. That all the effects of gravity may exist where there is no attraction is best shown by his own striking illustration. Imagine a chamber, like that of the projectile in Jules Verne's story, alone and motionless in space. A passenger therein will have no weight—his feet will not press downward on the floor. If he throws a ball into the air it will rise to the roof and remain there—there is no force of attraction to bring it down again. A weight hanging on a spring-balance will not stretch the spring. Now suppose that the chamber begins to move with a velocity which is continually increasing at the same rate as that of a body falling on the earth. The floor will press upward against the passenger's feet; it will catch up the ball, which will appear to be falling; the balance, drawn upwards against the inertia of the weight, will measure its amount precisely. There is no possible experiment which the passenger can make which will show him whether the projectile is moving with an accelerated motion or whether it is at rest, as we imagine we are, on the surface of an attracting body. This last, indeed, is what he will imagine. But he may be under a complete illusion—and so may we.

This is Einstein's "Theory of Equivalence." It shows that gravitation may have more than one explanation. And this leads us to his own explanation, which is an altogether new one.

Newton thought the apple fell because the earth exerts upon it an attractive force. Einstein considers that it falls because, wherever there is matter, space itself is curved, just as the space we see in a very slightly concave mirror, where there are no straight lines at all, and where, if any body is in motion, it must move along a curve. Suppose a man in a closed room discovers that a marble placed anywhere against a wall rolls towards a hassock in the center of the room, it will appear to him that the hassock is

attracting it. Yet the fact may be that the floor is slightly concave, like a very shallow basin, and the hassock has no connection whatsoever with the motion of the marble. Just in the same way the earth may have no direct connection with the falling of the apple, though it seems to us to be the cause of it.

We are asked to believe that space is curved, that all things moving through it move in curves—all things including light. Einstein's theory asserts that the actual reality which underlies all the manifestations we experience in the physical universe is a blend of time, space and matter. This trinity is comprised in one actual reality. All bodies move through space-time; and they move in the straightest possible tracks; motion is merely simultaneous change of position in space and time. Einstein's theory explains gravitation as distortion of the world of space-time due to the presence of material objects. He does not explain how or why a body can distort space-time; the theory explains gravity, not as a force of nature, but as a property of space-time.

On Einstein's view of gravitation, the earth moves in an elliptical path around the sun, not because a force is acting on it, but because the world of space-time is so disturbed by the presence of the sun that the path of least time through space is the elliptical path observed. There is, therefore, no need to introduce any idea of "force" of gravitation.

The more matter is present, the more space is curved. And so it happens that the light from a star just beyond the sun will come bending round it, like a train round a railway curve, and fall upon our eyes or cameras—that is, when the sun's glare is shut out during an eclipse—and we can see or photograph the star. It will appear to be shifted from its true position—how far shifted, Einstein has worked out. At the last eclipse the stars appeared where he had predicted."

The projectile described above is set in motion and effects are described as taking place within it which simulate the effect of gravitation.

Let us question this and see if they do.

If men and objects were on the underneath side of this projectile floating weightlessly around it, would they also press closely to it, or by the same argument, would they not be left behind if the projectile were set in motion?

Would not the force which pressed the objects within the projectile to its floor press the outer objects off?

If the projectile moved sideways, would the scales weigh the same and would the man not be pressed sideways against the walls?

Our planet moves in a circular orbit and rotates upon its axis, yet water is not spilled from a dish, nor is weight changed, nor is man inconvenienced, nor does the ball on the ground roll because of either of these two motions.

Consider the effect within that projectile if the line of force curved, and if the projectile rotated upon its axis.

The man within it would have to keep running perpetually or else be pressed first against one side then against the top, at which position he would be on his head.

The ball would roll around continually, the dish of water would empty itself, and the scales would change continually if fastened down, but if not it would follow the ball on its circuitous journey.

Let us consider what would happen on the outside of the projectile.

Anything on the outside would be swept off except that which happened to be in the line of direction. If the projectile should begin to rotate the last possibility of any object remaining upon it would pass.

The conclusion arrived at by Einstein that force is not necessary in consideration of the effect of gravitation is illogical, because gravitation is force, or rather one half of the universal force.

On the contrary, gravitation is the cause of motion in one direction, of which there are two, and radiation, the other half, is the cause of motion in the opposite direction.

Motion itself is an effect of the decision of the One Force to divide itself into two and run around in circles in order that a physical universe of illusions which we call forms and dimensions would appear to come into existence.

It must be constantly borne in mind, in the consideration of all effects of motion, that the attractive power of gravitation and the repulsive power of radiation are non-dimensional.

They require no time to act nor are they measurable in any other dimension for they are primary cause.

Their effects alone are measurable and they but appear to have dimension through motion.

Motion is therefore an effect of force and could not have the appearance of existence as the father of illusions without

the non-dimensional Mind Force back of it which we can plainly see the effects of in those illusions which motion sets up.

Even though we cannot see nor measure this Mind Force we know where its two eyes and their extensions are located in space and in masses.

Nothing in the universe escapes their observation nor their enforcement of universal law.

Now let us compare a planet without motion to this projectile without motion.

Even though the planet stood still, the men and other objects on it would still be drawn to its center from every direction. Scales would weigh and all things would act equally all around the planet, in accordance with the pull inward and the thrust outward, from the center.

Let us again assume for comparison the true condition of the planet in motion. The people and objects in the line of direction of motion are not the only ones who feel their feet pressing on the planet, or their masses weighing themselves in the scales. Everybody and everything, even that opposed to the direction of motion feel equal pressure and equal weight and equal relation to the planet.

If conclusions are to be right conclusions, the premises must be right premises. This projectile illustration is a wrong premise, therefore, the conclusion must be wrong.

Let us now take up the illustration of the marble and the hassock.

Here is another wrong premise.

The curved floor would cause the marble to run toward the bottom of the hassock but it would not run up hill if the floor were curved over the top of the hassock. The marble would not run up the curve, as it should to make the illustration a parallel, for space is curved in every direction, not alone in one.

Einstein "does not explain how or why a body can distort space-time."

The answer is simple.

Space-time is not distorted. It is perfectly symmetrical. It merely appears to be distorted.

In the symmetry of the sphere, we have perfection. In the symmetry of many spheres, we have a supposed distortion of symmetry due to the time dimension of

force which Nature takes to form her spheres and oblate them back again into nebulosity.

During this process, her apparent distortions are exactly balanced by equal opposite apparent distortions which, in the sum total, is perfect symmetry.

Any unbalanced unit of a design is balanced into perfect symmetry of bilateral design by its repetition in a mirror held in any relation to it whatsoever.

Every artist knows that the sum total of two equal and opposite distortions equals symmetry.

