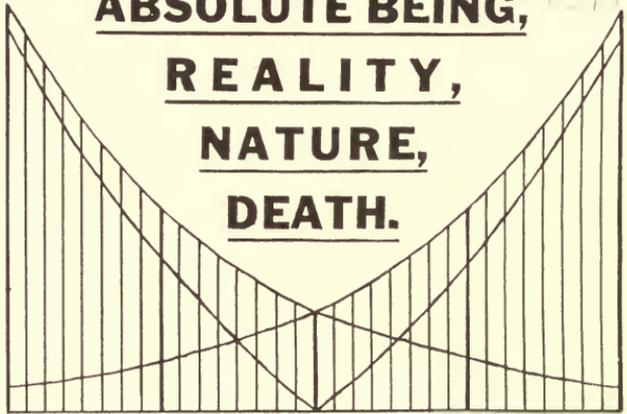


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# WORLD COGNITION

ABSOLUTE BEING,  
REALITY,  
NATURE,  
DEATH.



THE CONTRAVAXANT.

BY **WM DANMAR**

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WILLIAM DANMAR  
Author of  
*"Galomalism"*



# WORLD COGNITION

## *The Scientific Philosophy of Galomalism.*

FIRST PART: **Ontology**, the science of **Absolute Being** or **galom**, the constant forceproduct as the essence of the worldstuff.

SECOND PART: **Metaphysics**, the science of **Reality** or the cause of nature as the antipolarity in parts of the worldstuff.

THIRD PART: **Physics**, the science of **nature** or the worldprocess as the equalization of the conditions and equilibration of the counterforces of the worldstuff.

FOURTH PART: **Nirvanalogy**, the science of **Nirvana** or **death** as the final result of nature or life, and the ghosts in nirvana as the products of nature in the normal condition of the worldstuff.

1923.

WILLIAM DANMAR,  
5 McAuley Avenue,  
Jamaica, N. Y. City.

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## P R E F A C E

Since "the limits of the cognition of nature" in the materialistic sense have been drawn in such a manner that no ambitious materialists could remove them, a new scepticism in regard to a possible cognition and knowledge of the world has spread among discouraged thinkers, leading them to cognitionless resignation.

But the failure of the materialists search after cognition, limited in mechanism, does not require to suppose that world and nature are essentially unknowable; all it means is that they are unknowable to mechanistic materialism.

The cause of the materialistic failure was at the very base of materialism. An untrue barren hypothesis, that of material atoms which permitted nothing but mechanical motion, therefore mechanical dynamics, as fundamental principle, made radical cognition impossible — "Ignorabimus."

To cognize the world and what is happening in it a new fundamental principle was required which is no speculative hypothesis but a scientific law, gained by logical induction from results of empirical research.

The "empirical laws of nature" of modern science are now united and generalized in the one worldlaw of the inverse proportionality of the counterforces and their constant product, galom, as the essence of the worldstuff, through which "the unknowable" has become known. This worldlaw is now the scientific principle on which our worldcognition is erected.

Whether all deduction and detailed applications are just correct or whether they require improvements is of

secondary importance. The scientific establishment of the basic principle and its fitting application in world-cognition are of first importance. The new principle, represented by the new term "galom" and developed in the following articles, means the now known "absolute" the philosophers were looking for. It was not found in the barren manners of speculators who stood aside from empirical science, but was found through graphical operations which exclude all sophistry. It was found independent of the laming influences of the epistemology or theory of knowledge of those who believe they have unworldly minds that can cognize but "phenomena" of the world but never the world itself.

The negative proof of "Ignorabimus" and the bankruptcy of materialism on the one hand, and the positive proof of galom and scientific galomalism on the other hand are the two outstanding facts in modern philosophy. I publish the results of my researches to preserve them for the future, because I put but little hope in the present, not only on account of the present decayed circumstances in our world, but also because history shows that it takes at least three generations to introduce a new radical idea to slow philosophers.

A philosophy which sets aside materialism and spiritualism as extremistical and monism and dualism as num-bermystical, and establishes a principle which contains no extremes but co-relativity in an absolutum, appears strange to the common mechanistic method of thinking, the more so because it requires a separation of dynamics from mechanics. But exceptional thinkers and free minds have shown up here and there who were interested and convinced by the scientific proofs.

The toughest prejudices are struck by the fourth branch of galomalism, nirvanalogy, showing the existence of ghosts, which displeases the materialists, but proving them to be the dead products of nature, which displeases the supernaturalists. But this is also a matter of science and not of prejudices and beliefs.

Galomalism was started in the year 1883 when galom,

the constant forceproduct as the essence of the world-stuff, was discovered through operations on the drawing board, such as an architect will make. Its fitting application in the explanation of the world has since been elaborated without being disturbed by an invited disproof.

From 1914 to 1921 a guaranteed prize of \$1,000 for a disproof of the basic principle of galomalism was offered in "Modern Nirvanaism," but in vain. I shall not repeat it now because I consider it useless, since it would mean to disprove the empirical laws, such as Boyle's, Dulong and Petit's, Ohm's, etc., which show galom though not properly expressing it. But if anybody makes a valuable new suggestion in favor or against it, he will find me appreciative, because we want the truth, the whole truth and nothing but the truth.

A number of efforts have been made to make the thinking public and especially the scientists acquainted with the new philosophy. Besides many articles in periodicals the following books were published: "The Tail of the Earth," 1887; "Gravity," 1897; "Life and Death," 1903; and principally "Modern Nirvanaism," 1914. This year I publish "Welterkenntnis" in Berlin, "World Cognition" in New York, and "Ghostology" at home. All these publications are no business enterprises but efforts to tell those who want to know the world the explanation of it.

Believing prejudices in favor of old philosophies and unscientific skepticism in regard to a possibility of a world cognition are of course obstacles which will be removed but slowly; but a fair study and judgment of galomalism is expected of free thinkers who are not interested in upholding old mistakes.

Humanity moves but slowly, and lately was more interested in its brutalities and miseries than in uplifting enlightenment and true appreciation of life and its results. Knowledge of the true position of humanity in nature, and in general the principal truth about the world, based on facts and logics, instead of hypotheses and revelations, will enhance progress to easier work, good common sense,

fairness and a better and safer life to the people. But consequences for society, such as may be applied in economics, politics, ethics, aesthetics, etc., are not treated in this present work which is limited to a general cognition of the world.

The principal mistakes of the old philosophies, namely to make stuffs out of forces, such as coldstuff or matter, and heatstuff or spirit and ether, which made their systems mistakes, had to be removed by showing the true meaning of the two forces and their relation to each other within being. That neither of these forces nor their addition but their multiplicative product is the true induction of the essence of the worldstuff, which makes a true and positive cognition of the world now possible, is the main principle and sound scientific basis of galomalism.

Efforts have been made in my publications to avoid mathematics and similar difficulties for the popular readers as much as possible, but really the simplest way to present a law or a principle is by making a drawing of it. Sophistical twisting and misconstructions, such as language has often to suffer, are avoided through graphical illustrations of ideas.

Sophistical "cognition-theories" do not bother me, because I disprove their basis and appeal to the "naive realism" of healthy common sense. Science alone is respected and is all we care for.

The galomalistic world-cognition is again submitted to independent thinkers and to those who do not like it I say: Disprove it if you can.

January, 1923.

WILLIAM DANMAR,  
Professor of Architecture.

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## I. THE WORLD

The dimensionless world, infinite in every direction, is no universe, cosmos, worldall, because these are limited Alls. Infinity is no quantity which includes limitation, and the attempt to imagine the world as a quantity must fail, because an "infinite universe" is a self-contradiction.

For our cognition of the world a proper concept of measuring is very important, especially in regard to the true value of units and numbers. The scepticism behind "the theory of cognition" of the modern "philosophers," which wrecked all their attempts at philosophical cognition, is based largely on the question of measurement.

In Kant's "Critic of pure Reason," the latter is limited within the mechanical categories of quantity: the one, the many and the all, or unity, plurality and totality. For instance the atom is the one, the aggregation of atoms to a substance is the many, and the total number of atoms in the world is the all, the worldall.

"Pure reason" is supposed to move within these categories, unable to get beyond them, where there is "the unknowable." Consequently whatever there is that is not measurable in the mechanical sense of addition and subtraction and does not fit into "world mechanics" belongs to the unsolvable "world riddles." The absolute worldbeing, which is independent of our mechanics, is, therefore "unknowable" because unmeasurable in the mechanical method—"Ignorabimus."

Kant's categories are indeed the limits of the cognition of the world-mechanicians and of their insufficient explanation of the world, but if they were real technicians and tried their worldplan on the drawing boards, they would find that their mechanics cannot produce a living world, even if they call their kinematics dynamics.

The logical concept of required infinity is independent of mechanical quantities and unmeasurable by units and numbers. Beyond the meaning we give to unity for our limited purposes it has none. The world itself is no measurable universe, no world building, and, therefore, not cognizeable by purely mechanical methods. Understood measuring shows us that the world is dimensionless and infinite.

The infinitely small is but small and the infinitely weak is but weak in comparison, but in themselves they are neither small nor weak, neither large nor strong. The co-relativity of these concepts prevents them from becoming absolute extremes. We may imagine the "small" to be an atom or neon or electron or whatever the latest "smallest" may be the world-mechanics have invented, but it cannot be limited at that point because the small has no fixed existence. And the infinitely large and strong extends beyond any worldall and any allmight, because it is never "all."

To shorten this critique of Kant's principal basis of skepticism, I postulate the relative categories of the small and large. From a choosen normal which needs to be no unit, we call that which is less **small** and that which is more **large**, but we must not forget that this is our arbitrary doing which has no other relation to the world itself than that which we give it.

The world is neither small nor large, and therefore, not cognizeable as a quantity, which was tried in vain by all those who say that "Infinity is inconceivable." It is a simple concept, easily understood when infinity is separated from mechanics and conceived as a logical necessity but not as a quantity.

We make scales, units, and figures to serve us in our labor and research; we also make concepts like space, time, sizes, strengths, etc., and use them to determine the results of our research, which is proper as long as we do not forget the relativity of our creations and do not try to place them into the essence of

the world, as monism, dualism and other branches of number-mysticism try to do.

It is said the being world has extension; but that extension is merely an abstraction, and if we consider it alone, we call it **space**, which, therefore, is abstracted extension. After the concept of space was gained, the matter was reversed and the being related to space as that which fills it, stuffs it and was called stuff (from **stupa**, "stuffing"). Everything that exists in space, fills space, is stuff, and the infinite mass of it is the worldstuff, no matter what its essence may be.

The genuine materialists filled space but partly with their material stuff and left the balance empty for the motion of that stuff, which they called matter. But today we know that space is abstract and can be no part of the being world, for which reason modern philosophers try to fill it completely with some kind of stuff, be it matter, ether or what.

Besides the worldstuff nothing can exist, because no room is left for anything else. Whatever does not exist in space does not exist at all, because there is no other place for it, except perhaps in the "inner consciousness" of some dreamers.

Space is full, and full is full, no more and no less. therefore, the absolute and uniform filling of space by our worldstuff and its measurement by volume is our first principle, different from the principle of materialistic chemists who measure their "matter" by weight, an energy not explained by them. Architects measure their stuffs by volume and call the filled volumes **masses**. We will see who is right.

The continuous worldstuff, therefore, is the extended every form filling, stuffing substratum which is the basis of all existence and reality.

Another question is now that about the essence of the worldstuff or its absolute being, independent of space, time, and conditions. What is this stuff in any space, at any time, in any condition?

The science of being or **on** is called **Ontology**, which

is the first branch of philosophy. The older ontological hypotheses made forces beings, and since two principal forces appeared in nature, cold and heat, they were made the essences of stuffs, which thereby became forcestuffs, either coldstuff or heatstuff or the mixture of the two.

Accordingly we inherited the following stuffs:

Matter (coldstuff), ether (heatstuff), astral substance (heavenlystuff, lightstuff), spiritus (originally the breath or spiritus of the sungod, then also heatstuff and lightstuff), psyche (not mind but the Greek for spiritus), phlogiston (firestuff), fluids (electrical and magnetical), and others.

To consider the supernaturalists, we could enter in the list of hypothetical stuffs, also a mindstuff, but it is not supposed to fill space but is intended to exist outside, above the world, where there is no room for it because the infinite world leaves no place for it. We, therefore, strike out mindstuff as of impossible existence.

In the sexual-symbolic form of philosophy, still in vogue, we find but two stuffs of opposite positions in creation: motherstuff or **materia**, matter, and fatherstuff, which should have been named **pateria** but received the symbolical name of "spiritus" of the fatherly sungod. Reality consisted in the sexual ambition of these stuffs to generate and create the living world, therefore, the process of creation was called birth-giving, *natura*, nature.

Only a monistic materialist would be justified to call all stuff matter, but such materialists do not exist. So-called materialists could never get along with their matter alone to construct a living world, therefore, they added thereto first empty space and essential motion, and when logics destroyed their empty space because it was nothing, they filled it with ether or heatstuff, which was the original spirit, but had no use for ether except for this logical need.

Lately the materialists have also adopted an inde-

structible and, therefore, essential energy, which can be being only if it fills space and substitutes the ether. But it is not required to make this exchange because the principal form of energy is supposed to be heat, which if stuffified, furnished heatstuff, ether, spiritus. But it is to be observed that the materialists have become dualists.

All these old philosophies furnished the world-architect materials with which he could build, measuring mechanically, and adding and subtracting as is done in building. The chemists, it is true, took another method of measuring than the architect, with units in weight instead of in volume, but they built their substances also in the mechanical manner by addition and subtraction. It is an architect who will show them that their method of building is wrong and that the chemical process is no building.

Nothing can be done with materialistic chemists, but the "sceptical chemists" who are quite numerous since Boyle's time, will understand that motion, change of relative positions, composed of abstract space and time, cannot be made a force. Heat, therefore, which is a force, must be something else but motion, which does not necessitate that it is a stuff, because there is the possibility that it be an essential factor of stuff. The chemists know that in their work they are not dealing with their matter alone but also with heat, which is important.

If heat is no motion of material bodies but a factor in the essence of stuff, appearing as a force, then dynamics or the science of forces is no kinematics, as a part of mechanics. A dynamical conception of the conditions of substances must, therefore, not be mechanical. A separation of dynamics from mechanics is required as a principal feature of this new philosophy.

In the following articles will be shown that the laws of the forces are not mechanic-arithmetical but logarithmic-geometrical for which reason the chemist must measure different from the architect. The becoming

of new substances is no building but creation by the motherfatherstuff.

For our new world explanation, based on a new measurement of stuffcondition and leading to a new world conception, we can accept the old subdivision of philosophy, adding a fourth branch to it. There are four branches of our world-philosophy:

**Ontology** which concerns itself with being.

**Metaphysics** which concerns itself with reality.

**Natural science and nirvanalogy.**

The Greeks called the natural sciences physics, while metaphysics was the science of that which was behind (meta) physis (nature) though the word originated as meaning that which was behind physics. Natural philosophy is now the term which covers the whole science of the worldprocess or nature. We now add a fourth branch of philosophy, the science of the result of nature because every process has a result. In one sense this branch is entropiology, in another it is nirvanalogy or the science of death. For the present it is mentioned only to complete our list.

In regard to nature we are not concerned with all empirical details of research, still rather chaotic, but with the general principles which as "laws of nature" are leading theoretically in the explanation of nature. It may be mentioned again that it is an architect who shows in this work copies of his worldplans, the fitting of which to the multiform facts he must leave to the specialists. And it is understood that in case a single uncrippled fact is established to which these principles do not fit, they must be wrong, because this is a test of truth. The foremost principles are 35 years old and from 1914 to 1921 a prize of one thousand dollars was offered for their disprove, but did not come.

The systembuilders of philosophy generally preferred the tearing down of older systems to the upbuilding of new systems, and often got no further. I prefer to first build the new after which the old falls by itself,

requiring only to show where the old mistakes were made.

Since measuring and mathematics are closely related the latter cannot be avoided. But our mathematics shall be as simple as possible, shown mostly graphically, because I want to reach people who are direct thinkers and whose healthy common sense has not been spoiled by poisonous "theories of cognition" but who have preserved their "naive realism."

After this introduction, we will now start with our new ontology or science of the world-being.

## II. THE ESSENCE OF THE WORLDSTUFF

The Greek word for being is *on* and, therefore, ontology the science of being. Since that which is being and fills space is called stuff, ontology in its modern sense is the science of the essence of the worldstuff. It is the first problem that must be solved before a scientific cognition of the world is possible.

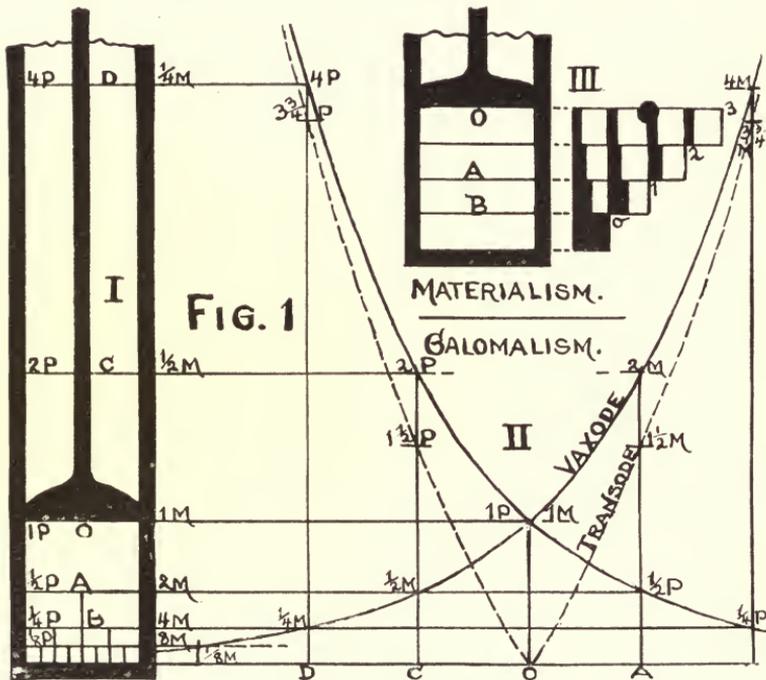
Several attempts of the older philosophers to explain this essence were destroyed by later critiques, until a scepticism took place and some modern philosophers said that the essence of the world was "unknowable," merely believable. This was done partly to save the religions from science and partly because there was thorough discouragement.

Of course those who cannot explain are no philosophers, yet there are "Professors of Philosophy" who do not philosophize but explain by their queer "cognition-theory" why in a world of "mind and matter" the former can never cognize the latter, which undoubtedly would be true if there were such a world.

Science slipped away from the stuck philosophers and went its own ways. Its workers took stuff in their hands and experimented with it until its essence was perceived. The result was expressed in several "empirical laws of nature," the language of which is materialistic but the meaning of which is not because it conflicts with the fundamental principles of materialism.

The first man who discovered the stuffessence without though recognizing it theoretically was Boyle, after whom the gaslaw was named Boyle's law. It is also called Mariotte's law, but it seems the English have proved their man was ahead of the Frenchman. This matter of nationalistic egotism is of no great importance.

We will not study the graphical illustration which I have drawn thirty-nine years ago of this law and which is different from the official illustration.



Part 1 of our first figure shows the section of a cylinder with a bottom and piston. The air under the piston we call our airbody because it is a certain amount of substance which in a certain condition is of a constant spacial mass of stuff.

When the piston is at "O" as shown, it exercises neither pressure nor suction on this body which is quietly at equilibrium with the outer air. We call this point our zero (o) and we suppose that here the counterforces of the air, its passive cold, "M," and its active heat, "P," are equally

strong, no matter if loose or latent. We give the value of a unit to each force: "1 M" and "1 P."

We now begin to experiment with this airbody and observe how it behaves itself. Why its passive force is called "M" and its active force "P" we shall see later. We press the piston down to "A" thereby reducing the volume of our airbody by half. What has happened within it?

The entire passive force, "M," is still there, because on account of its passivity, it had to stay; but its strength intensified in half the former space to "2 M." But this force is not pressed together like bodies or atoms, but is merely strengthened within half the former mass of the body.

The active expanding force of stuff, heat, had to partly reduce proportional to the reduction of expansion of the body. It was exerted on the outer world, expanding it to the same extent as the airbody was reduced, so as to keep space filled. However, this heat does not "blow like ether-wind through the molecules of the enclosure," but takes the form of temperal heat as the same factor of the stuff-essence. The intensity of heat, mostly latent or potential, of our airbody, always proportional to its extension, has been halved and is now " $\frac{1}{2}$  P," which it could not be if treated in the mechanical manner. That this heat weakens as the volume reduces is not only logical but positively demonstrated by experimental science.

It may help those of mechanistic habit of thinking if we put compressibility for heat and expansibility for cold and then say that the former has been reduced by half when the piston has arrived at "A," while the latter has doubled. But it presupposes particles that are pressed together or separated, while in reality it is the counterforces of the air, the passive and active, which are strengthened and weakened in this action, which is not a mechanical but **dynamical** conception of it, as will appear plainly in the further development.

Through this first and simple step in our experiment the worldstuff was caused to show us its essence which is

no such "unknowable" as philosophers who did not know it tried to make us believe.

We make a second step in our experiment by pressing the piston down to "B." Everything said about the step from "O" to "A" is repeated. Our airbody is again reduced by half, its passive force is doubled to "4 M," and its active force reduced by half to " $\frac{1}{4}$  P." When we do a third such step of action we get "8 M" and " $\frac{1}{8}$  P" as the **dynamic** condition of this body. 91

If we could press hard enough to extend this action into infinity, measuring it with grades of momentum, the passive force "M," reacting against the pressure, would become infinitely strong, and the active force "P" being no resistance, would become infinitely weak, but both would still be there and neither would be almighty nor alim-potent, because neither would be an extreme nor absolute. Pure absolute force is an impossible extreme and, therefore, the stuffication of forces, the forcestuffs, such as matter, ether, spirit, etc., impossible. The philosophies which start with the supposition of such forcestuffs, are, therefore, mistakes.

In the logical extension of our experiment we can never reach a point where the expanding force is null unless we would be strong enough to press this airbody out of space, which though is prevented by its passive force, increasing to the same degree as the pressure. And as long as there is expansion there is also expanding force, heat, in direct proportion thereto. The "absolute zero of heat," of the materialists, so much needed to obtain pure matter, is therefore, an illusion.

What we call forces in an inductive way are no entities existing by themselves, but they are tendencies of conditions, heat the tendency to the infinitely warm and cold the tendency to the infinitely cold condition of stuff; these conditions remaining the proportions between the tendencies or forces. It is consequently impossible to make stuffs out of them as the extremistic or onesided philosophies of the past have done in their fundamental hypotheses.

Cold was driven to the extreme of coldstuff, materia, matter, and heat to the extreme of heatstuff, spiritus, ether. The materialists could not accept heat as stuff and made it a property of their matter, atomic vibration, molecular motion, purely mechanical, though still called dynamical. And we now explain heat as an essential factor of the stuffessence, without which there could be no extension and stuff. Since heat is the wandering force, attending to the equalizations of conditions, it is the active force in nature.

Returning to our experiment, we let the piston jump back to "O" and then pull it up to "C," thereby doubling the stuffmass, not the substance, of our airbody. Heat from the exterior now has exerted itself on it, and gained a strength of "2 P" while the strength of cold has become " $\frac{1}{2}$  M." At "D" we get "4 P" and " $\frac{1}{4}$  M." In the logical continuation of this pulling action "P" becomes infinitely strong, opposing the pull, and "M" infinitely weak, because this body cannot gain any more passive force but must extend the original "M" through the entire mass, no matter what its size may be, always inversely proportional to this mass.

An absolute zero of cold, heatstuff, ether, spirit, is, therefore, also impossible, even in a so-called "vacuum" which is only a traditional technical phrase, begging for a real scientific basis.

No matter how much we compel this airbody to expand and increase its stuffmass, filling the larger space, its substance remains constant because it is its mass in the normal condition at "O." The materialists should consider that this body must always fill the given space, no matter how hard or soft it may require to be or what its weight may be; its volume, therefore, is the true measure of its mass. No hypothetical ether or motion is required to be added to this body to gain a greater volume. The worldstuff, filling space completely, is continuous, symmetrical, equally commensurate in any space, indivisible, and incompressible; only its passive but not fixedly rigid force can be pressed into a smaller vol-

ume, because it is not absolute but a conditional tendency without extremes.

Part 2 of our first figure illustrates the graphic result of our experiment: The equal grades on the axis "D B" show equal grades of action, measured in time and force or in momentum, and the curves for "M" and "P" by their deviations from the axis limit the opposite growth, the waxing of the forces. In this new application they are called the **vaxodes** while in pure mathematics they are logarithmic curves. The plane between a vaxode and its axis is a vaxant and a pair of them, as shown here, is a contravaxant. But without going far into mathematics, this important point must here be emphasized:

If we multiply the two ordinates in a contravaxant on any point of the axis with each other, we receive a constant product, in this case our unit. Since these two ordinates represent "M" and "P," their product is constant. We call this constant forceproduct **galom**, because a name had to be invented for it, there being none for this new concept in the languages.

Through the entire experiment, in time, and through the entire varying volume, in space, in the mass of stuff, this galom remained constant, the only thing that remained constant, no matter how we worked.

Constant and absolute in time and space, **galom is the essence of the worldstuff**, anyway so far when that stuff is in the gaseous condition. Boyle's law of the inverse proportionality of pressure and volume in our experiment really means the same as above explained, only that it was not applied to the counterforces of the airbody which was simply supposed to be elastical. But it is just in this application wherein lies the philosophical importance of that law. It, therefore, did not influence philosophy.

The older graphical illustration of Boyle's law was a rectangular hyperbola with units on the abzissa which represented volumes, thereby trying to give the matter a mechanical character. Instead of measuring mechanically in space, we measure with units of action or momentum, to determine the relations and proportions of the

forces, which has resulted in a new philosophy called **Galomalism**, based on this discovery of galom.

It seems it took an architect to find that here was something which could not be measured in the architectural or mechanical manner, because if it could the lines for "M" and "P" would have to be straight, and their deviations from the axis angles, which would give us a mechanical addition and subtraction of the forces, as we will see later.

Part 3 of our first figure shows the position of materialism toward our experiment. The airbody consists now of say one part of material atoms and three parts of empty space, or to take in dualism, of three parts of ether which, being heatstuff, is as resistless as empty space. Invented ethers with some degrees of material resistance, being inconsistencies, we cannot consider.

If we now press the piston down to "A," two parts of the resistless get lost, and if we press it down to "B" all is lost except the material atoms, which are now packed together solidly and cannot move. They cannot be compressed any further, because each atom is incompressible, consisting of absolute stuffified resistance. We have arrived at the limit of our experiment. And even if the almighty with his absolute activity would try to compress this body any further he could not do it because here he would be up against the almighty passivity of his counterpart.

Since such a point cannot lawfully exist in our experiment and since in general such a mechanical treatment of the result of it is unlawful, experimental science with Boyle's law has disproven materialism. The hope of some materialists to reach the real zero of heat before the explorers reach the northpole is in vain because there is no such zero. It is now also disproved that heat is motion because if it were there could be no more of it under "B" and its zero would be attainable.

If we return from this unnatural materialism to part 1 of our figure, we find that we can substitute pressure and pull on our airbody by cooling and heating of it.

Cooling to "2 M" drives the piston down to "A" and heating to "2 P" drives it up to "C." This is said by the proven laws of Gay-Lussac and Charles which are the theoretical basis of the thermometer.

It follows that in all changes of temperature cold and heat remain inversely proportional and their product, **galom**, constant. The thermometer is what it is called, **heatmeter**, because the heat's intensity is proportional to the extension of a body, but it is not a measurer of temperature, as the materialists conceive it.

Temperature is a phase of stuffconditions in which the proportions of cold with heat are but loosely bound and easily changed in equalisations. Since the counterforces are here also inversely proportional, the temperatometer must have a logarithmic gradation instead of a mechanical, as we shall see later.

We have now seen that no mechanical influence, pressure or suction, and no thermal or rather temperal influence on our airbody can change the absolute galom, the essence of its gaseous stuff. But not all gases are perfect as such, but most of them have tendencies to liquid conditions, being more or less near to them, which requires that we now concern ourselves with the liquid and solid conditions of stuff, to show that the changes of latent states ("aggregate states") do not change our galom because as the absolute it is independent of conditions.

### III. GALOMALISM

The World cognition which is based on the knowledge of galom as the essence of the worldstuff is named Galomalism which takes the place of the monistic and dualistic theories of the world and nature.

We have seen that in the purely gaseous conditions of stuff galom, the multiplicative product of the counterforces, is absolute in space and time, which is the first requirement of absolute being.

However, in reality there are other conditions beside the gaseous, such as the liquid and solid. The experiment of figure 1 cannot well be applied to these

conditions and must be substituted by others more complicated. We know that gases can be made liquid. Interior spanned tension now takes the place of the exterior enclosure. The many internally bound conditions form the various substances, latent and chemical, which do not change stuff as the space-filling, because full is full, and cannot vary.

Since the absolute essence of stuff must be independent of all conditions, it is required that the counterforces are inversely proportional and their product, galom, constant also in latent and chemical conditions.

Substitution of pressure by internal tension shows itself already with gases. The experiments show that the harder the pressed air becomes the less pressure is required to make it still harder, which causes slight deviations from Boyle's law. And the various gases show similar deviations according to how hard they are in themselves or how near they are to the liquid condition. A permanent or ideal gas which always behaves according to Boyle's law does not exist.

We, therefore, must investigate the periodically spanned and tensed stuffconditions of the various substances with other experiments which are too complicated for a graphical illustration for which reason we shall here consider only their results, expressed in laws or formulae.

The principal law is that of Dulong and Petit which says that in case we multiply the specific weight and heat in any chemical element, we receive a constant product. The law of the chemical constant has later been extended to all chemical substances, though according to the bylaw of Neumann small differences exist between the physical classes of various "combinations" which may be explained by different porosities.

The materialists called the passive factor, "M," atomic and molecular weight because their passive force is stuffified to "matter" with constant weight, absolute and unconditional. That the weight measure is but relatively reliable and that this causes variations in the

said product if it is taken as the passive factor of it, is a matter we shall consider when explaining gravity.

Galom the constant forceproduct, therefore, also exists in all the chemical stuffconditions. That this fundamental law finds little attention in the materialistic works on chemistry and is sometimes hardly mentioned is explained by the fact that it is very inconvenient to the materialists because it has been tried in vain to connect it with the materialistic hypothesis. To call the constant product "atomic heat" respectively "molecular heat" has no sense in materialistic philosophy.

At the materialistic zero of heat is but the "material" factor and no thermal, therefore no product of the two. Above this point, matter and heat in extension are added and not multiplied, as shown in part 2 of our first figure. The law of Dulong and Petit contradicts materialism as much as the law of Boyle, but for galomalism it is another foundation. Since the materialistic terms do not fit, we express the law of the chemical constant thus:

**In all the chemical conditions of the worldstuff chemical cold and heat are inversely proportional and produce a constant forceproduct which is galom, the stuffessence.**

Analogous to the chemical are those conditions of substances which the materialists have called "aggregate states" of their matter, the solid, liquid and gaseous. Since the atomic hypothesis has been discarded, we cannot accept the aggregation of atomic matter and, therefore, new terms are required to explain this matter. In leaning to the term temperature, I have used the terms "chemicature and latenture" in former books, but new terms create difficulties. Those periods in the conditions of a chemical substance we, therefore, simply call latent states or conditions. We have now four inorganic stuffconditions: the temperal and electrical, which are loose, and the chemical and latent, which are bound temporarily or permanently.

All these conditions are related and transformable ac-

ording to certain rules, which requires essential equality, allowing formal differentiation. We will understand this better when explaining the formation of substances. Every substance has the possibility of so many latent states as it is able to enter chemical processes with different weights, or better with different proportions of forces, a matter which has been termed "multiple proportions" but could not be explained by the materialists in regard to the remaining constant.

Oxygen has five latent states of which the common atmospheric oxygen and ozone are gaseous. Phosphorus, arsenic and quicksilver show latent state which are twice as heavy as expected of them in the relative list, which indicates warmer such states. Carbon has seventeen latent states of which graphit, diamond, and coal are solid. The theory of but "three aggregate states" is as wrong as the ancient theory of but "four elements." Gaseous oxygen and ozone are latent substances when compared with each other but are chemical substances when compared with carbon. In every latent state oxygen should have another or an additional name and be entered into the periodical list of substances.

Since now galom is constant in all chemical conditions, it follows by analogy that it is also constant in all latent conditions and that in both cases it is the same constant. It is understood that the transformations of forces and conditions which take place are possible only because the stuffessence is and remains the same in all of them. If there were different essential stuffs, such as "matter and ether," such transformations would not be possible.

An empirical proof per experiment of the constancy of the product of the passive and active forces in the various latent states of a substance is not completed as yet, therefore it had to be given in the analogical shape. It, therefore, follows that in all latent states galom is constant. Only one class of stuffconditions remains to be considered. In the next article electricity will be explained as abnormal temperature, which, therefore, must be of the same essence as normal temperature. Ohm's law says that ac-

tive electricity and electrical resistance are inversely proportional. Clark's scale of electrical resistance is graded geometrically instead of arithmetically. When two factors are inversely proportional, in this case electrical heat and cold, their multiplication product is constant. Therefore, in electricity also exists the constant galom and that it is the same as in temperature is shown by the fact that electricity easily transforms to temperature.

In physical chemistry are a few empirical laws which refer to physical or chemical complications. Expressed in materialistic language, the most important of these by-laws are the following: Neumann's law, already stated, is based on the supposition that weight is the true and full measurement of the passive force, materity, while it is but the preponderant attraction between substance and earth after the repulsion of heat is deducted. Since this preponderant attraction is proportionately larger the heavier a substance, the "molecular heat" is a little higher on an average with the heavier than with the lighter substances, as seen from the respective list.

The law of Avogadro says that equal volumes of different gases at the same pressure and temperature contain "equal numbers of moleculers," which means that these volumes have equal values and that a chemical equalization of them takes place between equal volumes of the elements. This law puts volume instead of weight as the true measurement of stuff.

The law of Delaroche and Berard states that for all gases in the perfect state and all gaseous compounds the product of "molecular weight and specific heat" at constant pressure has the same value. There are a number of other by-laws, such as, Boltzmann's, Van der Waal's, Clapeyron's, and others which do not contradict the principal law of the constancy of the forceproduct but regulate it for complicated physical and chemical cases, though their method is materialistic, and, therefore, not perfect.

In all inorganic conditions of the worldstuff, the chemical, latent, temperal and electrical, galom is the constant product of the counterforces in space and time, which

no action, equalization, transformation, etc., can change. The organic substances, being complicated results of equalizations in organic life, can have no other essence than the inorganic from which they came, which for the present can be proven only by the consistency of nature, because experiments which show it have not been reported as yet. There is no organic substance which has not been originated from inorganic, directly or indirectly, and which cannot be reduced to such, which shows the equal essence of both kinds, which is galom.

The proven galom is the absolute because it is independent from anything else in the world. The first requirement for the absolute is its constancy in space and time. Omnipresence and eternity have been older names for it which have become vague in the misuse, besides indicating a relation to our standpoint. For the absolute there is no space and time, but we need these concepts, abstracted from stuff and action, for explanations.

The constancy in time was claimed for any entity ever invented, but the constancy in space was not always considered necessary. The old entities filled space but partly; to fill it completely two entities were required, such as matter and ether. Yet humanity felt early that but one entity should exist and that it should be omnipresent or constant in space.

Through its spacial constancy galom, the being in space, filling it completely, becomes the galomal worldstuff, omnipresent, infinite and eternal. It leaves no room nor possibility for the existence of anything else besides it.

Galom, the pure being of all existence, is absolute also because it has no relations nor conditions for nothing can happen to influence it. All conditions and happenings are matters of the proportions of the galomal factors without altering galom, their constant product. It is also independent of our units, numbers, laws, etc., and if we express it by the worldlaw of the constant product of the counterforces, we can base it only on experience, which is limited to conditions, as a logical induction from those experiences.

Experience, the source of all knowledge, shows us conditions and forces of stuff which are differing and can, therefore, not be its essence, though in the past the forces were considered that essence, thereby gaining passive and active forcestuffs, such as matter and ether. But the empirical laws which are logical inductions from experimental experiences, show the forces as factors of a constant, as factors of being and not themselves as beings, which by necessity must be that of which they are essential factors, namely their constant product.

How these forces may otherwise be related to each other, inversely proportional, and in how many conditions they may be the tendencies does not concern galom which remains constant in them all. It is indifferent to the differences of conditions because it is no power as the absolute has often been wrongly conceived. If it were a power it would not be absolute but related to something over which it were a power. The differences in the world, therefore, do not apply to galom. There is but one kind of worldstuff, the galomal which is neither material nor etherial nor their mixture. These hypothetical stuffs do not exist.

In experience we meet the conditions of the galomal worldstuff, their spacial and timely distributions and what happens in them, no matter if in "the I or the not-I." These conditions as causes, their changes as process and the result thereof as final condition will be explained in our metaphysics, physics and nirvanalogy.