Also he knows that the greater the number and complexity of any apparent distortions, such as the reflections of any casually placed lines, or objects of many shapes, textures and colors in a hexagonal mirror, the greater is the appearance of symmetry.

Nature's apparent distortions are due to the varying pressures of her varying densities.

There are not two laws for the same principles, so let us see **why** light bends around a mass, instead of **how**.

Let us take the familiar illustration of the stone in the pool where, when the pool is filled with water, the man is able to see the stone which he could not see when the pool was empty.

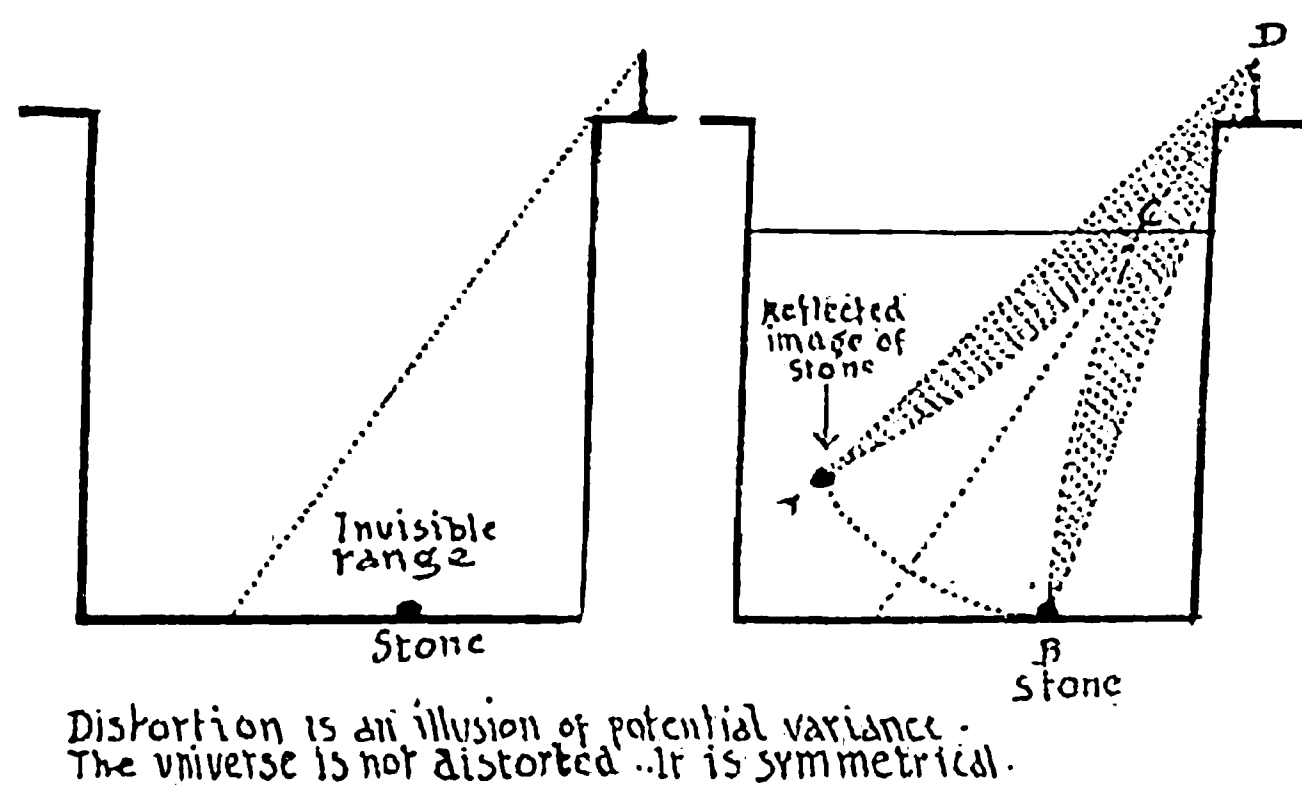


FIGURE 14

As density increases, we know that pressure increases.

As all potential resists passage through it with a strength which varies with its voltage pressure or density, and as a liquid is a more dense high potential than the air, the water bends the light which reflects the image of the stone to the surface of the pool in a violent curve, then from there to the man's eyes in an immeasurably slight curve.

The man does not actually see the stone, nor the position where the stone lies. He sees only its projected image and its position in Nature's mirror.

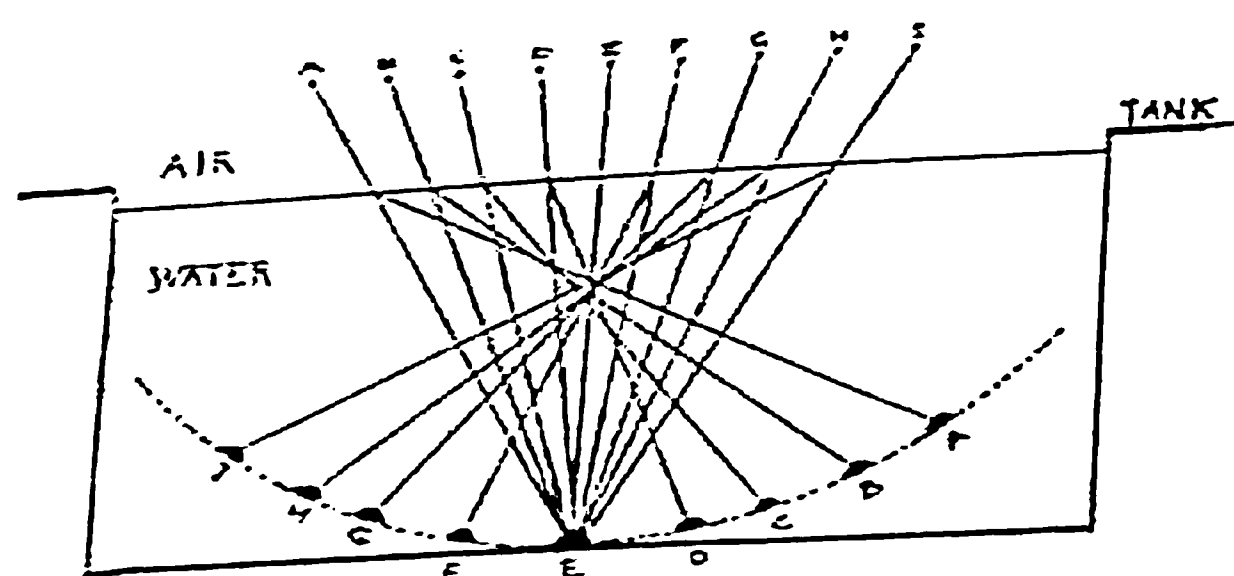


FIGURE 15

Illustrating the perfect symmetry of natural apparent distortions at E the stone and its position are seen in their true relation while at A, B, C, D, F, G and H the observer sees both stone and its position reflected in the curved planes of higher potential.