The ontological question which is the first is now answered by the proof of galom, which is the established basis of galomalism.

#### IV. REALITY

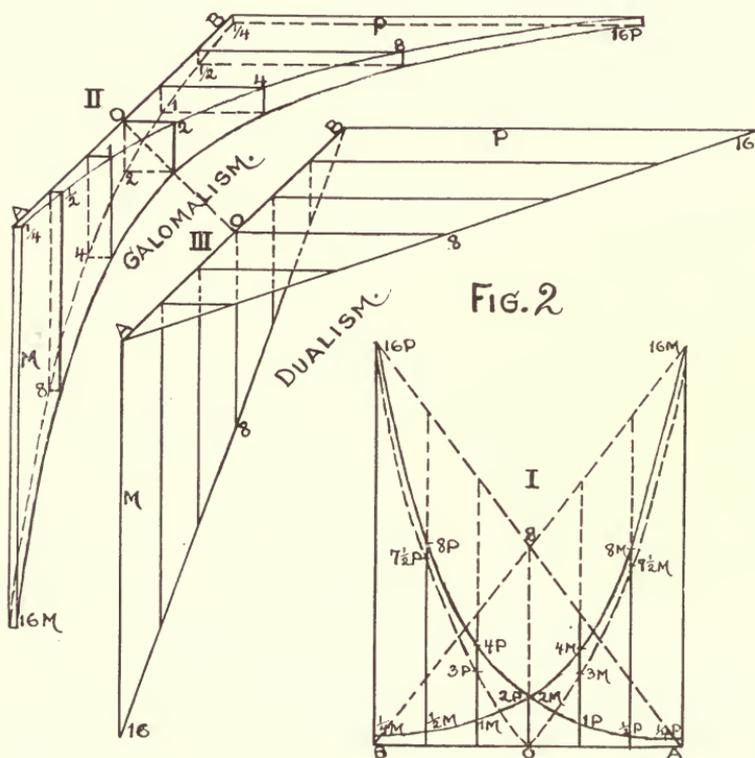
Our ontology being established by the proof of galom it follows the second branch of philosophy, called metaphysics or the science of reality.

Galom is absolute being and the worldstuff its existence, which would be also in case there were no reality and nature in the world. What then is it about stuff that

causes and acts and forms reality? What is it that is behind (meta) nature (physis) and is the metaphysical?

The metaphysical realities of the old philosophies went down under critique; we will look at them after we have established our own.

In the previous articles all the so-called "empirical laws of nature" were welded into the one worldlaw of the constant forceproduct as the absolute worldbeing. Those



"laws of nature" are not what they are called, because nature is the process that goes on in the world, while those laws refer to the stuffconditions, which cause this process.

These empirical laws or formulae are ontological in that they contain the constant forceproduct, galom, and they are metaphysical in regard to the forces of stuff and their proportions to each other within the galom; they are

formulating the stuffconditions behind nature, are, therefore, metaphysical.

The condition of the world is partly out of dynamical equilibrium which as cause was not caused but existed from eternity. It is not required to suppose that there was once equilibrium. Logically possible is any case. Let us, therefore, take the condition of the world as it is as a fact of experience, to be explained and understood.

The empirical laws formulate the metaphysical conditions of the worldstuff which are causing nature as the process of the equalization of these conditions. The law of equalization, therefore, is the law of nature.

The above figure is a copy of a drawing I made about thirty years ago. It illustrates better than words can do, the galomalistic metaphysics. Part 1 is again a geometrical figure of the consolidation of the empirical laws. "AB" is the axis and the upright ordinates, of which two stand on one point, in reference to the old sexual-symbolical form of philosophy are called materity, "M," and paterity, "P," which take the places of the old extremistic materiality and spirituality which had no co-relativity.

If we multiply "M" and "P" on any point of the axis we receive a constant product representing galom, which in this case is taken to be "4" to show that it is not a fixed unit because number-mysticism is excluded.

The dualistic doctrine is represented by the dotted lines and angles with the axis. Here the sum of the coordinates is constant, same as the sum of matter and ether in space. But the empirical laws require multiplication instead of addition of the two opposites, which excludes dualism as unlawful.

The two dotted curves arising from "O" represent by their diviation from the axis the preponderant parts of the forces which exert themselves in nature. These two new curves are called transodes and their planes with the axis transants, representing transantism, the law of the transant or preponderant forces.

Part 2 of our second figure is the isometrical or perspective representation of the metaphysical law. "AB"

is again the axis, but the ordinates for "P" are now laid horizontal, and for "M" vertical. The constant product of "M" times "P" equal to "4" is here represented by sectional oblongs the varying forms of which represent the conditions and the sides of which the forces of the world-stuff.

The counterforces are shown here as the varying dimensions of the constant cross-section of a body, which could be extended infinitely at both ends and in which all possible conditions could be represented. The constant crosscut shows galom which is not frigid, solid, nor any passive or active power and not affected by conditions and their changes.

The sectional conditions are incentive to equalizations through which they strive to the normal condition at the square "O" where the opposite forces are equally strong and satisfied. These sectional conditions are, therefore, the metaphysical reality, forming two antipolar regions of reality.

Let us now look at part 3 which is the figure of dualism. If we apply addition to the ordinates on the axis we gain the constant sum of "16," representing two independent forces the stuffication of which, thoroughly inapplicable, produces the forcestuffs matter and spirit or ether. Their constant sum means the even filling of space by them, the complete filling of which is meant also by the constant product in "2." But if we multiply the dualistic factors as required by law, we gain varying products.

Multiplication though has no sense in this case because we have here no factors but independent forcestuffs which have no relations to each other except their mechanical mixtures in space. Dualism dates from times when no "laws of nature" were established, but now that doctrine is unlawful; untrue it was always.

From below we can look into the hollowness of dualism: the filling stuff is missing, present are but two crippled abstractions of conditions which were made impossible stuffs. Neither monism with but one force-stuff nor dualism with two forcestuffs can represent

the stuffessence because they have but superficial side-stuffs while that essence is sectional and multiplicative. Everybody knows that we cannot gain the section of a body by the addition of its sides but that it requires the multiplication of them. The "thing in itself" or stuff in itself is the essence of it which it is on the average and sectionally, independent of externalities.

The entities of dualism are extremes: at "A" is the extreme of pure cold, made to matter, and the zero of heat, and at "B" is the opposite extreme of pure heat, made to spirit, and the zero of cold. Between them are the mechanical mixtures of the two. All monisms and dualisms are extremistic philosophies, because their forcestuffs are separated extreme without hermaphroditical co-relation, fit merely for mixtures and separations or for additions and substractions, but not for lawful multiplication.

Since these hypothetical forcestuffs are each entirely uniform and perfect, they cannot have conditions of their own; the conditions in the world, therefore, are but various aggregations of them, the equalizations of which take place according to the mechanical law.

Why these stuffs are not satisfied anywhere but want equalizations of their mixtures is not explained except with the addition of the hypothesis of essential motion as cause and purpose. Abstract motion receives here the value of a metaphysical force and kinematics becomes dynamics, an inconsistency invented to help gaining a metaphysics without supposing an external mover.

Returning to part 2 of our figure, we find that here are no zeros and extremes. In the row of possible conditions can be no point where one force is alone and the other missing. We may in thought increase "M" as much as we please, we must lawfully decrease "P" inversely proportional to the same degree or with the same quotient, without being able to make it null which is excluded mathematically and physically, because this force is always a factor of being but never being itself, as may be seen in the figure.

The size of the sections, representing galom, remains

constant, but the forms of them vary with tendencies in both directions. The sides of the oblongs are in one respect the factors of galom, and in another respect the tendencies of conditions which are abstracted as forces or causes of effects.

Since our galomal stuff is not absolutely rigid like matter, "M" and "P" appear as forces for the maintainance of the uniform filling of space by stuff, either through resistance or expansion, which cause changes of conditions. To be exact there are no forces as such but conditions, the tendencies of which we abstracted as forces: cold as the tendency to infinite coldness and heat as the tendency to infinite warmness.

These stuffconditions, here colder and there warmer, here harder and there softer than the middle or equilibrated condition, are bound internally or externally, either temporarily or permanently. If they are bound permanently as in the dead substances of the zero group, they cause no nature and take no part in it, but if bound but temporarily, like some in chemical and latent substances, or if as loose as temperatures and electricities, then the conditions strife to equalize and in that way cause nature, the equalizing process, and in this respect the stuffconditions are the metaphysical.

Between all these causing conditions, at the point "O" of our figure, is the condition of dynamic equilibrium, the indifference of neutralized forces, which must be considered as the normal condition in which the world would be if equalized throughout. At both sides from this zero of preponderant forces the inequilibrated conditions are graded in the "polarities," a term for it which we will accept, though here are no real poles which are extremes.

We now divide the world's condition in three parts: **First**, the apolar, non-polar, or dead part in which the counterforces are equally strong, and where, therefore, is no causality, no metaphysical reality, which as the normal condition forms by far the greatest part of the world; **secondly**, the warm-polar part in which heat preponder-

ates in different degrees, and **thirdly**, the cold-polar part in which cold preponderates also in different degrees. The last two parts are represented by the comparatively small pieces which are called the celestial bodies, their atmospheres and the nebulae and comets. The warm-polar part is much larger than the other because it has the heat that is missing in the cold-polar part, but the amount of cold is the same in both.

Between these masses of polarities are the immense masses of indifferent stuffs which have been conceived as ether. The differences that are between all of them are but conditional and not essential because it is all galomal stuff, essentially the same everywhere.

The two polarities in their opposition form the anti-polarity in the world which in the last instance is the reality behind nature, because the polar conditions are not satisfied but strife through equalizations to the apolar condition in happy nirvana. The manner in which entropy or nirvana is gained is nature, the worldprocess, in which that reality is active.

The relations between the various conditions express themselves by attractions and repulsions, according to how they are situated in regard to the necessity of equalization. This necessity is the cardinal necessity in the world and shows itself as magnetism.

In the manner of sexualistic symbolism we can say: Materity, "M," attracts paterity, "P," and repulses "M"; "P" attracts "M" and repulses "P," until both are neutralized in their indifference. That motherstuff, materia, matter should attract matter means as much as that feminality should attract feminality which is different from experience. But magnetism will be treated in a following article and is mentioned here only because it is also metaphysical as the energetic expression of the forces which strife for equilibrium. Force and energy were originally of the same meaning but are now used with the difference that the galomal factors, considered metaphysically, are called forces and that the magnetic tend-

encies are called energies. Cold and heat are forces but their attractions and repulsions are energies.

The question arises: Why is the world partly out of conditional equilibrium?

A beginning of that condition could not have been, because it would have required an initial unwordly cause for it, or it would have been causeless since all causality is contained in this condition. An outer-wordly pusher could be supposed by those who had but a universe, but the infinite world leaves no exterior or interior room for him because it has no exterior nor interior. If the world had ever been in dynamic equilibrium without any deviations therefrom, nothing could have disturbed it in its rest and it would be dead and still in timeless quietude.

Even mechanical equilibrium shows that it is permanent if not disturbed from the outside, but dynamical equilibrium, indifference as shown by argon and its class, cannot be disturbed when fixed chemically. It is, therefore, necessary to accept that a limited dynamic inequilibrium of stuffconditions, a partial anti-polarity of the world-stuff has existed from eternity, which is just as possible a case as any other. What decides in this case is experience which shows us our part of the world in dynamical difference. Galom, the absolute essence, is not affected by it and does not care whether it is the one way or the other.

The further we think back in time the greater must have been that anti-polarity which reduces with every action. Especially the passive cold had caused rigid cold-polar conditions and substances which have been stagnant in dead, argonlike surroundings, until a time came when such bodies were attracted by and moved to warm-polar nebulae, made them their atmospheres and started the natures of solar systems.

But the world in the large is not as hard to explain as the world in the small, and, therefore, in the next article we will try to draw a picture of the "inner constitution" of substances in accordance with what we have gained above.

## V. SUBSTANTIATION

If the polarities in parts of the worldstuff had but the loose forms of temperatures, their equalization would have been simple and soon effected after the circumstances were favorable. Yet this is not the real case which shows periodical boundness in many conditions, through which substances are formed which we have before us daily but the inner formation of which is hard to explain. Substantiation means the forming of substances out of the worldstuff; a substance, therefore, is the compound of stuff and bound condition.

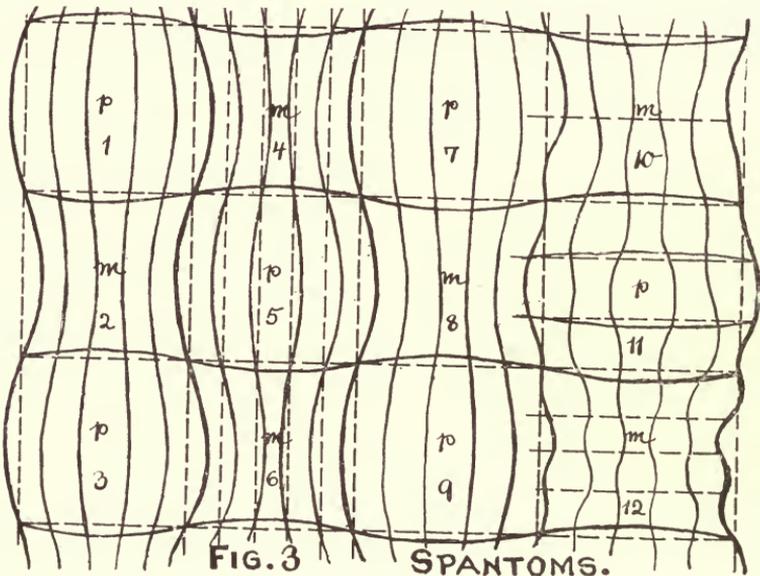
The materialists based their explanation of the "interior constitution" of substances on their atomic hypothesis, picturing molecules and their aggregations. The ether plays no part in it except for helping out as a spacefiller. In addition to some other suppositions this "constitution" has been useful as a string on which the chemists could hang their empirical pearls. But the physicists are no longer satisfied with it because they have new facts, especially in spectral analysis, Roentgen's rays, etc., which do not fit in with the old hypothesis of atoms and their mechanical aggregations. They have started to split the atoms and make systems of electrons out of the indivisibles, the constitution of which is at present under speculation.

The laws established in the previous articles require a new explanation of substantiation in harmony with them, of which we will make a beginning before criticising the old explanation. It is but a graphical beginning intended to show that a galomalistic explanation is possible.

The stronger the passive force, say cold, is intensified the more it is inclined to cause rigid conditions and substitute outer pressure by interior tension as shown by the liquidation of gases and other facts. But these rigidities are not extreme but can be influenced even in their highest degrees by irritations

in certain vibrating spans. Every substance has its own forms of such spans which we conceive as spanned parts and give the name of **spantoms**. For the formation of this word may be said a name is a name.

The drawing of figure 3 is a theoretical illustration of spantomic constitution of substances, insufficient it is true because shown as a plane while in reality the spantoms must be considered as bodies. The dotted squares represent each a spantom, and the wavelines



show billows in it. Of irritations like sound and light it is known that they are similar to pulsations with wavelines rectangular to the direction of the irritations. It is consistent to accept that all interior irritations of substances have similar forms.

The billows of conditions in a spantom consist of contractions and expansions of it while "m" and "p" are the maxima of cold and heat, the proportion of which to each other is constant in a certain bound condition of a substance. Motion is here as always circumstantial in time and space, and could be missing in which case the lines would be straight and no billowing going on.

If we now imagine the whole system in the shown irritation, "m" and "p" and all the conditions between them run through the otherwise uniform mass in the form of spantomic fluxations in order to distribute received influences uniformly or to equalize new conditions. The law of the constancy of the forceproduct and the perfect filling of space by stuff are maintained in this case, as well and for the same reasons as in the case of figure 1, only that now contractions and expansions of the spantoms take the place of pressure and suction, which is no concern of galom.

If the influence from the outside has the form of simple temperal action, either cooling or heating, the spantom as a whole contracts and expands as a body, maintaining its resemblance, and, without changing the proportion between "m" and "p" as long as no critical points are reached. While billowing the form of the spantom deviates from the square as shown because its length also has variations.

A spantom has no fixed seat in the substance but is the form and manner in which this substance's elasticity is spanned and transfers influences. The squares in our figure are either rectangular to the influence, especially in the air, or parallel to the surface of solid bodies. In the last case, pulsations are originated at the surface which have waveforms and timely constant pulses which determine the color of the substance.

Since the passive force with its inclination to rigidity limits the elasticity to spans, the spantoms are definite properties of the substances, the other properties of which can be explained therefrom. It follows that the spantoms are the more determined the harder and tougher the substance. The gases also have their own spantomic substantiations but their spantoms are weak and let received irritations like light and sound run through with their own forms of pulsations, transmitting them indifferently. Transparent liquid and solid substances do the same with the fine lightbillows

but resist the larger sound-billows. However, I must leave it to the physicists to explain the different properties of substances in this manner, if they are no materialistic believers.

The spantoms have measurable sizes and can be changed. Shaving of slate cuts its spantoms and changes its color. The great variety of spantoms makes up the many-colored world in which we live.

It is not required to suppose that there is always and everywhere a great irritation of the spantoms. That terrible molecular uproar of the materialists, which may be transmitted but never quieted, has no sense in this case. A substance laying quiet a long time in a dark space is internally equalized and quiet. Only when a new impulse such as light strikes it a spantom action starts again.

If the surface of a body receives mechanical action, such as strikes, frictions, etc., the spantoms are first pressed in abnormally and strike out with abnormal strength. To do this they must acquire a higher heat for the larger expansion which is taken from the surroundings, especially from the air, the same as in the case of the pressed airbody when released. The gained heat is then introduced by spantom action into the interior of the body, intensifying its heat to a higher degree. The way the materialists explain this matter is known.

If the surface of the body is influenced stronger than the spantoms can transmit heat to the interior, abnormal expansions and forms of the spantoms at the surface are caused, indicated at the right side of our figure. The normal spantom is connected with those of the interior and prevented to absorb the impulse in normal shape; in this disturbance, therefore, it is compelled to expand abnormally by forming smaller spantoms within the larger in order to rush the equalization with the interior. The spantoms 10, 11 and 12 show secondary irritations in the shape of temporary small spantoms. The form of temperature

at this body's surface is now **electricity** with intense activity to equalize to normal temperature. Electricity is abnormal temperature on the surface of abnormally influenced bodies. In an electrical condition heat is "negative electricity" which we call electrical heat and cold is "positive electricity" or better electrical cold. The terms negative and positive applied to electricity, dating from the fluid period, are wrong because negative forces do not exist. And there was this contradiction: heat was called positive and cold negative, while the electrical force analogous to heat was called negative and the other analogous to cold positive. This confusion was partly the cause why electricity was not long ago recognized as abnormal temperature.

Lightning is "negative" electricity. It is heat from the sun retained by a cloud until it crashes through the insulating air to the earth where it takes the form of electrical heat until absorbed in temperature. The difference between high heat and "negative electricity" is but one of spantomic formations while essentially there is none.

Certain electrical influences on gases also cause variations of spantomic conditions and actions which run through the air as different forms of light. Spectral analysis shows how glowing gases vary their spantomic formations to radiate the abnormal conditions.

To connect the latent states with the chemical, we consider again the materialists' "aggregate states." Experience shows that by variation of pressure, heating and cooling, these states can be changed. The spantom of a liquid by heating is overstrained, ruptures and becomes two or three new spantoms which are less rigid and in which the increased heat is no longer loose or temperal but bound in the new spantomic conditions as latent heat. The old substance has become a new one with simple rations of volume and weight to the old into which cooling and pressure

can change it again. What happens in all such cases is spantomic reconstruction including binding and loosening of heat.

The analogy of latent with chemical substance mentioned in the third article is here important. To become ozone common oxygen in fire frees more than half of its latent heat which becomes temperal heat in the surroundings. Ozone is then a new substance which enters with its own proportion of forces into a chemical equalization with another substance, volume for volume. The hypothesis of "multiple proportions" is not required as soon as we consider each latent substance also as a chemical substance.

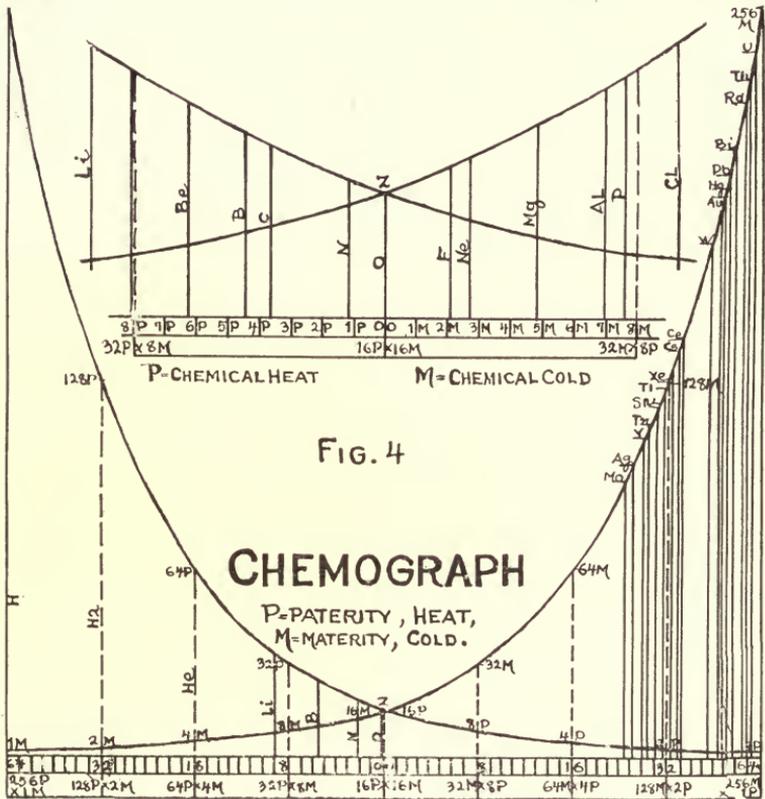
The mechanistic theory which explains the changes of substances or the chemical processes as additions and substractions or as remixing of its unchangeable forcestuffs has but "combinations" and separations of these "entities." It could not explain the creation of new substances in chemical processes anymore than it could explain mental processes. In the spantomic system the process is not mechanical but dynamical, a difference already explained by the separation of dynamics from mechanics. We now look at a figure which when complete will represent the entire known realm of chemical reality.

The above fourth figure is a chemograph in which all chemical and latent substances are to be drawn, after which dynamical chemistry may be planned on the drawing board. This figure is a contravaxant with eight octaves which have a total length reaching from one known chemical extreme to the other. In the middle is zero "O" and the equilibrated zeron, close to which is the nearly indifferent atmospheric oxygen and further to the right is ozone.

On the right side from the zero are the duprdinates for the cold-polar substances with grades of "M" and on the left side are those for the warm-polar substances with grades of "P". Each octave is subdivided into eight grades, not in unharmonic ten which

nature does not have because it works with two as quotient.

At or near the left extreme of this figure is the duordinate for hydrogen with about 1M X256P as



the factors and near the right extreme is uranium. The figure is too small for showing many substances; it should be one meter or more in length. Every substance whether chemical according to the usual limited sense, or latent-chemical in the widened sense should receive its duordinate in this chemograph.

When it is completed the already known periodicity will appear more harmonious, but irregularities will still be shown because the one factor with which it is measured, the weight represents not the full but only the overweighing materity "M" in relation to the con-

dition of the earth as we shall see in the VII article. Until this factor is adjusted to volume measurement, irregularities will be there. Spacial value of stuff must finally take the place of gravity values. In the completed chemograph the force-proportion of a product of chemical equalization can be found by drawing a duordinate at the middle between those of the elements, but this belongs to the law of equalization as the law of nature illustrated in the eighth article.

The "sceptical chemists" who are able to doubt the infallibility of "atomic weight" may elaborate in their empirical manner this chemograph.

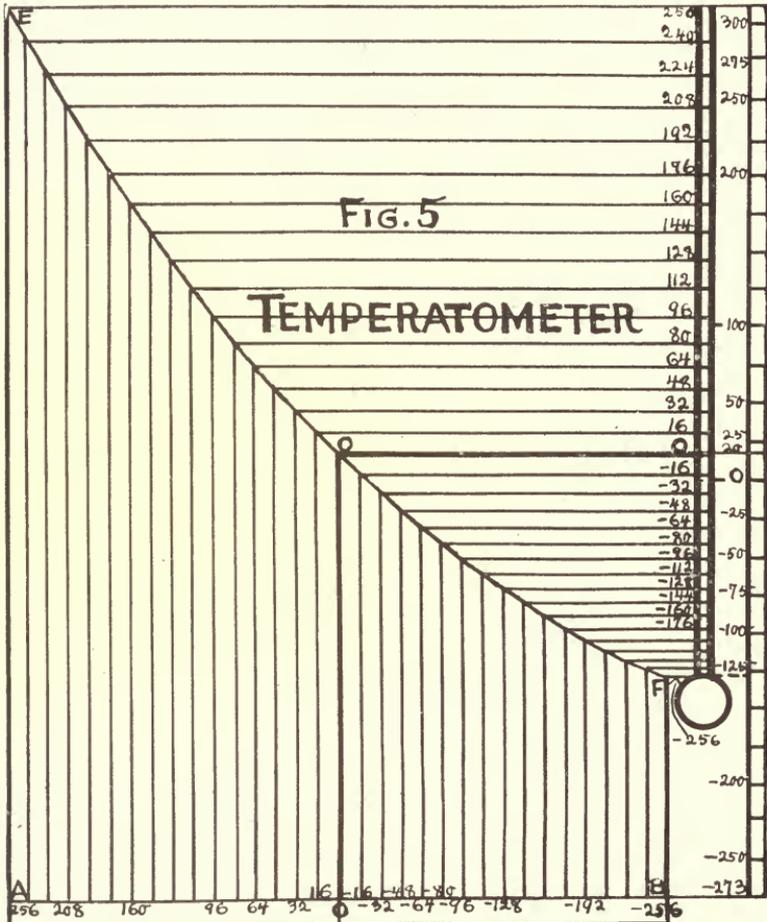
## VI. TEMPERATURE

Temperature is the loose and changeable condition of a substance between the limits of its spantomic constitution. The spantoms indicated in our third figure can expand and reduce their sizes until certain limits are reached where a further influence in that direction ruptures them and causes the formation of new spantoms, at the same time, either binding or freeing more heat. The conditions within these periods between the spantomic changes are the varying temperatures of a substance. In general temperature is the loose phase of conditions of which we abstract passive cold and active heat as the two opposite forces. After it has been shown in the second article that the constant galom exists also in temperature and all its changes, a special article on this feature of the world would not be required if temperature did not play such an important part in life and science.

In analogy with temperature the periodical boundness of a substance was called its latent condition (**latenture**) because we cannot accept the wrongly conceived "aggregate states" of materialism. The latent and chemical conditions are spantomically bound periods of temperature.

The separation of dynamics from mechanics, made

before, is important in regard to temperature because it has to be determined if it is to be measured in the mechanic-arithmetical or in the dynamic-logarithmical manner. Let us look at a known experiment. We take an upright tube and apply thermometers to it at equal distances and then fill it with water. This



column of water we heat at the top and observe how this influence exerts itself downward. The thermometers now do not show a mechanic or uniform decrease of this thermal action, as required by the materialistic principle, but the decrease has the logarithmic form. We now vary our experiment.

In our fifth figure "A B" is a round bar of constant thickness, the length of which we divide into two equal parts, and each part in 16 main degrees which again are subdivided each in 16 final degrees of which the bar now holds 512. This subdivision is chosen for natural harmony which does not agree with centigrades.

We now heat the bar at "A." This influence of its temperature extends along the bar with uniform decrease, but the thermal induction decreases logarithmically, as shown above. The heat at "A" is now "A E" and at "B" is "B F" as shown by the ordinates on the bar, and between them the logarithmic ordinates show the present thermal degrees, limited by the curve "E O F." We now draw ordinates on the grades of the bar, to this logarithmic curve and from there rectangular to the first cylinder which is to become our thermometer. It is plain that we now gain a logarithmic instead of a mechanical gradation of this meter.

We now see the difference between temperature and heat, which must be marked. Temperature is the proportional condition of cold and heat, which changes uniformly along the bar, transmitted by uniform pulsation of its spantoms, and in order to measure temperature cold must be taken into consideration, as well as heat, because it is their proportion to each other which determines temperature.

The thermometer is what it is called, a heat measurer, but it is no thermometer. Since heat intensifies proportional to the increase of volume, the thermometer is graded mechanically which leads to the curious consequence of the absolute zero of heat at nothing. When dealing with reality no such zero is possible neither in experiment nor in correct theory. The bar "A B" was graded in equal grades of temperal actions in which cold plays as much a part as heat, both varying inversely proportional. Cold is no "negative heat" but the counterforce to heat, being equally positive and important.

The first cylinder is now a thermometer with logarithmic gradation, each grade representing a grade of tem-

peral momentum, similar to the experiment of figure 1 and for the same reasons which we need not repeat. In each such a grade the intensities of cold and heat change inversely proportional and, therefore, they are grades of temperature which have equal values in equalizations as we shall see when studying the law of equalization.

The question arises, where in reality should be the zero of temperature of our meter? Instead of taking it arbitrarily we will let nature determine it. The natural zero of temperature is there where cold and heat are equally strong and neutralize each other. I do not know exactly where this point is. It is there where no temperature is perceivable or where neither of its forces affects our feeling, were there is imperceivable mildness which we perceive neither as cold nor warm. We are with our feeling at this zero and judge of temperatures from there and should measure them from that point.

If the world were fully equalized and of uniform condition there would be no other but zero-temperature where neither cold nor heat is preponderant. The tendency and strife of all conditions is toward that point, the dead point in the middle of all temperatures and other conditions. Our feeling tell us that this zero lies between 60 and 70 degrees F. but it is not quite sure as to the exact point. The women select this point several degrees lower than the men because their sexual polarity is on the cold side and the men's on the warm side from that point.

Until the natural zero is scientifically established we take 68 degrees F. or 20 degrees C. or 16 degrees R. which are about equal temperatures for this zero. Alongside of our thermometer is shown a Celsius thermometer with centigrades. Its zero is 20 degrees C. lower. In accordance with mechanical subdivision the absolute zero of heat is 273 degrees C. under this point. That this method leads to the zero of stuff shows how unnatural it is, but the materialists are not responsible for it because their zero of heat is at the zero of compressibility of their atomic matter.

The gradation of the thermometer between the freezing and boiling points of water, the most important period of temperature for organic life, is nearer to that of the Reaumur than that of the Celsius thermometer. The thermometer has but one zero and no other limitations beside those given it for technical reasons. To reach down to an "absolute zero" has no sense in this case. The tube extends down to half the height from nothing to zero and the lower half is in the ball, the content of which is equal to that half.

In the experiment of the first figure the airbody was always equal in size to the volume of a momentum with the logarithmic base of two; in figure four this means that in the vaxant or plane formed by the vaxode or logarithmic curve with the axis, the part from "B F" to "O O" is equal to the part missing on the right side of "B F," which is represented by the ball under the tube. Since it is not likely that the thermometer will soon find practical use in this slow world, it serves here mainly for cognizing the world also in its temperatures.

Sound and light have been recognized as forms of pulsatory irritations with undulating motions. These forms are spantomic, no other illustration covers all the facts known in regard to sound and light, the first of which is merely irritation while the latter carries radiated heat.

The motion of a swinging pendulum reduces in the logarithmic form while the pendulations remain constant in time. The same law holds good for sounding cords and other vibrating bodies: mechanical progression of action as time and logarithmic increase and decrease of forces, again requiring the separation of dynamics from mechanics. The timely vibrations are mechanical, but the spacial and dynamical reduction of them is logarithmical and can, therefore, not be represented by an angle or conic section which are mechanical.

The vibrations of a cord cause pulsations of the counterforces of the air which transmits them indifferently to other bodies, and when striking our ears we call it sound. The shape of a trumpet is conical or mechanical and per-

mits the passage of but three notes of an octave, because it is not in accord with the law of sound. In the cornet this irregularity is overcome by means of changing the cone. The "ideal horn" which transmits any sound without changing it must be a vaxoid which is the rotative body of the vaxode or logarithmic curve. I had such a horn thirty years ago which was successful theoretically but was too short for musical purposes.

Light as pulsation of temperatures comes from sources where specific heat is changed to temperal heat which then runs through the air with its own original spantomic shape, determining its color. Our eyes are evolved to see but one octave of these colors because this answers the requirements of life.

What is above and below this octave appears white and black to us, but physics show us that there are octaves above and below that octave and it is probable that from the highest sound to the lowest color there is a continuous rise of pulsations.

I have remarked before that centigrades are unnatural and were therefore, not taken for the temperatometer. Counting with ten fingers caused the decimal system, but really we have not ten but eight fingers, and two thumbs. Since in reality there are two polarities everything in nature takes place in couples; our feeling, therefore, requires harmonious symmetry. In general the couples take the logarithmic base of two for actions and their progressions, which in sound and light causes the harmonious octaves. Not ten but eight is the base for a natural system of numbers. Every artist feels that eight is a fine and ten a discordant number.

Though number-mysticism, including dualism, is worthless ontologically because the stuffessence is neither unitary nor dual, and none of its factors, the counterforces, is a unitary thing-in-itself, yet in reality there are two counterforces with two as the base of their logarithmic relation to each other. Dualism accordingly appeared more natural than monism.

If the heating of the earth by the sunlight would not

influence the matter, the air at the earth's surface would be coldest and get warmer as we rise. Contact with the cold crust and the attraction of the cold of the air by the interior heat of the earth would require such adjustment which exists in regard to the chemical conditions of the air, the chemically coldest, being the heaviest, are below and the others rising above them.

That the reduction of the passive force of the atmosphere which the materialists call "the density of the air" though air fills space uniformly, takes place upward logarithmically, modified imperceptibly by the spheric law of the square of the distance from the centre, has been established by actual measurements many years ago. In the temperature this law is modified by the sun's light; it does not heat the air directly but the crust and this by contact the air, therefore, this heating influence is greatest below and reduces upward to a measurable height. We say the atmosphere becomes colder as we rise from which some have concluded "the absolute zero of heat beyond the atmosphere," but experiments with balloons with selfregistering thermometers showed that the coldness of the atmosphere increases to the troposphere and that a change takes place between the troposphere and stratosphere after which the warmth increases upwardly.

It is but logical that the immense masses of worldstuff between the small celestial bodies and their atmospheres, formerly conceived as ether, but consisting of apolar, dead stuff, similar to argon, have a zeronic, mild, dead temperature. The cold and warm temperatures and also chemical polar conditions are limited to the celestial bodies and nebulae.

## VII. MAGNETISM

None of the old philosophies has a consistent explanation of magnetism and gravity. That "the elements love and hate each other" was an old perception but it was empirical, not philosophical.

The assertion that matter attracts matter, motherstuff attracts motherstuff, may be philosophical or specu-

lative but is as unnatural and unempirical as the assertion that femininity attracts femininity.

The galomalistic explanation of magnetism includes gravity and is based on the proof that galom is the essence of the worldstuff. The two correlative essential factors, materity, "M," and paterity, "P," which as conditional tendencies we call forces, are equally important but of towardly opposite characters, striving for each other to effect their equilibrium in the normal state. These counterforces are satisfied only in their equal strength in indifference and the necessity to establish dynamical equilibrium is the cardinal necessity in the world, expressed as magnetism.

An active force can be satisfied only by a passive force of equal strength and vice versa. If in a condition one of these forces is overweighing the other the preponderant part attracts enough counterforce from touching conditions to establish the required equilibrium. Magnetism is the expression of these relations between different, especially antipolar conditions.

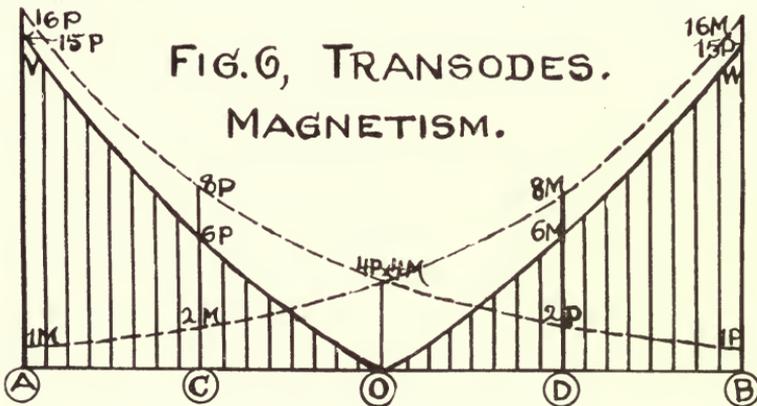
We call the galomial factors, cold and heat, **forces** and the two opposite tendencies of magnetism, attraction and repulsion, **energies** which represent the forces, and, therefore, are under the same law of inverse proportionality, mathematically established as contravaxantism, illustrated before.

Materity (cold, etc.), attracts paterity (heat, etc.), and repulses materity; paterity attracts materity and repulses paterity.