Figure 15 illustrates the symmetry of apparent distortion when balanced by its equal opposite.

A, B, C, D, E, F, G, H and I represent changed positions of the observer. Note the symmetrically changed positions of the reflected images.

Note also the symmetry of the apparent tidal distortions in Figure 10.

The universe cannot be anything else than a symmetrical one for all effects of motion are based on the wave and all forms of motion are based on the sphere. The sphere and the wave represent absolute symmetry and in their perfection there is no distortion.

If he actually saw the stone, then Nature would be distorted because a position or an object appearing to be where we know it is not, would be a distortion.

In the same sense, when we see a star which is actually behind the sun, it is only the mirrored image of it reflecting itself in Nature's curved mirror of heavier and more dense gradient of pressure near the sun. The supposed distortion is as much an illusion of motion as the mirrored reflection of the object around a corner is an illusion.

We think we see the sun after it has actually set. It is not the sun itself. It is the image of the sun, reflected in the curved mirror of the earth's higher potential exactly as an object is reflected around the corner.

In the example relating to the star, there is, other than density, one factor which alters the mathematical relations of objects without altering the principle in the slightest.

Spiral striations of pressures, such as the series of outer layers of higher pressures which surround a great body like a planet or sun, are curved mirrors of mathematically calculable ability to simulate distortions, whereas in small objects the striations of dense masses of small volume, are not calculable.

Every mass in the universe is encircled by striation mirrors which not only reflect light but sound and all other potentials.

We can explain our local refraction problems geometrically but our celestial ones are more susceptible to mathematical calculations.

The "Heaviside layers" around this planet and the photosphere, chromosphere and reversing layer around the sun are concentrically parallel to those masses.

These layers have division walls of greater densities than that of the spaces between them. Farther out from the sun are still other layers of gradually lessening pressure densities all of which reflect the light exactly as a bent mirror would convey the images of objects or light around a corner.

Let us bear in mind, however, it is but the images which are conveyed around the corner and not the objects themselves.

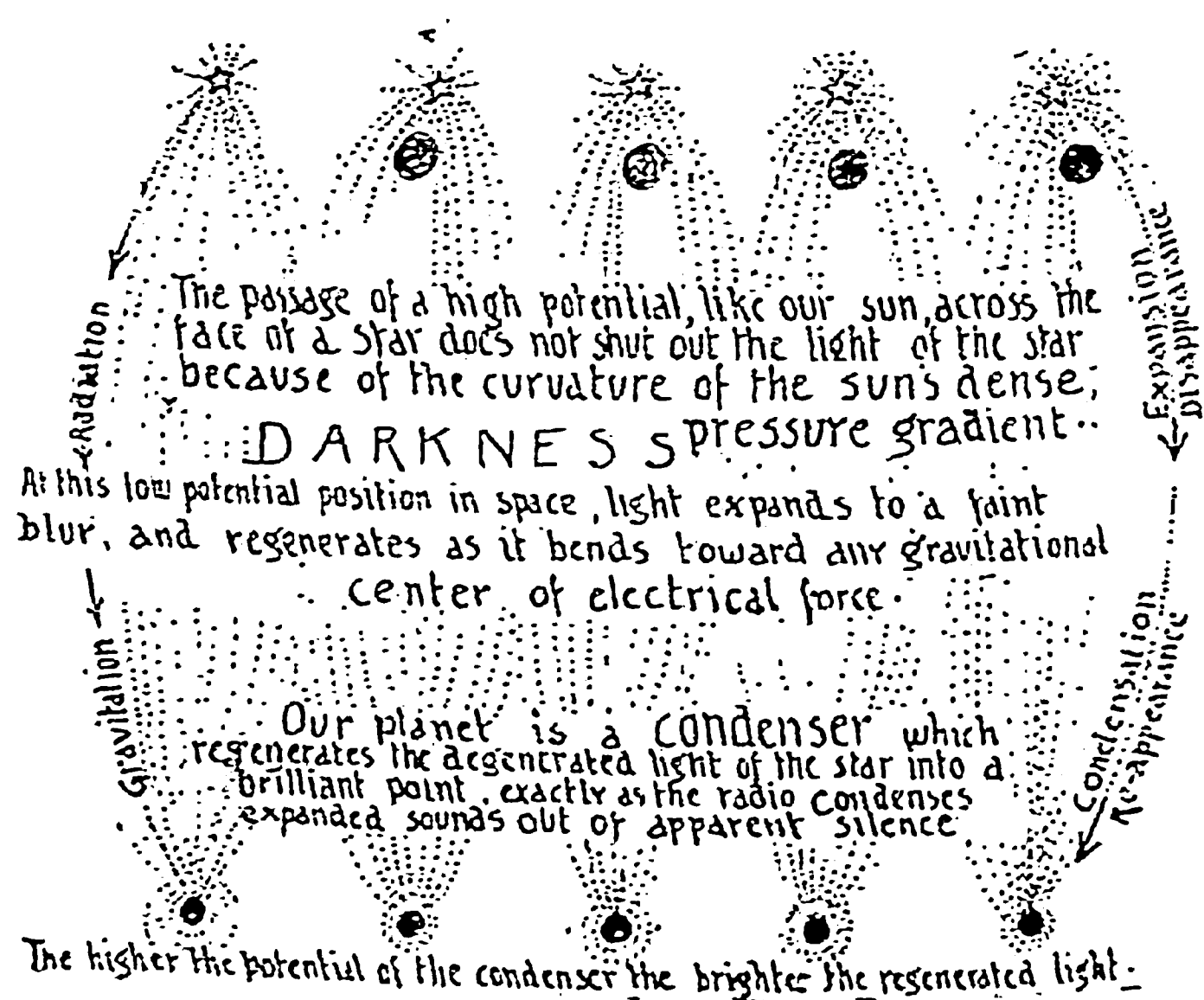


FIGURE 16

If one could clear away from it the high potential which surrounds a great mass just as one can empty a tank of its water, the star behind the sun could not be seen.

It could not mirror itself in emptiness.
Light is a substance:
It has mass.

Atmosphere is a substance exactly as water is a substance though less dense.

A stick plunged into water appears to break suddenly at the surface, but light penetrating the atmosphere appears to bend gradually as the potential rises.

Now, we **know** that the stick does not actually break because we are as familiar with that illusion as we are with the illusions of perspective. It only appears to break.