This sentence harmonizes so fully with experience that it is hardly required to argue it empirically, though it knocks over "universal attraction of matter." In a polar condition, say in a cold, the heat is neutralized by an equal strength of cold and the unbalanced part of cold attracts heat from the outside for its satisfaction. This is conspicuously the case in electro-magnetism. They are the preponderant forces which express themselves in the manner of magnetism by attracting opposite forces and repulsing similar forces from the outside.

In apolar conditions where both forces are equally strong there is indifference to the outer world. When two substances are in the same polarity, they repulse each other, no matter what the Newtonians may say about it. The polar gases repulse each other and themselves which causes their diffusions and the liquid and solid substances do the same in solutions.

Magnets with preponderant heat induce the touching substances and if these are air intensify the cold in them and thereby form a cold atmosphere around them which carries this induction further to distant substances. In this way by the induction of an atmosphere the attraction



of the heat of the earth is transmitted to the cool moon.

It has been said "a body can act only where it is," but by means of induction of external conditions a body can form an inducted atmosphere or "magnetic field" which carries its influence and distributes it according to the dynamical and mechanical laws. The atmosphere is a part of the body and the earth is at the moon. Zoellner's sentence: "A body is where it acts," is true.

Different stuffconditions show different forms of magnetism, such as electrical, temperal and chemical. Only in cases of large masses, such as the celestial bodies, this division seems to be of no importance. The two principal realms of polarity have each several periods of sub-polarities which have secondary magnetic relations which are connected with different degrees of conducting.

Our sixth figure serves to illustrate the magnetic relations between the various stuffconditions. The dotted curves we know as vaxodes limiting vaxants which show the law of these conditions. The curves "V O" and "O W" which are new and named transodes limit with the axis the preponderant forces which express themselves magnetically because they want equilibrations; "a" means attraction and "r" repulsion.

Equal volumes of substances of "A" and "B" supposed, and the small distance between them neglected, their magnetism is now as follows: "A" enters with a preponderant heat of "15 P" and "B" with a preponderant cold of "15 M" into magnetic relations in which they also are factors to be multiplied. Between "A" and "B" is now an attraction of "225 a." "C" enters with "6 P" and between "C" and "B" is an attraction of "90 a" but between "C" and "A" a repulsion of "90 r." Between "C" and "D" is "36 r" and between "D" and "B," "90 r."

The condition at "O" has no preponderant force and is indifferent. If the world would uniformly be in this condition there would be no attraction, no gravity, because here is the zero of magnetism, as it is also the zero of the temperatometer. But the gradation of magnetism is transodic because it measures preponderant intensities while in temperature we measure expansions proportional to heat.

Above it was supposed that the volumes of "A" and "B" were equal. If they are different, the mechanical law concerning space and volumes, modifies the magnetic relations. Three volumes of "A" enter with "45 P" and between "3 A" and "1 B" is an attraction of "675 a" which then is the energy moving them together, "B" three times as fast as "A" if not hindered by a much stronger attraction such as gravity.

It is known that in cases of small scales exertive attraction is found only between antipolar conditions while equally polar conditions repulse each other. But in regard to the celestial bodies the Newtonians suppose it to be different, here is to be but absolute attraction and no repul-

sion. The **perpetuum mobile** is also taken to be impossible in a small case but possible in a universe case. It is the size of the case which imposes upon many minds. Whether a body is comparatively large or small makes no difference in the essence of its stuff and the forces and energies of its conditions. Two celestial bodies of equal polar conditions, say both in the warm polarity, repulse each other instead of having gravity between themselves. The interior of the earth is warmer than the crust as some facts show, no matter now how we explain the origin of the earth. The higher cold of the surface is attracted by the interior heat which repulses the heat at the surface. It preponderates the attraction which we call the gravity of the earth. If the earth were equalized throughout the materialists would have no weight to measure their matter with. The stronger the passive force (temperal, latent or chemical) of a substance on earth, the greater is its gravity. The difference between the condition of the body and of the average earth needs to be not very large, because attraction between them is enhanced by the mechanical law, the size of the earth being so large.

Preponderant energies alone are assertive in nature and in this case in the form of gravity which is the preponderant attraction between the differing conditions of the earth. If this attraction on a stone has the form of pressure in rest, we call it weight and if it has the form of motion in air we call it fallenergy or "velocity." The weight of the stone is, therefore, the total attraction by the earth of its cold minus the repulsion of its heat. If we heat the stone it becomes lighter though hardly perceivable. Since there exists repulsion as well as attraction between the earth and our things it is but the preponderant cold of the latter which is represented by its weight which, therefore, is not a full measure of its matter, "M." Since weight has been considered as the absolute measure of "matter" its explanation is very important.

In the law of Dulong and Petit weight is taken as the opposite factor to heat; their product is not exactly con-

stant but is little higher with the heavier than the lighter substances, not enough to doubt the law. This variation is corrected by explaining that weight is but the preponderant attraction of the earth or its full attraction minus repulsion, and, therefore, weight is not a full meter of materity, which was made matter, but it comes the nearer to it the higher the cold of the substance, while the warmer substances enter with more reduced factors into the law as it was formulated. When a method is found to determine the passive force of a substance in another manner than by weight, the lighter substance will show exactly the same force product as the heavier because conditions cannot change the absolute essence of stuff.

All this is to be considered in regard to gravitation or the act of falling. I have a stone in my hand, its pressure on the hand is the energy called gravity in the shape of weight. The stone wants down to the earth. I withdraw my hand and the stone now presses on the air which is not strong enough in its resistance or passive force to carry the stone in rest. The stone collects so to speak the resistance in front of it, intensifies it, "compresses" it and does this in motion while it is carried by the air. Motion is collection of resistance to equal action and reaction and is the faster the weaker the resistance is normally on the spot. In an "empty space" would be no motion which required time.

Instead of in rest in my hand the stone is now carried in motion in the air until it reaches the earth, and this action we call its fall. At the start of the fall, the form of gravity is changed from weight into fall-energy, called "velocity," which does not begin with a zero as appears in some forms of the old law of the fall. We will recognize the modern conception of the transformation of "potential energy into kinetic energy."

If now gravity would be absolute and constant as in the Newtonian theory, the pressure of the stone on the air would be constant and with it its velocity, but

experience shows that an acceleration takes place. The Newtonians could not explain this fact because they did not interpret gravity but merely postulated it as attraction between their non-polar motherstuff. The modern energeticists though cannot avoid the question of the cause of that acceleration. In Newton's time it would pass to annihilate energies and let them come from nothing, but not today anymore.

Does the fallenergy increase by gravity streaming from the earth to the falling body? Impossible because it is no substance but a relation. Does this body take energy from the air and transform it to gravity? Or does it transform its low heat into gravity? Wherefrom comes the increase of gravity expressed by the increase of velocity? No answer! But as long as this question is not answered by the Newtonians their law of the uniformity of that increase is a speculative hypothesis and their formula of gravitation a speculative law.

As remarked before, the falling stone accumulates the resistance of the air in front of it to make it strong enough to carry it, which requires motion. The air's resistance takes the form of temperal cold which cools the stone to the same extent as it is strengthened. Every motion in the air and of the air acts coolingly. To the same extent as the falling body is cooled increases its antipolarity with the earth and the attraction of the earth. Because the falling body becomes colder, it is stronger attracted and moves faster and because it compresses the cold of the air stronger it becomes still colder is still stronger attracted and moves still faster, and this is the acceleration of its fall.

The energy of striking the ground is much higher than the weight the stone started to fall with, but is also gravity which had increased on account of the cooling process while falling. Lively spantomic action after the strike means quickly gaining back the normal temperature and weight.

A law of gravitation must give the mathematical form of the fallenergy, its transformation from weight into velocity and the form of acceleration and transversed space, and the energy of the final stroke on the ground. Velocity and way are to each other as cause and effect, therefore, directly proportional. The purpose of this book does not permit to elaborate mathematical details of that kind, but for those who are interested in the matter a last article has been added after the principal theme was completed; that article on gravity is for the "sceptical physicists."

The distribution of gravity and its transmission from one celestial body to another is a matter which was not explained in accordance with Newton's law of it which limits itself to the mechanical circumstance that the spheric plane increases in quadratic proportion to its distance from the centre. If there is also a physical reason for the decrease of gravity with the increase of distance is not considered in that law because gravity was considered independent of physical conditions.

Every magnet, such as the earth, has its own induction-atmosphere gained by the heat of the earth attracting the passive forces of the air which adjust themselves in direct proportion to this attraction by downward intensification. This effect of the earth-heat in attracting the air's cold or materity which the materialists called "the density of the atmosphere" while it is only intensification of its cold, is just sufficient to answer the heat's attraction.

Measurements of that "density" at various heights have shown that its upward decrease is of about logarithmic form. It is not temperal heat which is to be measured, because this heat decreases upward to some height on account of the sunlight heating the crust and this by contact the lower air, but it is the chemically colder gases which settle nearest the earth.

If the atmosphere had a cylindrical form, the decrease of inducted gravity would be transodic or nearly

logarithmic but the form being spheric, the mechanical law of the sphere, reduction by the square of the distance from the center, comes in as a modifying circumstance.

The celestial air is inducted magnetically in this manner and transmits thereby the attraction and repulsion between the celestial bodies. The attraction between the relatively warm earth and cold moon is their conditional relation or dynamic proportion exerted as magnetic energy, modified by the spheric law. The law of gravity is, therefore, dynamo-logarithmic, modified by the mechanical spheric law. This matter is more complicated than Newton supposed it to be.

### VIII. NATURE

Having now established the principles of ontology and metaphysics, it follows the third branch of philosophy, our physics or science of nature.

The original meaning of nature, from *natura*, birth-giving, was that the worldmother which became matter gave birth to the new conditions and things which happened to be created. This concept of nature, dating from metriarchal times, included everything that is going on in the world.

Now we conceive the creating entity no longer as a worldmother, nor as a worldfather nor a pair of worldparents, but as a hermaphrodite, as the worldmother-father as which we may signify the galomal worldstuff in its antipolar conditions, in leaning to the sexual-symbolic ways of the old philosophies.

Since the essence of the worldstuff is constant and this stuff continuous and symmetrical in its mass, there are no differences in the world but those of hermaphroditism in which here the passive materity and there the active paterity is preponderant. These names for the counterforces were chosen to maintain the old sexualistic symbolism which connects the inorganic with the organic. Nature can consist only of changes of conditions of the worldstuff and the question is now which

direction has this process? There are three older answers to this question.

**First:** Nature has the direction from a warm and soft to a cold and hard condition, is, therefore, a general materialization of the world. This theory of nature finds its principal representative in the Kant-Laplace theory of the origin of the solar system. It presupposes no antipolarity but goes from one polarity into the other without requiring equalizations. Heat is nihilated which the materialists are still doing as we shall see.

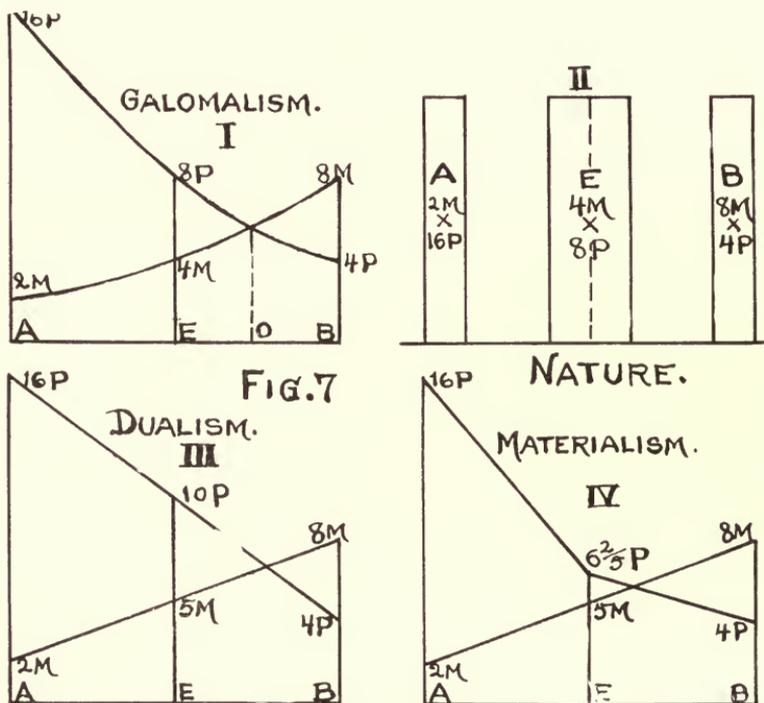
**Second:** Nature has the opposite direction from the hard and cold to soft and warm conditions, is, therefore, a general spiritualization of the world. The latest notions in conformity with this theory are those of some experimenters with the hardest and chemically coldest substances of the uranium class who believe in the "selfstransmutation" of them to substances of high specific heat. Radium for instance is supposed to transmute to helium instead of the latter being the product of equalization of radium and hydrogen.

**Third:** Nature is a pendulation in the above two opposite directions, a forward and a backward process, a **perpetuum mobile** which may not be possible in a small size but is possible in universal size. Nature then is an eternal circulation of forces and eternal shifting and mixing of matter. This theory which admits of no lasting results of nature, no entropy and no nirvana, is the most popular. There are scientists who adopted the first theory for their astronomy and the third for their philosophy. We shall review these theories closer in connection with the cosmic conceptions to which they belong.

The galomalistic explanation of nature shows the direction from both sides to the middle, or from both polarities to apolarity or dynamic equilibrium. Nature is the process of equalizing the polar conditions accompanied by equilibration of the counterforces, maternity and paterity. The law of equalization is the law

of nature. To explain it we require again a copy of an old drawing.

The seventh figure shows the different laws of nature. Part 1 shows the galomalistic law which follows from the proven metaphysical and empirical laws. On the axis of "A B" are standing two duordinates of which the first represents the forces of the element "A" and the last of the element "B" and the middle on "E"



those of the product of the equalization of "A" and "P". In every case, according to law, the product of "M" times "P" is 32 which represents the constant galom. It is understood that the equalization is complete and no heat lost in the process by one of the elements first changing its latent state before equalizing with the other. The connecting lines are logarithmic curves or vaxodes.

Part 2 shows the equal quantities of the elements and the double quantity of the product. In this respect

the action is mechanical, measured by volumes. Since no heat is lost it is an addition of equal masses of stuff. In regard to the forces this action is not mechanical but dynamical with another law. Here we see the difference between mechanics and dynamics. After the equalization the new proportion between the forces is not gained by addition and subtraction of them but by new adjustment of them within their constant product. In this galomalistic law of nature the forces after the equalization which in regard to them is a new equilibration are the mean proportionals of the respective forces of the elements. "2 M" to "4 M" as this to "8 M" and "4 P" to "8 P" and this to "16 P." The inverse proportionality within the constant product, required by metaphysical law, remains.

Part 3 of figure seven is the figure of dualism with its mechanical theory of nature. The elements "A" and "B" are now mechanical mixtures of matter and ether which have no relation to each other but the mechanical in space. In the equalization of them these elements are "**combined**" as the world-mechanics say. The new mixture in the combination at "E" is of the middle sums of the stuffs of the elements which have not changed except in mixtures, purely mechanical. The total mass of the elements consists of 10 matter plus 20 ether, both of which are persistent, remain conserved, no matter what happens. The new mixture at "E" has two volumes of five matter and ten ether. The sum per volume is constant but if we multiply them as required by the empirical laws, in this case especially by the law of Dulong and Petit, their product is 50 instead of the persistent 32, which is a crime against "the laws of nature." Dualism is an outlaw.

Part 4 shows Richmann's materialistic law of equalization. There is but one persistent and conserved entity in this case which is matter while everything else are "properties of matter," which are destructible. Heat is here no heatstuff or ether but motion of matter

which can be brought to a standstill, for instance, at the materialistic zero of heat.

The "conservation of matter" is fully maintained in Richmann's law, the same as in the dualistic law, but the other factor, in this case "specific heat," is partly nihilated and reduced from 20 to 12 4-5. The six and two-fifth parts of heat, it must be understood, are not lost but destroyed which is done to make the result of the equalization agree with Dulong and Petit's law, because 5 times 6 2-5 per volume is also 32 as the constant. The constancy of matter and the constancy of matter times heat are maintained in Richmann's law, but the constancy of heat as an energy is avoided because "the law of the preservation of energy" was not yet established and could, therefore, not be violated. That law, which puts up another entity besides matter has to be rejected by materialism anyway which cannot admit another god besides its worldmother, the only absolute and indestructible.

The 7 1-5 parts of heat reduced in this materialistic law of equalization are not lost to the surroundings as temperal heat, which would be against the proposition, but they are annihilated. In reality, chemical equalizations are often preceded by latent changes of one of the elements, thereby losing heat. For instance, oxygen becomes ozone by freeing a large part of its latent heat, and ozone is then the one element which enters an equalization with another, volume for volume, which caused the notion of "multiple proportions" in chemistry.

Returning to part I of figure seven which illustrates the only true law of nature in accordance with the metaphysical law including the empirical, we find that the essential factors, "M" and "P," as tendencies in conditions, called forces, are of equal importance but of towardly opposite characters, always aiming to gain and maintain their equilibrium, not in the mechanical but in the dynamical sense. Through equalizations of conditions they strive for their final equilibration at the

point "O" between the two polarities where there is the condition of apolarity and indifference, or dynamic equilibrium and the zero of nature in the normal substance called zeron.

This process of dynamic equilibration, the fundamental process of nature besides which everything else is circumstantial phenomena, it not mechanical because the forces are not added and subtracted in the mechanical manner, as we have seen, but they are adjusted inversely proportional, dynamically, within their constant product, galom, which separates dynamics from mechanics, each with a separate law.

Is heat or cold annihilated? No! Are they preserved? No! The concepts of destructibility and indestructibility can be applied only to that which has being, which in the last instance is stuff with its constant essence, but the forces are abstractions without independent being and are, therefore, neither destructible or indestructible. Persistent alone is the world-stuff. The two "laws of preservation" of matter and energy of dualism are rejected, though it be acknowledged that they were good in putting up "energy," heat, as just an important factor as "matter," cold.

Outside of the conditions of stuff everything is formation, organization, motion, properties, etc., of things, mechanical circumstances in space and time for which the mechanical laws are fitting, which are laws in nature but not the law of nature which is identical with the law of equalization of stuff-conditions.

The materialists made their dynamics a part of their mechanics because they postulated heat as motion of small bodies, their atoms. The right name for their dynamics would have been kinematics or the science of motion. True dynamics or the science of the forces has laws which are different from the mechanical as we have seen, and we make now the distinction between dynamo-logarithmic and mechano-arithmetic laws. The first are included in the galomalistic law of

equalization as the true law of nature, and the latter are circumstantial modifications thereof.

If we now look at nature we find that equalizations take place between conditions which belong to the same polarity within the general antipolarity. It is easily understood in regard to temperature and electricity, and in regard to the chemical conditions is explained in their periodicity, each forming a special sub-polarity within the general. Bases and acids are related in this way. And that each period has its own zero is shown by the fact that for several of them a zero-substance has been found, but these are complications for which I have no room; the law of nature is not changed by them.

On our earth we find two principal forms of nature, organic and inorganic life. Of the course of them modern science knows a great deal while it does not pretend to know the cause and result, except in hypotheses of some scientists. What causes the greatest difficulties to those who believe in materialism is the transformation of nature from the inorganic to the organic form, though that such a change took place is plain to them, seeing that the plants live almost completely and the animals to a great part on inorganic substances, such as water and air.

This problem caused the bankruptcy of materialism. Especially was it Dubois Reymond, the Berlin philosopher, who showed conclusively that it is impossible to explain the simplest organic feelings, such as "Lust and Unlust," with the atomic hypothesis and the mechanical theory of nature, and his "Ignorabimus" has not been removed by the worldmechanics but stands as a declaration of their bankruptcy.

The following energetics did not succeed either, though it has some great advantages over materialism, especially where it is dualistic with a passive and an active energy. The latest attempt, called electronics, which divides the atom into a positive electrical nucleus and negative electrical electrons which revolve around

the nucleus like planets, has not succeeded and cannot succeed, because it is but a new form of the old dualism of coldstuff or matter and heatstuff or spiritus, ether, only that in this case the forcestuffs are supposed to be electrical by which nothing is gained. Whether the essence of the nucleus is chemical or electrical cold (**matero-electricity**) and whether that of the electrons is specific, common heat or electrical heat (**patero-electricity**) does not change the fact that they are the old couple of forcestuffs. Every attempt of a dualism within nature arrives at that same old couple: Coldstuff and heatstuff, matter and spiritus or ether, and any changes of names and constellations cannot help over the old impossibilities. We, therefore, also set aside electronics as a mistake.

The life in the world, nature, consists of the inorganic which is by far of greatest extent, and the organic as a continuation of the first, especially on our so favorably located earth. Requirement for both forms of life is antipolarity because between equal conditions nothing happens.

Inorganic life begins with equalizations of temperatures and electricities and when these are near enough to the equilibrated mild condition, they are followed by equalizations of chemical conditions. But these are bound in substances and form bodies for which the mechanical difficulties of coming together in the proper manner prevent a speedy process. These difficulties are partly overcome by the movability of gases and liquids and the solution of otherwise solid substances. Inorganic life even succeeds in some cases to reach the zero-condition. On the sun where chemical extremes are burning, radium and hydrogen reach helium, the large masses of which indicate the partial death of the sun, because helium is a dead substance. Argon, neon, xenon, crypton, etc., are also known as dead substances which are partly prenatal and partly postnatural.

If chemical equalization were as easy as that of temperatures, nature would not require organic life, but

would reach its goal, entropy, nirvana, in the inorganic manner; but the chaotic distribution of the chemical substances on this slagbody, our earth, which once was a spot on the sun and was projected by an explosion from below, and the circumstance that these substances are slag, which has lost to some extent the eagerness of elements, make chemical equalizations difficult and require for them selfworking chemical laboratories which evolved to organic bodies that are now working hard in this process on our earth.

How now the evolution of the first organic slime-bodies, which were of course not organic as long as they had no organs, may be conceived on the basis of what we have gained is a matter which will be illustrated in the article on organic life. In the next articles we will now show the mistakes of the older philosophies because it was always the habit of philosophers not only to build their own new "systems" but also to tear down the old, in fact most of them preferred the latter and often did not get much further.

### IX. THE COUNTERFORCES.

The names of the counterforces, materity and paterity, used in the previous articles, are sexual-symbolical and are chosen especially for connecting our new philosophy with the old philosophies which were all in the forms of sexualistic symbolism.

For instance, matter, form *materia*, means mother-stuff, nature means birthgiving and spiritus was masculine as the breath of the fatherly *sungod*; and even when spiritus was made supernatural *mindentity* it was conceived as masculine because a fatherly creator was required besides matter. This symbolism has persisted and is now continued by making materity, "M" and paterity, "P," the general names for the passive and active forces.

It was not wrong of the primitive philosophers to take their terms from sexualism because in regard to ontology and metaphysics there is no difference between the inorganic and organic, the difference originated in

nature. To conceive the antipolarity in the world as sexual is true in principle though the form may be symbolical, and when the old philosophers spoke of "loving and hating" of the elements this was also true in principle and maintained a connection of organic with inorganic life, a connection which the world-mechanics cannot make.

It is a historical fact that humanity instinctively identified the passive force of stuff with femininity, and the active force with masculinity. In general, coldness, hardness, passivity was taken to be the feminine and heat and activity the masculine force. A few empirical proofs may show that this identification was right and that it is pragmatic and fitting to summarize all passive forces under the name **maturity**, "M," and all active forces under the name **paterity**, "P."

Some species of organic bodies seem to contradict the idea that of the two sexes the feminine is at the colder and harder and the masculine at the warmer and softer side of antipolarity, especially the human where the poets have pictured the women as "etherial beings," but poets have written many things they cannot be held responsible for. There are fishes, insects and reptiles whose female members are bigger and stronger than their male members which shows that bodily size and strength is not a necessary attribute of masculinity. In the fertile egg, the male part, the principal polar substances of which consist of nearly gaseous parts enclosed in the slime, is always on top of the female part, no matter how we may turn the egg, which shows that the male part which has been wrongly called the "seed" has the higher specific heat. It is not required to suppose that the antipolarity of the male and female parts are far from the zero. That generation has a "bipolar" basis is now an accepted fact of science, even where the materialistic scientists have no philosophical conception of it.

Experiments with low bisexual organisms showed that in temperatures considerably below the mild the

offsprings all became females and in temperatures above it all became males, while in the mild zeronic temperature of our temperatometer there came an equal number of females and males. Here they would be hermaphrodites if evolution had not determined it otherwise.

At that zero of temperature where cold and heat are neutralized is also the zero of hermaphroditism indicating that here is the zero of the chemical conditions in regard to dynamical preponderance. We would hardly have to go further but a few more facts may be mentioned which indicate the antipolar positions of the sexes.

Vital statistics show that in the winter the girls and in the summer the boys are in majority in new births. Polar explorers found female members of bisexual plants growing many miles further north than male. These explorers should be women because they can endure a colder temperature than men, for which reason they dress themselves more coolly, while nature had to give the men beards where clothes were inconvenient. The life of the male sex takes place at a higher degree of heat and activity than that of the female, therefore, the food of the first has on an average a higher specific heat than that of the latter. Men consume more liquids, preferably heating liquid, than women who take more of the hard foods, especially sugar, the hardest, which may almost be called a female food.

When a pair of butterflies are in a room and a drop of sugarwater and a drop of alcoholic drink are placed at their disposal, the female butterfly will partake of the sugarwater and the male of the alcoholic drink. It is easy for the females to be "temperance women." Professor Schenk discovered that women with attacks of sugar disease invariably get female children. He, therefore, reduced the sugar in a woman who wanted a male child. His practical success was not great, be-

cause this matter has other complications, but his principle was right.

It must have been observed in olden times that the female sex is the harder one and that the woman's passive resistance against oppression and her strength to endure the hardships of life, also her patience with man and child, are much stronger than the forces of the same kind of the man whose superior active forces are quite apparent.

From similar facts it was concluded by early humanity that feminity as a force is identical with the passive forces and masculinity with the active forces in general which justifies the sexual-symbolical shape of philosophy and now justifies to call the counter-forces materity and paterity, "M" and "P." That these forces as tendencies of conditions are not each separate and absolute but correlative and towardly opposite means that they have no independent existence and that there is no materity without paterity and no paterity without materity; neither of them can be made a stuff, such as matter and ether or spiritus which do not exist.

The first organisms were hermaphrodites (from Hermes and Apothrodite). Gradually the sexes were evolved through polarization of hermaphroditism; one half of them came to be one side and the other half on the other side of the point of sexual equilibrium, the zero of sexual polarity between them. Some men are more masculine than others and some women are more feminine than others, but absolute men and women cannot be. The degenerated nipples on the men's breasts indicate a degree of feminity in them and more such signs could be pointed out on both sides. They all, males and females, are but inequibrated hemaphrodites without that essential difference that was formerly made between them; their difference is merely of polarization and organization. Both, therefore, should have equal human rights.

Hermaphroditism is essential in the organic world

and in the inorganic because the real world, the anti-polar part of the worldstuff, itself is a hermaphrodite, a world-motherfather. Hermaphroditism is the fundamental principle of the world and the polarization thereof is reality. But if we look at reality from the other side, from the inorganic to the organic, then it is antipolarity also with the organisms, which removes that abyss between the two forms of life, which the materialists could not overstep.

The question of creation was the principal question of philosophy when concerned with the real and natural world and not entangled in the void abstractions of supernaturalism. Who is the creator, mother or father or both? Generalizations of these creators caused the philosophies of materialism, the motherstuff theory, paterialism (spiritualism), the fatherstuff theory, and dualism which mixed the two. Where personification was upheld these sexualistic conceptions were religions with godmothers and godfathers.

Galomalism, the new world-philosophy, is no new religion because it makes no person out of the living part of the world though the expression "world-moth-erfather" has been used symbolically to emphasize essential equality of everthing living. Galom as the absolute being has no properties and conditions and can, therefore, be no thing or person, but the galomal stuff as we meet it has conditions or different proportions between its counterforces which are bound in substances of irregular forms, except those which entered organic life with its forms of species. A difference between the forces and energies in both forms of life, the inorganic and the organic, consequently cannot exist except in formations and evolutions.

In both forms of life the counterforces are attracting and "loving" to each other and striving for their equilibrium. The "love" of materity and paterity is their mutual attraction and their "hate" their repulsion between the equal forces, all expressed in their

magnetism as the energetic necessity to establish equilibrium.

If modern philosophers had preserved the old sexualistic symbolism without personification, they would not have arrived at such unnatural notions that mother-stuff (matter) is attracting motherstuff, which of course could never find a scientific explanation but remained an untrue dogma, upheld only by believers in authority. The dogma of a unitary almighty world-father is no more unscientific.

Since the factors of hermaphroditism, maternity and paterity, on an average are equally strong and important in their juxtaposition and in nature, they also keep the balance in organic life in such a way that in normal conditions the two sexes appear in about equal numbers.

We can now divide the real world, active in nature for equalization, in a female (matero-polar) and a male (patero-polar) half. The materialists saw but the female half and condensed it to their extreme of a material world and the spiritualists or etherialists did the opposite. The dualists took both extremes and mixed them in their dual world.

Since the philosophy of sexualism was the beginning of all philosophy without in the past coming to a proven conclusion, we had to consider this beginning and start from it again. There came a time in mental evolution when men began to ask about the origin of things and themselves. At the time when the sphinxes were carved this question was already extended to: Whereof did we come and whereto will we go? No world-cognition is complete without answerig the question of the sphinx. To the first question; where did we and all things around us come from, the first answer was: from mother. Of all the gained concepts of makers of creators mother was the first because the nearest; after her came father and then a pair of parents. And now we see that the creator of all things is a world-hermaphrodite, unpersonal though until it has entered organic

life. Generalizations of the originally human-like creators then caused the philosophies of materialism, paterialism (spiritualism) and dualism, and now galomalism.

Before we criticize the old expremistic philosophies, which are preserved to the present day, any further and show how they contradict the "empirical laws of nature" it must be said that until the correlativity of the opposite forces was discovered, nothing else could be done than to try these extremes which now show to be essentially impossible. Even Strato who according to history gained the highest cognition of the world in ancient times, could not know the correlativity and inverse proportionality of his fundamental forces, cold and heat, because it is a modern induction from modern experiments and discoveries, hardly possible in ancient times.

## X. GENUINE MATERIALISM.

In the history of progress the materialists were always in the front row. Their love of truth and science is to be appreciated. They will also be the first to acknowledge that a revolution of philosophy is required to gain a cognition of the world because their materialism left them many "world-riddles."

"Materialism" is a much misused word. The supernaturalists who believe it to be their principal opponent use it in their opposition to the idea that only space-filling things are existing; these stuffy things they call "material" while for their supernatural things which do not exist in space they misuse the word "spiritual." And then there is the confusion of materialism with economism, meaning that the things of our economical affairs are the "material" and the strife for them "materialism." But most people who call themselves materialists mean to say by it only that they do not believe in anything supernatural, in which they shall not be disturbed.

These vague popular notions, also often found with scientists, do not represent philosophical materialism. We

are concerned with genuine materialism which is a respectable but onesided philosophy of the world. It dates from way back in prehistoric times and was undoubtedly the first religious philosophy of humanity because it was the consequent philosophy of the motherright, matriarchism, the first regulated relation between the sexes and first form of society.

Formerly it was believed that Leukippos and Demokritos invented the atomic hypothesis but it is now known sufficiently that Demokritos found it on his travels in Asia, perhaps in India, and brought it home to Greece where it was elaborated by him and others.

Many ethnologists who investigated old records and still existing remnants of original forms of society, have arrived at the conclusion that in prehistoric times with the white races, as still today with some negroes, there was a system of sexualistic and economic affairs in which the mothers were the heads of clans and tribes, and when all descendency and inheritance was counted only in the maternal line. This rule of the mothers was matriarchism, the economic basis of which was tribal communism.

The men were mere fraters or tribal brothers who had love affairs with their sisters but were not recognized as fathers because the concept of father did not yet exist. The attempts to explain this relation between the sexes with the economic ("materialistic") theory of society has failed because the old tribal communism was not the cause but the consequence of matriarchism. In olden times familialism was the leading and economism the following factor in social evolution while now of course the latter is the leading one.

The cause of the motherright, which was really no established right but evolved usage, was the ignorance of the requirements for the creation of new beings, such as children. It was not yet known that generation is the requirement for creation; therefore, of fathers nothing was known. The Australian negroes are still without this concept and the missionaries of the Jewish-Christian religion which is patriarchal tried in vain to make them believe in

a universal father, these negroes not having the idea of individual fathers.

Until paternity was discovered with eggs, probably 7000 years ago, the white races also had no knowledge of it that the fatherly part is required in the creation of new animals and men. Mother, from the Arian *motar*, maker, was the term for the sole maker of children.

This concept of mother was first extended to a tribal mother, herself unborn but having started creation and birthgiving which then was continued by her daughters for the maintenance of the tribe. For this reason the mothers were the heads of their creations, the matriarchs.

But to explain organic life in general, the tribal mother was expanded and generalized to a great worldmother whose body was the earth and who gave birth, natured all things, especially the living things, out of herself, self-sufficiently and without any help from a world-father who could not be taken into consideration in a theory of creation as long as the concept of father was missing.

The great earthly world-mother had names such as Isis, Hera, Maria, Juno, etc., godmothers who are much older than any godfathers who at that time were still merely the fraters or brothers of these universal mothers, who were always pregnant and always creating, birthgiving, a process which was called *natura*, nature, meaning birthgiving.

But the personification of the world-mother as a continuation of that of the tribe-mother could not resist critique; when she was stripped of it she became mother-stuff, *materia*, matter. The conception of the world now which begins with the hypothesis that the world consists of *materia* is **materialism**. Giordano Bruno still wrote: "Matter is the ever pregnant mother which gives birth to all things," a true expression of genuine materialism.

When the world-mother lost her organism and became worldmatter, she did not lose her essential character, the passivity of femininity. On the contrary this passivity was driven to an extreme and the passive force made the essence of matter, which, therefore, is absolutely pas-

sive and inert, her essence being hardness, coldness, passive resistance. Matter in itself is incompressible, inaffectible because it is stuffied hardness. Fortunately it did not fill space completely, otherwise motion would have been impossible.

The active forces in nature, such as heat, were taken as properties of matter and her motions in empty space. Finally it was believed that the world consisted of matter, empty space and motion, which is a trinism instead of the much proclaimed monism.

To gain room for motion matter was cut up into extremely small pieces, which on account of further divisibility being impossible were called atoms, from atomous, indivisible. Atomism became an indispensable part of materialism for the explanation of some natural facts.

Some modern critics said "the essence of matter is unknowable," which does not suit the materialists who claim to know it as absolute passive-force of which matter is the stuffication. It is, therefore, hardstuff, or compared with the later ether or spiritus matter is coldstuff. That the materialists in later times adopted ether to fill their empty space after logics had destroyed it, does not belong here, because they stole that ether from the genuine spiritualists, whose heatstuff, lightstuff, breath of the sungod, spiritus it was. Genuine materialism can only have matter.

But the materialists were compelled to become dualists when space was recognized as abstract and unfit to be a being part of the world. Space is our abstraction of the extension of stuff which in different conditions is proportional to heat, the expanding force; but being space does not exist. Also the dualism of matter and energy cannot be accepted by consistent materialists, though it is not likely that any more of them are living. It is extremely difficult to construct a monistic materialism or any monism, because it is so unnatural to suppose the existence of a single force. One force alone cannot form an action because it requires two forces, an active and a passive, which take the position as counterforces in actuality.

In the first articles is shown that the essence of stuff is not one force nor the sum of two forces but the constant product of two correlative counterforces, but this is a modern discovery which excuses the ancient thinkers who tried their best with the forces and made stuffs out of them.

The absolute smallness of the atoms is also antiquated, except in chemistry as a unit of mass. Logics require infinity in the small and in the large, which are relative conceptions and can never be absolute. The absolutum is no more an extreme as the infinitum. The philosophers among the scientists are now busy to cut up the atom until nothing of it is left, because the infinitely small is small only in comparison while in itself it is neither small nor large, and can, therefore, not be an atom.

To explain several puzzling phenomena it was supposed that the atoms are grouped in vibrating molecules and that their motion constitutes heat. Now motion is timely changing of relative positions in space is, therefore, composed of the abstractions of time and space. It occupies time only because the moving has to overcome a resistance which on the spot is not strong enough for equilibrium and has to be accumulated. If no resistance existed in the field of motion, as in the empty space of genuine materialism, the motion would be timeless. To avoid timeless motion the interatomic space was filled with ether which per hypothesis should be resistless heatstuff but which was made partly material.

In a material world all happenings consist of motion. Where did it come from? Not from passive matter because it has no force which could cause it. The supposition that "matter attract matter" and thereby causes motion can no longer be accepted because attraction exists only in antipolarity of which "matter" has none. Only two suppositions remained: either matter was moved by an external mover or motion was itself an entity, causeless and indestructible. Only a few men accepted the latter, nearly all who believed in matter believed also that above matter stood an engineer who built the world-machine

and put and kept it in motion. On this account materialism became the instigator of supernaturalism.