Why then do we **not** know that the light of a hidden star only appears to bend and does not actually? If we cannot see the star itself but only its image, it

necessarily follows that we do not see the **light** of the star. Again we are deceived by the mirage of the reflected image of light and not the actual light.

Just as the end of a stick which would be visible in air, could be hidden under a lily-pad in water, so does the star, hiding behind the sun, appear to be at the end of a beam of light which is apparently as straight as the stick in the water is. As a matter of fact, we never see anything in its true position. Symmetry demands apparent distortion in all things.

It must be borne in mind that always in a universe of motion all effects of motion are illusions which will always deceive us unless we trace their causes back to the two directions of the divided One Force.

VII

Examples

THE following are a few examples of effects of motion which have caused us to draw wrong conclusions because of the evidence of our eyes.

I. Chemical

In an electrolyte solution, oxygen, a negative gas, is found at the positive pole, and hydrogen, a positive gas, is found at the negative pole.

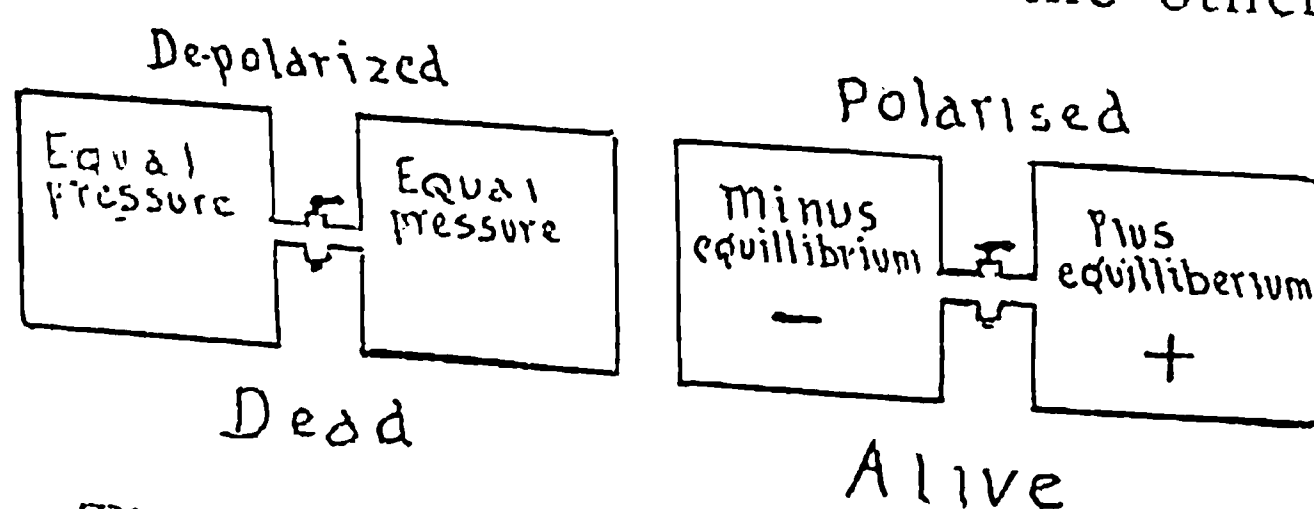
The evidence of one's eyes leads one to the conclusion that opposite charges attract each other.

Let us review the facts.

Water is, admittedly, a depolarized stable compound in which the identities of the separate elements have been lost. Hydrogen and oxygen, unstable elements admittedly, do not exist in water as hydrogen and oxygen. They have given up their separate properties of plus an equilibrium and minus an equilibrium in order to become stabilized.

Water is the result of the neutralization of the positive gas hydrogen and the negative gas oxygen which have as effectually short-circuited each other into an equilibrium as a heavy wire touching the poles of a storage battery short-circuit it into an equilibrium.

When an electric current is passed through this equilibrium, a contractive action takes place in the positive pole and an expansive action in the negative pole. This has the effect in electric action that a pump would have if placed between two tanks of air of equal pressure to draw the air out of one to force it into the other.



The active force proceeds in one direction and the reactive force in the other. The water is polarized. This means that every atom in equilibrium becomes opposed. And as this pumping process takes place the water ceases to be water. The poles become so arranged that they at-

tract and repel each other in growing preponderances. The result is that the two unstable units which, when united into one, are water, are now, when separated into two, hydrogen and oxygen.

This relation of increasing preponderances in accordance with the intensity of the charge is what we know as the stored energy of the battery, which has the ability to do work.

In other words, the stable condition has become unstable.

The degree of instability generated is the degree of charge in the battery. Its intensity is the measure of its desire for equilibrium as expressed in pressure.

The electric oscillations of the charging current have imparted electric oscillations to the battery poles through the medium of the electrolyte.

The positive pole draws the positive charge out of every atom of the water near it, leaving the water in a negative condition, a minus unstable condition, and the pole in a plus or positive condition.

It is then oxygen, a mass of minus equilibrium potential energy.

The water near the negative pole, on the contrary, loses its stability through attracting the positive charge pumped from the negative pole thus putting the water in a plus condition and the pole in a minus condition.

It is then hydrogen, a mass of plus potential energy.

Hydrogen has not been attracted to the negative pole, for there was no hydrogen there to be thus "attracted." For the same reason oxygen has not been "attracted" to the positive pole.

Both of these gases were "manufactured" at these positions by becoming polarized, and when the process was finished, they were thrust aside so that more water could come into position to be pumped apart into its component parts by polarization.

It seems never to have occurred to anybody that if like charges repel each other all substance would disassociate, for each like part would repel each like part.

It is well known that each part of any decomposing compound will attract each like part to itself, like atom to like atom and like substance to like substance. All like substances are similarly "charged," or, more properly speaking, similarly polarized.

2. Electrical

It is claimed that "affinities" are attracted toward each other with varying intensities. Some come together with explosive violence.

All "affinities" are polarized positive and negative opposites.

This fact is seemingly good evidence that "opposite charges attract each other."

What always happens when "affinities" meet? Is there anything left of either element?

Has there been a friendly meeting of amiable companions, or a battle to the death?

Sodium and chlorine, for example, meet. We can find neither present after the meeting.

Nothing is left of them, not even dead bodies.

Their identities have been absolutely lost by their depolarization into a unity which is something other than sodium or chlorine.

Even their crystallization changes to the cube which belongs to an equilibrium condition.

3. Electrical

It is claimed that masses are not doubly charged, but that every mass carries either a positive or negative charge, one or the other, fully and inseparably.

The commonly accepted explanation of the polarized condition of a bar magnet is that the particles which make up the atoms of iron arrange themselves in such a manner that their negative and their positive parts come together in the middle of the bar and thus neutralize each other. At the ends of the bar, however, they bunch their respective separate parts together to concentrate their power.