The people early felt that a self-moving machine, a **perpetuum mobile**, even in universal size could not be and that the mechanistic theory of nature had to be amended by the believe in a supernatural machinist, which was in accordance with experience and sensible, because every machine is designed, built, and supplied with moving power and serves a purpose. Teleology has sense if the world is a machine even if the purpose of it is not seen. Supernaturalism can be removed only with the removal of the mechanistic theories of which there are monistic and dualistic, because without the supernatural these theories are unbelievable.

To shorten the objections to materialism a general denial of all the materialistic "first principles" is here repeated: The atom is a materialistic phantom, the empty space is a materialistic superstition, the causeless motion is a materialistic magic and the fabulous ether is a materialistic theft.

The attempt to make an extensionless force centre out of the atom had to fail because extension, spacefilling, stuffiness is the first requirement for the existence of anything not abstract. The materialist Buechner said: "Even if in thought we cannot place ourself at the last point where matter is no further divisible, still there must be such a point, because to suppose infinite divisibility is absurd and leads to doubt the existence of matter at all."

He and others wrongly considered the infinitely small equal to nothing while in reality it is just as positive as any other being and is small only in comparison because absolute smallness and largeness do not exist. False applications of the concept of quantity was the reason why many people could not grasp the simple notion of the infinitely small but believed in atoms.

But Buechner was right in this: Without atoms no matter! Since space completely filled with matter cannot be because it would exclude all motion, materialism without atomism is impossible. Materialism stands and falls

with the absolutely hard, small, indivisible, unchangeable atom and no sophistry is able to help it over this nonentity, which permits mechanism only but no mind. The mental abilities of organisms are completely inexplicable by the mechanistic theory. The materialists, therefore, fully deserved the "Ignorabimus" though he who knocked it on their heads did not know a way out of it himself.

We have now gained that the matriarchal belief in an earthly world-mother as the generalized image of the mythical tribemother was the first religion of humanity and that this mother earth had names like Iris, Maria, Hera, Juno, and others, names which originally were probably those of tribe-mothers.

By stripping her of personification, the world-mother became world-matter. This hypothetical matter has extreme passive force for its essence and is, therefore, passive coldstuff, hardstuff, anyway a forcestuff.

We shall now see how the other factor of galom, heat, was made a stuff.

## XI. GENUINE SPIRITUALISM.

The word "spiritualism" is still more misused than "materialism." In the confusion of the middle ages, partly still with us, spiritualism was used in the sense of mentalism and idealism, which means that the doctrine of a special breath, the divine breath of the sungod, was made to or identified with the doctrine of essential mind. But the ancient Greeks have made the beginning of this unscientific identification.

We have seen that matriarchism caused materialism. In the same sexual-symbolical manner did the following patriarchism cause paterialism which received the symbolical name of spiritualism.

The words pater, Vater, fader, father, etc., have been derived from the Arian frater, which in matriarchal times signified a male member of a clan or tribe, a tribe-brother. These brothers of the mothers of the tribe had their love affairs with their tribe-sisters, as in the old-Egyptian love

songs, but their part in the creation of children was not known.

It came a time when men began to breed animals, among them some birds. In breeding chickens it was observed that some eggs were fertile and others were not. Eventually it was discovered that without the addition of the male part, the female part in the egg created nothing. That the discovery of the importance of the male element in creation was made with eggs is shown by this that the male element is still called the seed and the female the egg, also with mammals.

This great discovery, the greatest of all in its consequences, was then conceived wrongly in this way: As the seed of a plant is planted in the ground to be nourished and grow, so the male "seed" was planted in the egg or womb for the same purpose. Today we know that every seed is a combination of both elements, the female and male, but that was not understood in olden times and the male element alone was taken for the seed. This onesided view led to wrong notions and acts.

The male cocreator was taken as the sole creator of children, at least by the fathers, and the female cocreator, the mother, was degraded to a mere branch or "rip" of him, a mean of creation, required for the nourishment and fosterage of the seed and children but of no essential importance otherwise, because the real creator was the father. To cheat the mother entirely of her rights the father also lay in bed when a child was born as if he were the birth-giver, a custom preserved to the present day with some wild tribes.

To establish the new father-right which was tried in vain in the matriarchal tribes, the biggest of all revolutions was required. Tribal communism and organization was upset and destroyed, matriarchism was abolished and the fathers' private families were started, the economic basis of which by necessity became the private paternal property.

The men had no other means to determine their paternity than by limiting the intercourse of the women

to a certain man. It caused the old struggle between the sexes, still continued in the womens' fight for equal political rights. The women at the beginning of the fight organized in bands of amazones to defend their old mother-right but lost the war. The men as experienced robbers were the best fighters; they overwhelmed the women, made them their slaves and put them under guard, so that a man who owned wife-slaves was pretty sure that their children were his. This slave organization of the father was called his familia, from famulus, house-slave.

The victorious father became patriarch, ruling father, who in principle was the only creator and absolute ruler of his realm. In order to make this new condition moral, a revolution was required also of religious philosophy. The old world-mother was torn down from the creators throne and a new world-father, the image of the patriarch, was placed on that throne. This world-patriarch now was the only creator and ruler of his realm which was the world. Since then religion has been generalized patriarchy. The men now told the enslaved women that the new morals made by the men were of superhuman, divine origin, made by the world-patriarch, and that it was death-sin to overstep them.

In philosophy this revolution meant that the passive motherly world entity was discharged and an active fatherly entity put in its place. Where they were stripped of personification, mother-stuff, materia was abolished and father-stuff, pateria, was established which though received the symbolical name of spiritus for the following reasons:

The analogy of the masculine force with heat was known instinctively and as well as before the analogy of the feminine force with cold or the passive force. Heat, conceived as the creative element, came from the sun. The heavenly sun now was appointed to the universal patriarch, creator of heaven and earth and ruler of his creation, and was then worshipped as the heavenly god-father. The word god was derived from goda meaning

ruler, godfather therefore means ruling father or patriarch.

Godfather in heaven, the sungod, Osiris, Zeus, Jehova, Jupiter, etc., sent the heatstuff of his sunshine down to mother earth by breathing and blowing it down, so that his face, the only part seen of him, was beaming of his breath. Where this creative breath, this blessing of god, struck the earthmother warm enough, she became impregnated and gave birth to living things of which he above, the heavenly father, was the creator. He also made the first man by taking a red earthen clod, modeled as his image, and injected of his breath into it until this clay-man began breathing himself and then burning and slacking. But godfather did not make a woman in the same manner, because that would have been a violation of the monistic principle of paterialism, but he made the required woman out of a part, a rib of the man. The patriarchal story of creation is known.

Really it was but the breath of God which was effective in creation. In the run of time the most intelligent peoples lost the connection of that breath with the sun because it was perceived also in lightnings, fires and temperatures; and now came the generalization of the uncommon godly breath. The Greek word for breath is psyche and the Latin Word is spiritus. This now was it, which in the generalization was made the world-stuff which now became psychic or spiritual instead of being material.

The personification of the spiritual sungod was not given up entirely but some of his attributes remained also with the spiritual world-stuff, especially his creative and mental capacities which in later times led to another catastrophe of speculative philosophy, as we shall see in a following article.

Anyway, as the world-mother through dispersonification had become mother-stuff, matter, so the following world-father became father-stuff, which though was not termed pateria but psyche and spiritus as a remnant of sungod worship. The breath or spirit of God had become

independent as the fundamental world entity, making all things out of itself (not out of "nothing" as wrongly transmitted) the same as before the world-matter had done. This matter was now made a lower condition of spirit and in some old books on physics is still to be found that cold is a lower condition of heat while in reality the two show themselves as counterforces, treated in previous articles.

The relation of spiritus or heat-stuff to matter or cold-stuff, namely the degradation of the first partly to the last, was a violation of the absolute which permits of no conditions and relations, but such matters did not bother the philosophers because otherwise the cold conditions would have been outside of their spiritualistic monism.

Materialism says the world-stuff is a passive motherly coldstuff and spiritualism says it is an active fatherly heatstuff. So far they were both monistic though never consistently carried through. It was only natural that a dualism came which accepted both, matter and spirit, and made their mixture the word-stuff. To go further than that was impossible until the modern empirical laws were established which show the world-essence as the multiplicative product and not as the sum of cold and heat, from which is inducted the hermaphroditism of reality with materity and paterity as the hermaphroditical factors.

The more or less religiously patterned philosophy of spiritualism with national godfathers which originally were sungods had been put in place of the abolished religion of materialism with its earth-godesses. The social purpose of this change was the justification and moralization of the fatherright and patriarchy and the abolition of the motherright and the freedom of the women. It succeeded because the enslaved women themselves became the most enthusiastic and sacrificing spiritualists, their inequibrated condition desiring equilibration with the spiritual, the masculine, while the men's nature, having opposite tendency, favors materialism.

Heraklitos, the last great historical spiritualist, (he still taught that the world originated from a universal fire, fire-stuff, heat-stuff, spirit) was "the weeping philosopher" because the poor fellow saw but a masculine world and nothing for him to love and be happy with, while Demokritos, the greatest historical materialist, was "the laughing philosopher" because he saw but a feminine world and himself right in the midst of it.

The sunlight, conceived as a stuff, was both, in one regard heat-stuff or spiritus and in another regard light-stuff or ether. When in the later confusion of Greek philosophy spiritus was made mind-stuff, the ether remained as the resistless heat-stuff. When the materialists saw their empty space destroyed by logics, they adopted this ether to fill the space between their material atoms. Since per hypothesis ether had no passive force (though several ethers have been invented which were partly material with passive resistance to make motion timely) this ether could not damage the motion of the atoms.

Beside helping them over a logical embarrassment the materialists had no use for the fabulous ether; they do not love it because it is the dismal sign of the failure of materialism, they, therefore, treat it as if not existing when they measure a piece of world-stuff by weight instead of by volume. For ether they would not give a cent.

Galomalism of course rejects also the dualism of matter and ether as explained before. Cold and heat are no entities and stuffs but forces, therefore, matter and ether cannot exist. What exists is galomal stuff measured by a volume. Materialism and spiritualism are equally wrong.

The most conspicuous appearance of the divine world-spiritus was fire, a process in which much heat of oxygen is freed and acts as temperal heat. Fire was made godly, sacred, and worshipped as it still is in parism, a remnant of genuine spiritualism. In the fire

was a manifestation of the spiritual God and out of the burning bush he spoke to Moses. Phlogiston or fire-stuff was still believed in by scientists a century ago which is more empirical than to believe in ether of which nobody ever experienced anything.

The wandering heat, attending to the equalization of stuff-conditions, was the active force in nature, therefore the world-process was conceived in old spiritualism as the eternal activity of spiritus or as Heraclitos termed it "eternal becoming." The eternal circulation of heat as active energy is still to be found in philosophy.

Spiritualism knows no dynamical equilibrium, no rest, no nirvana, because restlessness is an attribute of its absolutely active spiritus. When the materialists made heat the motion of their atoms so much remained of the character of spirit that restlessness was now transferred to matter, where though it is not absolute but can also be missing at the zero of heat.

Genuine spiritualism takes the world-process, nature, for an eternal burning, never consuming the fuel and never gaining a product. Of fire in a small scale it is known that it produces dead gases, but the universal fire produces nothing. There is no death, no entropy, no nirvana, no soulpiece of ghosts in this doctrine which is not to be identified with buddhism.

May it be pointed out, that the notion of process as a continued action played an important part in spiritualism. This abstraction advanced to the foreground and finally captured the place of spiritus as we shall see in the next article.

## XII. SUPERNATURALISM.

The first philosophies, monistic materialism, monistic spiritualism and the dualistic composition of them, as we have seen were naturalistic in as much as they conceived nature as the action of their force-stuffs, which were within and not above nature.

Yet there was always a certain degree of personification of these entities and a person, human or divine, has abilities of which the mental of the nervous system are the most peculiar. Originally these mental abilities were also conceived as natural but it was found that they would not fit in with the mechanistic theory of nature of materialism. In fact for the materialists they are still occultism.

When the godmothers and godfathers were disper-sonified it was not done completely but some properties and abilities of personality remained with the stuffs they had become. The moral qualities which hung to them, the "good and bad," relative to social interests, are of no philosophical value. But the mental abilities left with them as remnants of personifications, their feelings, reasons, judgments, etc., were needed for constructing teleology or the doctrine of an intended purpose of nature and life, because it was perceived that there was a direction to a goal.

Heraklitos, the last great spiritualist, taught that the universal fire which was the essence of the world had a **divine reason** which regulated the world. Since the world-patriarch of whose personality this reason had remained was much more feared as ruler than loved as father, at least by the men, his abstracted reason, generalized together with his substance, heat-stuff, "fire," came prominently to the front and assumed universal dimensions. In the speculations of some philosophers it became all-important and absorbed the old spiritus, putting itself in its place, a process in place of a force.

This transformation of spirit to mind was the transition from spiritualism to mentalism or the doctrine of an essential world-mind. But it is a sign of the confusion of philosophy of that period that this new world-mind which had become the absolute world-entity kept the name and the sex of the old world-spirit. The world-mind also was a man and father and was also called spirit.

Spiritus, originated as the breath of the sungod, was first generalized to a spiritual world-stuff and now was made a worldmindstuff, called spirit or psyche, which is still at vogue because the doctrine of "souls" is still called psychology, the science of breath. A monistic form of mentalism was never completed because this whole doctrine originated as a complement to the mechanistic nature-theories of materialism and spiritualism to make them believeable. A monistic mentalism would mean: The space-filling being is a world-mind, consisting of mind-stuff. The processes in the world are the thinking and the things in the world are the ideas of this unitary mind. To call mentalism "idealism" it fitting only in regard to the problem of existence. The existing things are ideas. But in regard to nature or in this case the process of creating these stuffy ideas it is the thinking of the world-mind which does it. Idealism is, therefore, but a part of mentalism and cannot be put in its place as has been tried. The world-entity was a mind which produced stuffy ideas but was not itself an idea.

In monistic mentalism the natural actions, such as the storms, the chemical processes, the electrical streams, all generations and creations of organic beings are the thoughts, and the things existing in space, such as sand, water, animals, etc., are the ideas of the world-mind. But in this monistic form which required no material machine the doctrine was unimaginable and unbelievable. Monistic mentalism was limited to the phraseology of some mystics who tried it as a monotheism but covered their own inability to understand and explain such a worldmind by a lot of unscientific bombasticism.

The people did not comprehend this hypothetical world-mind but tried hard to believe in it. The people were right in relying on their experience which showed them that there is no action without an actor, no function without something that functions even if it be thinking, no mind without an organism with mental

ability. A mind-being is as impossible as a jump-being or a swim-being, because the actor cannot be constructed out of action. If there was a super-human mind it could only be that of a stuffy bodily personal god, the principal capacity of which was that mind. The people, therefore, are still worshipping the personal heavenly godfather, the sungod of genuine spiritualism, but are so confused through the phantastic speculations of the philosophers that they do not know the difference between spiritualism and mentalism, which was early hidden.

The instincts and abilities of the mental nerves of organisms are higher evolutions of the energies and tensions of inorganic life. The elements of the minds are founded in reality as the antipolarity of stuff-conditions, which "love and hate" and live and die. That vain men tried to distinguish their "souls" from common nature as "higher entities" is over-estimation of their importance and does not concern science.

The mistake of mentalism was to confuse the abstract and ideal with the being and real, and the timefilling with the spacefilling. It made in fact stuffy realities out of mental processes. But the mentalists are not alone in such confusion because the philosophers generally made the mistake to make beings out of abstractions. The materialists made space and motion, the dynamists and energeticists made forces and energies beings, entities. Especially the abstraction of force was generally stuffed either to matter or ether. Well, if forces can be stuffs why then not also abilities and processes? Why should mindstuff be a greater mistake than the passive forcestuff of the materialists?

A monistic mentalism with a universal mind as the only world-entity of which matter is but a phenomenon is not supernaturalistic, as no monism can be it. It embraces the entire universe without making a below and above. But such monism could not develop because the metaphysical soul-doctrine did not originate as an independent philosophy but as an addition to the

already existing philosophies to make their mechanistic nature—theories believable by giving the world-machine an engineer.

Mentalism is to be found only as supernaturalism in the dualism of "matter and mind." It is the over-worldly part of this semi-supernaturalistic dualism and was really never monistic.

To judge from human experience it was required to give the material world-machine an engineer standing over it; the unexplained leading mind was appointed to be that engineer through which soul as mind became over-worldly and supernatural being. Also the modern materialists who deny the possibility of a perpetuum mobile must have something that runs their universal machine and it would be hard to make a better selection than that of the old Greeks or older philosophers who made an over-worldly mind that machinist.

No person experienced with machines can believe in the mechanistic theories without complementing it with a belief in supernaturalism. No matter how much the materialists may dislike it, it was their philosophy including their mechanistic nature-theory which caused and called out supernaturalism because without it their teachings are anti-empirical and unbelievable. Supernaturalism stands and falls with nature-mechanism. The proof now that dynamics is no part of mechanics but has its own different laws, as shown in previous articles, annihilates supernaturalism.

Supernaturalism in its historical aspect originated in ancient Greek speculation and from Greece was carried into other regions and was also introduced into Christendom. But not all the Greek philosophers accepted it. Strato, perhaps the greatest of them, was opposed to the mechanistic atomism of Demokritos and the mentalistic supernaturalism of Aristotle. He found the explanation of the world in the own forces and conditions of things and saw cold and heat as the fundamental forces of which heat was the active force. The true relation of these forces to each other and to

being could not be found until the modern empirical laws had been established. The dark ages of supernaturalism had no use for the ideas of a Strato and but little attention was paid to him in history.

Christianity had become churchianity which had a special reason to adopt supernaturalism, namely to gain a monopoly of the ghost-world. Patriarchal Christianity in this respect started as a reformed Buddhism with natural ghosts in the heavenly blessedness of nirvana, the happy soul-peace. As natural ghosts they could continue to manifest in natural ways to make themselves known, because what happened once in nature could happen again.

But repetitions of "resurrections" or apparitions of ghosts were decidedly against the interests of the church which was based on the exclusive monopoly of resurrection. To prevent repetitions thereof, the church adopted Greek supernaturalism and let the ghosts vanish into a supernatural spirit-world, after which they had no more natural forces for natural processes, such as materializations, pictured as resurrections. Henceforth, wherever they occurred they were either fraud or doings of the devil, sins against "the laws of God" of the church.

But the supernaturalism as taught by the church could never be cleaned of strains of genuine spiritualism, because that would have been too unnatural for the peoples belief which was wanted. A book could be filled with remnants of the original spiritualistic sungod-worship still to be found in the Jewish-Christian religion.