This is rather a gross double inconsistency. In the first place, like charges could not concentrate under the law as understood, for mutual repulsion would

immediately take place if any mobilization of that sort began.

In the second place, particles which arranged their negative and positive parts in any form must have both parts to arrange.

This is inconsistent because such a condition of double charge is denied.

Nature does not divide her positive and negative "parts" of a mass into halves of it, but permeates the whole with both forces passing each other in opposite directions.

4. Electrical

It is claimed that light striking a metal plate will cause it to lose negative electrons, thus leaving the plate positively charged.

The theory is that its equilibrium has been upset by the loss of some negative electrons, leaving it with a surplus of positive ones.

How can a positively charged plate emit negative electrons if one charge only is within the plate? Both charges must be present in order to accomplish this.

Consider this for a moment in its effect in the photo-electric cell.

A metal plate is placed in such a position that light falls on it. Light, admittedly has weight. One cannot add weight to a mass without lifting its potential. The light of the sun strikes the earth. It has weight and charges the earth, lifting its potential.

The effect of this charge of the planet is registered in heat. The measure of heat is the measure of resistance to such charging.

Light, registered as heat, striking the planet must radiate part of that which has been generated.

Radiative emanations are thrown off from the planet just as negative electrons are radiated from the photo-electric cell, or from the cathode in a radio tube.

The heat radiates.

What is the difference in principle whether light strikes the planet or a metal plate?

None.

Potential, or weight, has been added to it.

The metal plate is charged and heated. Radiation takes place because that which is generated must be degenerated.

There is no difference between that effect and the added heat in a radiator.

Both must give off heat.

The metal plate has not lost anything. It has gained something. It has become plus, or positive, by the added weight of light, not because it was deprived of anything. It has gained much and given off part of it, only part of it though, for it has been proven that plates so charged emit electrons for a long time after the source of charging has been withdrawn, which proves that they retain part of their added charges for a long time.

It is just like a radiator cooling.

Second consideration of the same effect.

Negative electrons are supposed to be ejected from the metal plate and strike the opposite plate as negative electrons.

Consider the radiant energy of the sun which leaves it as the same kind of negative electrons.

We know that they have weight and we know that the potential of the planet is lifted by their impact. And yet we say that they are negative electrons.

They were preponderantly negative electrons in relation to the sun from which they arose as hot particles expanding and cooling as they arose, but they are preponderantly positive in relation to this planet upon which they fall as cold things contracting and heating as they fall.

Discharging corpuscles are preponderantly negative and charging corpuscles are preponderantly positive.

All electrons change their preponderances at the low pressure plane between cathode and anode plates.

All electrons regenerate at the grid and anode where they either pass an area of high potential or impact against one. All variations of energy are recorded as they sequentially expand and contract in tune with the varying frequencies carried there in the conducting current.

During this recording process each electron changes its preponderance from positive to negative and back again many thousands of times as it expands and contracts to record variations of potential by its pulsations.

Let us consider this question in relation to light.

We know that light leaves the sun hot and arrives here hot. Across the vast intervening space of indescribable cold, these degenerating corpuscles "travel" (according to our theory) in order to reach here.

Corpuscles expand as they arise to areas of low potential.

As they expand they cool.

In the cold reaches of space, the same "heat energy" is still in them but is expanded into large volume.

When they pass the low pressure zone between the sun and the earth, they contract. Contraction into smaller volume heats.

Contraction does not add more heat as one supposes when one says "contraction heats." It merely concentrates the same quantum of heat into smaller volume.

Therefore, when very small regenerated corpuscles of light arrive here on their waves, the heat that they have always had and never parted with during the long journey, is still with them unchanged in quantum.

The heat has been regenerated by condensation exactly as the degenerating human voice is regenerated ten thousand miles away by condensation.

The voice has not been silenced during the journey. It has merely expanded beyond our perception. It has exchanged its positive dimension for its negative one.

In the same manner heat has not ceased to be heat in the cold reaches of space. It has merely expanded beyond our perception of it as heat by exchanging to its other two way dimension, cold.

When its diverging lines, in respect to the sun, bend around to converging lines, in respect to the planet, the negative discharging "electrons" become positive charging "protons."

Sound has mass just as light has mass. All mass is light.

Solid matter like a bar of iron is frozen light. Bring it to the white heat of incandescence and it is then as much light as the sun is light. One may photograph by its light as well as by the sun's light.

5. Biological

Observe that the division of a single cell is accompanied by a churning oscillation which exactly resembles the pumping of

it apart into two parts by two opposing forces.

It splits into two parts when the inward pull and outward thrust have developed their male and female preponderance to an equilibrium point.

During this process of polarization, the cell is either male or female in preponderance, but when they split, they are both equal or bi-sexual.

Depolarization has for the moment conquered.

The process repeats itself continually and the speed with which each separate offshoot multiplies, plus the fatigue and death of early generations of cells at different intervals determines the excess of either male or female cells, which, in its turn, determines not only the sex but the preponderance of sex.

6. Static or Frictional Electricity

By "charging" two pith balls negatively or positively they supposedly repel each other.

Pith balls cannot be charged in such a manner.

Pith balls are polarized by a current just as a planet is. Naturally, a current approaching two pith balls will charge them alike. Their north and south poles will coincide.

To prove that pith balls are polarized exactly as planets are polarized cut some long pieces of pith from a sumach tree. They will then act exactly as polarized needles or bar magnets of steel will act.

"Charge" them by two opposed currents and they will be oppositely polarized.

They will then do what two needles will do if you charge both in the same coil and turn one upside down.

Polarization is a condition precedent to motion.

Nothing can appear to attract or repel which has not simultaneously become polarized.

Pith balls, needles, planets or any other things in Nature are as inert in their actions toward each other as are the two poles of a dead storage battery.

For a storage battery or a pith ball to perform work it must first develop opposition to its equilibrium condition by be-

coming "charged," which is the equivalent for developing live opposed poles.

So-called static, or frictional, electricity is claimed to be a different kind of electricity than dynamic electricity. There is only one kind of electricity.

7. Bar Magnet

It is said that the north pole of a bar magnet attracts the south pole of another bar magnet, or of a compass needle.

It does appear to do so, but only to destroy it. The north of the first bar is no longer north nor is the south any longer south.

North has extended itself to join the north of the second bar and the south of the second bar has extended itself to join the south of the first one.

In the case of a compass needle, the polarization will be reversed if the current in the bar is stronger than that of the permanent magnet of the compass needle.

If positive and negative attract each other, why do they get as far away from each other as they can in a bar magnet?

Why are they not together in the middle?

In a bar magnet, every point back of north is south and every point back of south is north.

Cut it in a million parts and one will find this true, but in every instance these opposed charges will get away from each other as far as they can.

8. The Electroscope Fallacy

Two strips of gold leaf bound together at the top will separate when supposedly positively "charged" and collapse when supposedly negatively "charged."

The answer is simple. They are not oppositely "charged" on the two occasions.

Both ends become similarly polarized. The bottom ends separate but the upper ones cannot for they are tied together.

Tie two needles together at either end and they will do likewise.

When the gold leaves collapse it is because they are depolarized by an equilibrium and not because the opposite "charge" has been substituted.

To prove this, superimpose several gold leaves upon a very thin strip of vellum. Then hang both gold leaf vellum strips

by threads, leaving both ends free instead of one.

Now approach it with ebonite, or glass rods, or sealing wax, and they will spread apart.

Hang one vellum strip in such a manner that it can be reversed by a pendant thread. Reverse these while the charge lasts and they will come together.

Motion of any nature whatsoever in this universe is impossible without an accompanying polarization.

Try it by rubbing a bar of ebonite vigorously.

Hold the ebonite in the middle, not at the end, and touch the top of the electroscope.

The leaves will, of course, separate because both of the lower ends are either positive or negative.

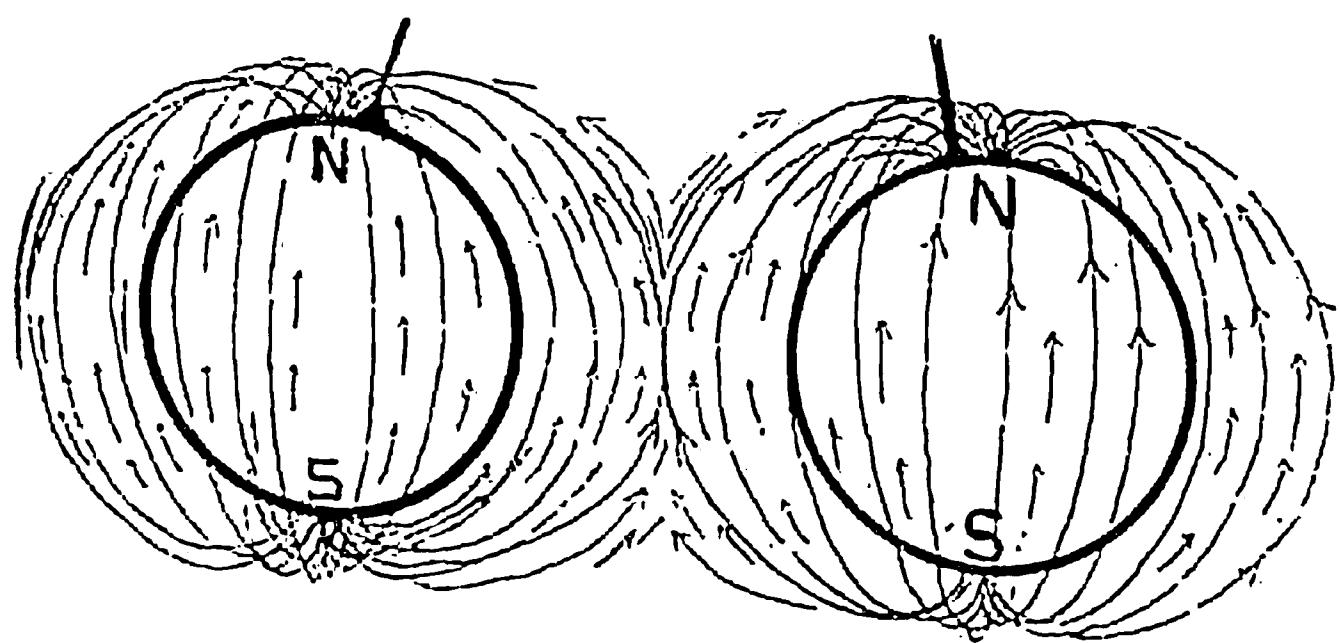
Pass the rod slowly along over the knob and they will collapse and then open again when equilibrium and either opposite signs alternately pass the knob.

* * * * *

In an ebonite or glass rod, there are often four or more striations of polarization pressures which indicate loops of force at several points instead of one at each end. A badly polarized bar of steel will often be similarly striated.

Why do two needles (or pith balls) appear to repel each other when their poles are similarly placed?

The following diagram will answer the question.



Note that an insulating field of flux is developed around each polarized mass to protect it from contact with any other similarly polarized mass.

This field is an actual flow of current in which the pressure of the flow is as real as the pressure of a flow of water or current of air.

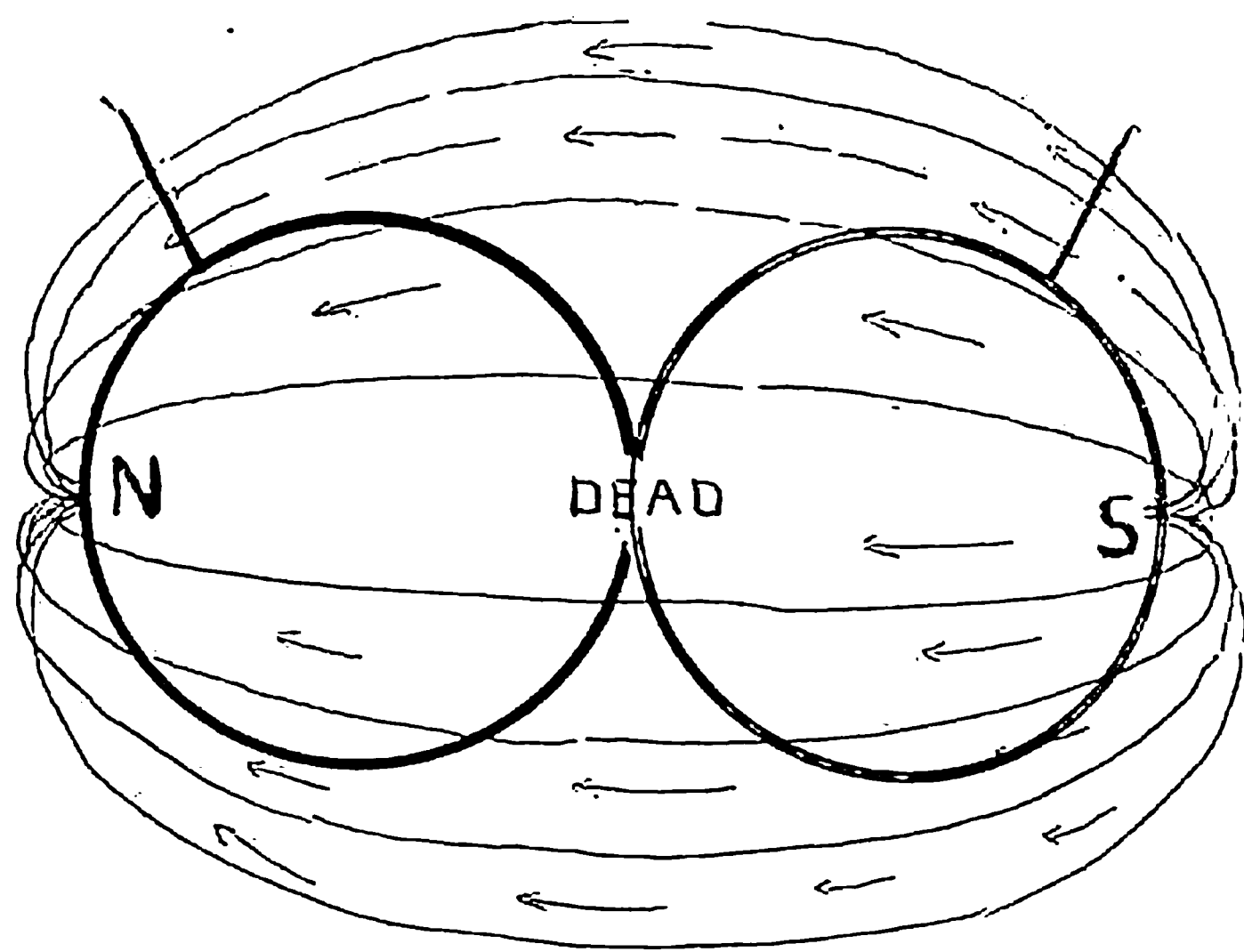
By placing two such masses side by side the separate flows of the two fields

of pressure will hold each other apart.

If you reverse either the needles or pith balls, there is but one direction or one flow in a continuing circle around the field.

Naturally the desire for equilibrium through attempted depolarization will shorten the electric line of opposition in the direction of its length and thus draw south and north together bent on mutual destruction just as chemical affinities depolarize each other by contact.

One becomes an extension of the other just as a piece of polarized steel added to another one depolarizes both at the point of contact and extends their signs to opposite ends of the bar. If one polarized pith ball comes into contact with another, this is what happens.



Astronomical

Comets tails always point away from the sun. This fact led to the theory of light repulsion.

The sun is supposed to so attract all planets that they would fall into it if it were not for that saving "initial impetus."

The sun is light. How is it that the sun attracts and light repels, when both are identical?

Let us look for a more simple and logical answer in pressure gradient.

The low pressure of the comet's emanations "rises" into the pressure gradient of ever-lowering potential the greater the distance from the sun.

The comet's tail and the lozenge ionizing rapidly in water are identical effects, even to the slight explosive burst of light in the direction of the sun as compared with the ionization downward in the water of a portion of the lozenge before curving upward.

VIII

Regarding the Universal One

WHEN The Universal One was published it was generally condemned because it was based on the continuous atom of a continuing universe of all effects of motion expressing themselves in repetitive cycles, the wave as the basis of all motion, the corpuscle and all matter as merely the records or dimensions of motion and the unity of force.

Many of those who condemned its ideas have since accepted them when proposed by scientists, who, although, in announcing these ideas have made no reference to The Universal One.

Prof. Albert Einstein recently made the most revolutionary of modern scientific statements to the effect that the electric and gravitational field were unity.

This discovery claimed by Prof. Einstein was copyrighted by me throughout the world three years before Einstein announced it.

The following extracts from my book speak for themselves. The entire book is interspersed with the idea that electricity and the attraction of gravity is one swing of the cosmic pendulum and magnetism and the repulsion of radiation (which are also unity), is the opposite swing.

It seems incredible to me that one half of the truth should have been recognized without having simultaneously recognized the other half, especially, as no effect of Nature stands alone without its opposite effect. Opposition is Nature's greatest and most conspicuous attribute. Repeatability comes next in importance. Attraction must be opposed by repulsion. And each of these must meet with resistance, which is Nature's repetitive principle. Without this trinity the universe, as we know it, could not be.

The following is a graphic description of Nature's process in the creation of that which we call matter.

Page 16.

"All mass is accumulated centripetally by the genero-active, gravitative, attractive power of electricity, and is dissipated centrifugally by the radio-active repelling power of magnetism.

Page 212.

"The contracting electric centripetal stream is the condition of motion necessary to produce that effect of motion which we call the attraction of gravitation."

"The expanding, magnetic, centrifugal stream is the condition of motion necessary to produce that effect of motion which we call the repulsion of radiation."

"The electric stream and the magnetic stream are one. They are but travelling in different directions."

The key to all opposite effects of motion is contained in the following statement:

Page 221.

"The electro-positive force of the attraction of gravitation pulls inward from within; and the electro-negative force of the repulsion of radiation pushes outward from within."

There are many specific statements and definitions such as the following:

Chart opposite page 58.

"Gravitation is the desire of electricity to integrate into the appearance of form. Radiation is the desire of magnetism to disintegrate into the disappearance of form."

"This increasing intensity of opposition between the gravitative desire of electricity to assemble the universe into the appearance of form by its generative force of attraction, and the radiative desire of magnetism to disassemble into the disappearance of form is the cosmic principle of creation."

Chart opposite Page 59.

"The creating universe of matter appears through the centripetal contractive, endothermic, positive charging, (electric) force of gravitation which attracts, disappears through the centrifugal, expansive (magnetic) radio-active, exothermic, discharging, negative force of radiation which repels, and reappears through a union of both forces by regenerative impact in inertia."

Page 141.

"Gravitation is the generative force of increasing potential and the regenerative force of decreasing potential."

"Gravitation is the power within the electric force of action to attract the electric force of action."

"Gravitation is the contractive power within electricity to divert the universal constant of energy into centripetal vortices of closing spirals of increasing speed, thereby attracting similar states of motion into an accumulation of mass, the pressure of which increases toward its center."

"Gravitation is an expression of the power of electricity to accumulate by induction and, by so doing, to force magnetism to increase its resistance to that accumulation."

"Gravitation is the (electric) inductive force."

Page 84.

"Lightning seeking its own potential, and an apple falling to the ground, are effects of exactly the same cause. Gravitation is the cause of each."

The following refers to the generally accepted belief that electricity and gravitation were, when the book was written, considered to be two separate disconnected effects of motion.

Page 130.

"The supposition that atomic motion is an electrical effect, and that the atoms of the elements are thereby exempted from obeying the laws of gravitation, misleads the chemist."

Page 131.

"Modern science recognizes the varying power of substance to attract and to repel in that effect termed electromotive force, but its basic cause is presumed to be electrical. Electricity and gravitation are not yet recognized as identical expressions of the same force."

Page 147.

"Science considers the attraction of gravitation of the solar system as an entirely different effect from the effect of motion within an atomic system."

"Atomic motion is presumed to be non-subject to the laws of gravitation."

"Science names one 'gravitation,' and the other an 'electrical effect.' Both 'effects' are the same."

"Also are both 'effects' born of the same conditions."

"If the movements of planets and satellites are 'effects of gravitation' and the same 'effects' in smaller mass, are 'electrical effects,' why do smaller masses exactly follow the laws of the larger masses?"

"The light units of an atom seem independent of the earth's gravitative center, but actually they are not. All are revolving true to the planes of their respect-potentials."

"The moons of Jupiter do exactly the same thing in respect to the solar gravitative center of this system, yet they are not considered an 'electrical effect'."

"They fall toward the sun and away from it with the same apparent disregard that light units of a system evidence in respect to other masses outside their own systems."

"Even their accelerations and decelerations are effected by causes other than whether they are moving toward the sun or away from it."

Page 149.

"All effects of motion are gravitational and radiational effects. Also they are electric and magnetic effects just as they are likewise chemical effects."

"All motion is oscillatory, swinging in sequence between two apparently opposing forces, gravitation and repulsion, which are respectively electric and magnetic."

Even more specific reference to the unity of gravitation and electricity can be found in the following three paragraphs:

Page 147.

"All effects of gravitation are electric effects, and all effects of radiation are magnetic effects."

"All effects of motion are electromagnetic effects."

"All mass has a series of gravitative centers toward which it evidences its allegiance in the order of its (electric) potential relations."

Here again are paragraphs which specifically set forth the unity of electricity and gravitation with the generative force of creation, thus identifying resistance and generation as the step-up transformation process which gravitation employs to meet its ends:

Page 68.

"Electricity is the generative force."

"To generate means to decelerate (resist) an established motion in order that it may be accumulated. Magnetism is the degenerative force."

"Resistance to either opposite force results in the regeneration of the magnetic force and the greater generative power of the electro-gravitative force."

Page 29.

"Generation or regeneration is an effect of gravitation. An impact of radiative energy against any lower octave of integration will set up the necessary resistance to the radiative energy to regenerate it into its original form."

Page 15.

"The action impulse and the reaction impulse.....are alternating between the apparent opposites known as generation and radiation."

"Generation and radiation are opposites. Generation is the attractive, gravitative, positive, electric force, and radiation is the repulsive, emanative, negative, magnetic force."

Page 176.

"Induction is an effect of generation or regeneration."

"If this is true, then induction must be related to the attraction of gravitation and conduction to the repulsion of radiation."

By giving due consideration to the swing of electro-magnetic oscillations between these two opposite expressions of one force, the very principle of creation is made more clear:

Page 10.

"Creation is merely a swing of the cosmic pendulum from *inertia, through energy, and back again to *inertia, forever and forever. It is but a series of opposing pulsations of action and reaction, integration and disintegration, gravitation and radiation, appearance and disappearance."

*This term has been used in the sense of inertness, or equilibrium. In all later writings it has been corrected to conform to the meaning conveyed in scientific terminology.

Page 131.

"The force of attraction, which is electric, and the force of repulsion,

which is magnetic, are both opposite pressure dimensions, and they must change their relations as other dimensions change."

"All mass is either charging, in which case it is flowing in an electric stream of centripetal preponderance, or it is discharging, in which case it is flowing in a magnetic stream of centrifugal preponderance."

"An electric stream always flows spirally toward the gravitative center of the mass, or system, or wave of systems."

"Attraction and repulsion are merely apparent effects of electric action and magnetic reaction."

"One (electricity) is an effect of gravitation, the other (magnetism) of radiation."

Page 69.

"Electricity is the basis of the atom."

Page 148.

"The attraction of gravitation, in favoring the generation of energy, is enabling electricity to accumulate as mass."

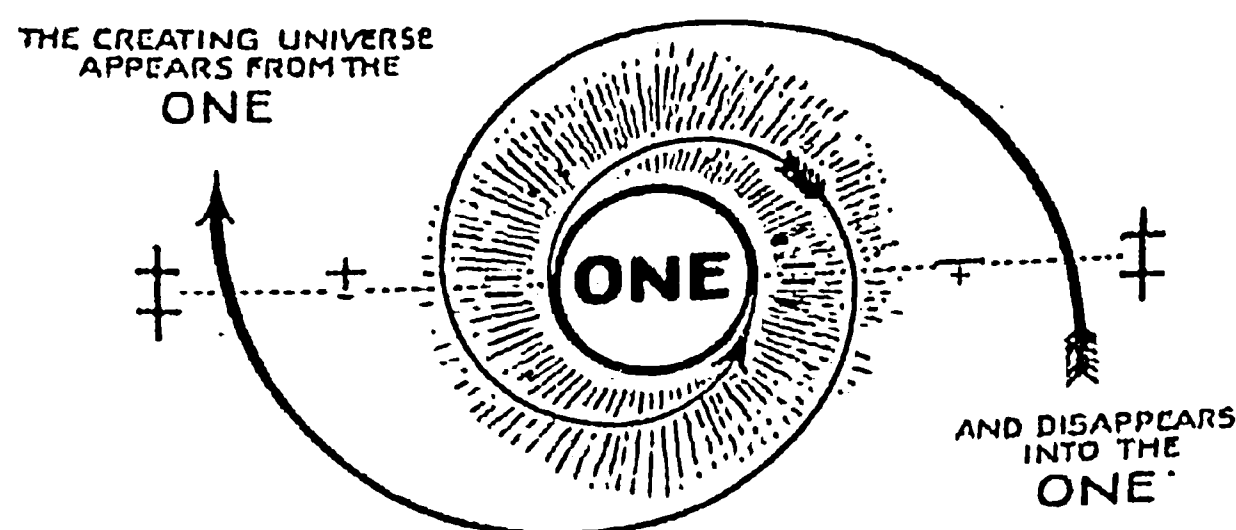
"All mass, (electricity) consists of energy accumulated by the attraction of gravitation into the appearance of form."

"All form is held together, more or less closely, by the relative force of gravitation which accompanies mass of various dimensions and relations."

Page 138.

"The electric stream displaces substance by accumulating (gravitationally) the universal constant, under increasingly higher pressure equilibriums, into relatively solid masses, and the magnetic stream diffuses that solidity into tenuity by releasing those high pressures."

"Affinity, in the chemical sense, and attraction, in the electrical sense, are analogous. Both are effects of gravitation."



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