That the God of this patriarchal religion is a male person, that he dwells in heaven instead of being omnipresent like the supposed soul-entity, that the Lord lifts up his beaming face above his children to enlighten them and many other sayings of that kind are sungod-religion. Perhaps some book-worm will take the trouble to collect these remnants and strip the original Christian Sungod, the heavenly Father, of the unchris-

tian supernatural appendices. But we can no longer believe that the sunshine is his stuffy breath or spiritus.

The doctrine of a supernatural world-mind, of Greek origin but made to a church dogma, served first to overcome the logical difficulties of mechanistic materialism and then to suppress the natural sciences which found natural reasons where supernatural were supposed. Supernaturalism caused the dark ages, the shadows of which are extending into the present day.

### XIII. ENERGETICS.

Modern energism or energetics as a philosophical system is younger than galomalism. Galom was discovered in the year 1883 and the work of erecting galomalism started in that year, while energism dates from 1887 when Helm proclaimed the sentence: In order that something may happen there must be present two different intensities of energy.

Until then Robert Mayer and his followers had a dualism of "matter and energy" which existed alongside of each other as two entities; but Helm's sentence gave a reason for nature in a new conception of energy and now "matter" was set aside and the world-stuff made "a spacial composition of energy."

The monistic form would be: The world is energy. But great difficulties to explain nature with such a monism kept it back. A world of continuous energy would make motion and nature as impossible as a world of continuous matter, therefore, empty space would have to be added to energy as it was originally added to matter. A unitary energy, distributed unevenly in space with "different intensities," would cause the same difficulties which drove former monists, especially the materialists, into dualism when space was recognized as abstract and unfit to be a part of being. Full is full and there cannot be any difference in space-filling, therefore, no difference in intensity in the mechanical sense.

A unitary energy also makes an explanation of action impossible because the latter requires the opposition of two factors. The common explanation that action consists of mechanical equalization of "intensities" or different densities of energy also requires that space is a factor of reality, which has become impossible.

A dualistic energism with two essential opposite energies would be more in keeping with experience which shows the opposition of two factors. The argumentation of the energeticists is mostly dualistic even if not called so.

The energeticists have given new definitions to the words "force and energy" which are not always clear. Sometimes "force" is set aside and heat as well as attraction are called energies, and sometimes processes like light are called so. Energy has also been identified with mechanical action and "work." Apparently the energeticists found it difficult to make their energy an all embracing entity.

It is true that the words "force and energy" which originally were of the same meaning have become vague through misuse and different definitions. A new philosophy must define these terms in a way which serves its objects best. But to call the two tendencies of magnetism, attraction and repulsion, energies which is fitting, and the two tendencies of stuff-conditions, cold and heat, also, leads to confusions.

In galomalism the factors of galom, materity and paterity, are signified as **forces**, because in their relations and proportions to each other they are causes of effects, but their attractions and repulsions, the tendencies of magnetism, are signified as energies. Cold and heat are the forces which exert the magnetic energies.

Yet this nomenclature is not the main point of contention between us and the energeticists, but it is the question of multiplication or addition of the opposites, counter-forces or counter-energies, being the true method. The empirical laws require their multiplication which decides this matter.

“The transformation of energies” has been used for the doctrine of a unitary essential world-energy which appears in different forms. But while the different forms of heat can be transformed into each other, heat cannot be changed to cold. According to experience and logics this matter of transformation is limited to this: The different forms of paterity, heat in the chemical, latent, electrical and temperal conditions, can be transformed into each other and the different forms of materity, cold, can also because they are essentially the same forces, and that ends it. If the energeticists will look again they will find that experimental science never changed an active force into a passive force or vice versa, because the opposition between them prevents it. This fact irresistibly leads to dualism if the opposite forces are conceived as entities as in the past.

A vague but popular explanation of transformation is included in the notion that mechanical action can be transformed into heat. In this case heat is not conceived as force nor energy but as “molecular action,” purely mechanical. A mechanical momentum of the coarser sort is changed to atomic momentum, as the materialists have it, which should not be acceptable to energeticists who should find another explanation of heat, namely as a pure energy and not as motion and least as action.

In the fifth article on the formation of substances is explained, in connection with the spantomic constitution of substances, that mechanical action on a body causes abnormal pulsations of the upper spantoms and for their expansion increase of their heat taken from the air; this higher heat is then transferred to the inside, increasing the heat of the entire body. Mechanical action causes this heating but does not itself become heat, as it may easily be seen that action and force must be defined differently.

Energetics no more than dynamism can construct action without first accepting two opposite forces. The required opposition in action compels the energeticists

to be dualists with an active and a passive energy, because monism offers no such opposition.

The question arises: Where are those entities called energies? In space, of course, because there is no other room for them. But anything that fills space is stuff. The energeticists require stuffied energies and since they include the forces, they require heat-stuff and cold-stuff which are not new. How can the energeticists avoid to be pushed back to the old dualism of matter and spirit? New names make no new philosophy.

Galomalism rejects the energy-stuffs as well as the force-stuffs because they agree neither with the concept of stuff nor force nor energy. Forces exist only relatively as means of stuff to maintain uniform being in space, either through resistance or expansion. An absolute world-force as well as an "indestructible energy" as entities are therefore impossible. A force is a factor of the essence of stuff but never itself a stuff, and an energy in magnetism is an expression of relations of forces or conditions but has no existence except in this co-relativity.

The first decree of energetics says: "The quantity of energy in the world is constant." This constancy was supposed only in time, not in space where also required for the absolute so as to be independent of space. The inconstancy and unevenness in space is made the supposed cause for action as shown in Helm's sentence. The intensities of energy in space vary and their equalizations constitute nature. At the end of nature then will be gained a uniform mixture of energy and empty space. A dualistic energism would then get a uniform mechanical mixture of its two energies.

The materialists could not resist the energeticists and also declared heat as a persistent energy but remaining motion of matter, because another entity besides matter the materialists cannot tolerate. It is again a question of the true character of motion. As time-spacial abstraction motion cannot be a stuff nor can it be in

the essence of matter. Experience shows that for every motion an impulse is required; if this is satisfied by an equally strong reaction, the motion ceases. Where "action and reaction" on the spot are equally strong there is rest and no accumulation of reaction which appears as motion. Outside of this phenomenon motion has no meaning, no matter how important it may be as changes of circumstances. It is a mechanical requirement in the equalizing process of stuff-conditions and ends with that process.

In an equalized condition or between equal conditions there is no motion of their own. In an equalized world, therefore, there would be no materialistic heat; but that kind of heat falls with the atoms. No matter now how the energeticists want to define heat as an energy, they have done that much good that heat cannot be destroyed any more as it is done in Richmann's materialistic law of equalization, nor can heat anymore be consisting of void abstractions, such as time and space composed into motion, but must be of essential importance in energetics which can be gained only through its stuffication.

The energeticists who after the bankruptcy of materialism became the leading philosophers in physical science have done more for philosophical progress. First they let all forms of their active energies, after they have done their work, become common heat and then they saw from observations that these free energies reduce with every action and submerge into **the entropy** where they become worthless for nature.

After the establishment of the empirical laws this theory of entropy is the second great gain of empirical research. That it is clothed in energeticist's language does not change the facts of it any more than that the "laws of nature" are expressed in materialistic language.

Modern energetics started with identifying heat and work (a force and a process) and postulating both as energies and equivalent constant entities which to-

gether with matter made up the dualism of matter and energy. But hardly had this been done came Clausius with his important and undisproved sentence: "The entropy of the universe advances to a maximum."

When the final world-entropy is reached, according to this dualism, there is left but a uniformly distributed clump of matter in which the finite heat is also uniformly distributed. In such a world there would no longer be any differing conditions, neither chemical, electrical, etc., and since these, as had been observed, were the basis for all actions and happenings, nothing more could happen in the equalized world which, therefore, would be without nature, would be dead.

All the later hypotheses and arguments of people who did not like a world-death did not help them over the sentence of entropy. The only question still open was whether we have to wait for a universal entropy or realm of inner equality of energies until nature is all through or if death is reached in a small scale today and tomorrow, as those conceived it who called it nirvana, the out-blownness of life.

The sentence that every action is fundamentally an equalization of "intensity-factors of energy" leads unavoidably to an equalized condition, to entropy, to nirvana, and the question arises: What are the factors which are equilibrated in this final condition? Are it matter and energy-stuff which are mechanically balanced in addition, or are it materity and paterity, the equilibration of which we now have a law for, which are dynamically neutralized in their multiplication?

The idea that energies, especially the active heat, must come to an equilibrium and death contradicts the spiritualistic conception of heat or spirit, in which the world-fire must burn eternally in continuous transformation of energies, in lasting changes of conditions or as Heraklitos called it in "eternal becoming," according to which there can never be a non-burning, a nirvana.

For those dualists who accept matter and energy and

conceive the latter as motion of the first. and who also accept entropy, the question arises why in this condition of inaction and rest matter should still move, because as long as she moves in the shape of heat she is not in an equilibrium and rest! Galomalism explains the final rest as equal strength or indifference of the counter-forces of stuff, "M" and "P," which raises no such unanswerable questions.

#### XIV. DUALISM.

In the previous articles was mentioned that the supposition of force-stuffs always led to a dualism. Consistent monistic philosophies are not existing any more, if there have ever been any. It is impossible to construct action with a single force because without opposition there is no action. Dualism, therefore, deserves a special article and I repeat what I have written about it years ago.

Monism is the doctrine of the unity and dualism of the duality of the world. Both are number-principles which give meanings to the one (**monas**) and the two (**dyas**) which go way beyond their mere mathematical character, which indeed place them into the essence of things and give them metaphysical importance.

The principle of galomalism excludes monism and dualism and all other number-principles. Galom is no unit because it has two opposite factors, and it is not dual because none of these two factors is a unitary entity. In our figures we have seen that it is indifferent whether we take galom as one or four or sixteen, all that is required is that it is the constant product of the counter-forces. These forces, as we have seen in the law of equalization, are no units either which could be added and subtracted as required by the two "laws of preservation," but they are essential factors which are not under the mechanical laws. Monism and dualism are, therefore, equally untrue.

Monism means that the world is a unit not only in

regard to its size and quantity, for which reason it was conceived as a world-all or universe, but also in regard to its essence and quality. The unitary world-entity was either matter or spiritus or mind and accordingly we have the monisms of materialism, spiritualism and mentalism, none of which alone could find an explanation of the world.

Dualism means that the world consists of two entities, either matter and spirit or ether, which are the essential stuffs of naturalistic dualism, or matter and mind which are put together to a semi-supernaturalistic dualism in which the world remains material while mind is over-worldly and supernatural.

To understand the origin of dualism in philosophy we must return to the original philosophy of sexualism, or to sexual-symbolism, which was the beginning of all philosophy. History shows that with some of the old nations patriarchy was never extended so far as to deny mothers importance in creation entirely. Mother became a "lower" being than father and with her matter lower than spirit, but she was more than a mould and soil for the fatherly "seed," she was essentially required in creation. Also in social relations she was saved from becoming a mere slave to the father though she was placed low in estimation.

Mother and father both were recognized as the cooperating creators, which caused the philosophy of a pair of worldparents, "matter and spirit," whom the Egyptians personified as Mother Isis, representing the cool earth, and Father Osiris, representing the hot sun. Through their interaction this world-pair created all living beings.

When their preferred children, the selfish human, got into misery and cried for help, the divine couple created a superhuman son and sent him to the crying people to save them of their evils, which he did by his superhuman moral or muscular power. Such savours, sons of a divine couple, were Horus, Christus, Herakles, Hercules and other national savours.

The attempt to make one God out of two or even three, father, son and mother (the last one also called "holy Ghost") which led to the curious dogma of the trinity of god, shows how unfitting, inpregmatic, the number-principles are and how they may violate logics. But it was in the interest of the church to oppose polytheism and limit its monopoly to one god, without solving the problem what to do with mother Mary, the earth-goddess.

Since mythology is above mathematics, that trinity or three-oneness may be excused when we see scientists trying to establish a two-oneness of matter and energy. Such attempts in number-mysticism are poor mathematics but natural desires to correct monism and dualism which both were felt as being unnatural.

In philosophies which did not personify their entities in religious manners, dualism seemed a better method of explaining the world than monism which remained one-sided. The materialists could not get along with their matter alone because it required the addition of empty space between their material atoms and space could no longer be used in this manner because logics had shown it as abstract and unbeing. The materialists adopted the ether or heat-stuff of the genuine spiritualists and filled with it their interatomic space.

These two stuffs, matter and ether, which now constituted the world, could have no other but mechanical relations to each other, especially various mixtures. Space was given partly to the one and partly to the other stuff so that neither was absolute in space but each limited by the other. Through the adoption of ether or spiritus and its mixing with matter the materialists became dualists; they were compelled to make this inconsistent step, to fill space completely without interfering with the motion of their atoms which ether, having no passive or "material" force, could not do.

Dualism which makes a stuff out of each of the counterforces of stuff, excludes all relativity between its

entities. Not relatively or in comparison with matter is ether soft but it is it absolutely without a possibility of strengthening or weakening its absolute heat. And so is matter without relativity to ether, being hard in its own perfection.

That some people wrote about a small degree of passive resistance in ether which made it partly material, others about "etherial atoms," others of compression and rarefaction of ether for the transmission of light and electricity, belongs all to the confusions and inconsistencies which grow like weeds in the philosophical forest.

Such spantomic billows as illustrated in the fifth article there cannot be in pure ether because it has no two forces but heat only which can have no different intensities. Sound and light must, therefore, be transmitted by material atoms which vibrate in ether, which requires that the atmospheres as mixtures of matter and ether reach from one celestial body to another. We also say that the atmospheres have no small limits but as magnetically induced spheres of conditions transmit magnetism between the celestial bodies, but such polarized atmospheres are quite different from the mixtures of the dualists.

Polarities in these mixtures are possible only as greater or smaller densities of matter or ether. But why they are not satisfied in any mixture which does not influence them but apparently want equalization of the mixtures remains a "world riddle." We have still to consider what part the hypothetical ether is assigned to play in organic life; apparently none because the dualists really have no use for it except for the required filling of space.

But since there is no materialistic explanation of many features of organic life, especially the nervous features, the mechanistic having fallen under critique, the doors are open for speculations of which one of them is that organic life is the process of separating ether from matter and that the products of this pro-

cess, called ghosts, consist of ether or are ethereal beings. The dualists with "matter and ether" can only dogmatically deny this deduction but not disprove it, because the disproof of supernaturalism does not help them in this case. Ethereal beings need to be no more supernatural than material. Rejecting an ethereal ghost-world is in conformity with monistic materialism but has no foundation in the materia-etherialistic dualism.

But since in ether, as in matter, nothing can happen but mechanical shifting in space, the mental abilities of ghosts if they have any remain as great a "world riddle" as ours, unless they have supernatural minds, which requires a trinism of matter, ether and mind.

The dualism of "matter and mind" which in regard to mind is supernaturalistic has already been treated in the article on supernaturalism, which only exists in this dualism or the above mentioned trinism. Only as a complement of the mechanistic nature-theories is supernatural mind of any sense while separately it has no use. And as long as the mechanistic theories will be maintained supernaturalism will be with them to make them believable. With the majority of thinking people we find a trinism, the two stuffy parts of which are matter and ether, complemented by an unstuffy supernatural part called soul or mind. Yet ether in this conception plays such a negligible part outside of that of a space filler, that we have here principally a manipulation of matter by mind, which in energetics is substituted by energy.

## XV. INORGANIC LIFE.

We have divided nature in two forms of life, the inorganic and the organic. We call the inorganic actions also life to emphasize the essential equality of all nature, no matter whether life take place in retorts or in brains. The world-mechanics lost the connection between the two and had to leave brain-life to the supernaturalists.

Reality, cognized as the antipolar conditions of the worldstuff, consists mainly of the chemical conditions, including the latent, and temperature, including electricity. The nomenclature of this matter is insufficient and we amend it by the term chemicature, including all spontaneously bound conditions, and temperature, including all loose conditions in the bound periods. Accordingly natural philosophy is divided into chemistry and physics, partly united in "physical chemistry."

Since organic life takes place only in such favorable conditions as existing on earth, the world-life at large is inorganic but limited to small parts, the celestial bodies, their atmospheres and the nebulae. The immense masses between these bodies, formerly conceived either as empty space or ether, are also galomal stuff of which every cubic foot is exactly as much stuffmass as every cubic foot of granite, but nature in these masses seems to be limited to influences from the celestial bodies such as magnetic induction, gravity, and spantomic pulsations, light, etc., which they permit to pass through indifferently and in that way they serve to connect those bodies.

Nature, being based on antipolarity of stuff-conditions, it may seem as if the two are always found together and that all antipolarities are engaged in the equalizing process called nature. However, such a conclusion would be unempirical because we know on earth many solid substances which are very polar but stagnant under the existing circumstances, remaining so as long as these circumstances do not change. They are called "lifeless" but they are so to speak only waiting for opportunities to enter life.

There are also entire celestial bodies which are in similar circumstances. Our moon appears to be very hard and cold-polar yet life on it seems to be very limited even in inorganic form. A large atmosphere with the other side of polarity is missing. It is very probable that there are on the one hand large nebulae which have but little life because they are warm-polar, and on the other hand

dark solid and liquid bodies, nearly lifeless because nebular atmospheres are missing.

Our sun originally was a cold-polar body, stagnant from eternity in dead surroundings, such as argon. Far away from this lifeless because one-sidedly polar sunbody was a large nebular body, consisting of such warm-polar gases as oxygen, nitrogen and the highly polar hydrogen. These two antipolar bodies attracted each other and moved in long travels to each other. When they met, the nebulae became the atmosphere of the sun who now began to burn in this highly polar atmosphere and that was the beginning of the nature of the polar system.

The sun then consists of virgin elements which never were in a process, among them the very matero-polar uranium class and metals. In the hot fire which had started they became molten and then burned in the hydrogen of the acquired atmosphere. A very large amount of the latent heat of the hydrogen was freed. To change from H to H<sub>2</sub> this gas released half of its latent heat which then radiated as temperal heat and a part of which comes to us as sunshine.

The hydrogen as H<sub>2</sub>, which is related to H in a similar manner as ozone to oxygen, namely, as two latent substances, then enters a chemical equalization with the vapors of radium and similar substances which is so radical that they enter directly their final entropy in dead helium of which there is already a large mass around the sun which to that extent is dead.

It is the hydrogen of the sun's atmosphere which furnishes the sun's heat. If the sun consisted of coal and burned in oxygen the sunfire would probably not last very long because these two substances are not very anti-polar; but it is the extremes of chemical reality which meet on the sun and their life is very intensive and durable as shown by the smallest piece of radium.

The notion of "selftransmutation" of radium is hardly worth mentioning but shows how little some scientists have cognized nature. Hydrogen in our atmosphere can surely pass through containers through which the heavier

helium passes, can come in contact with radium, to equalize with it to helium. That the heat freed in that process should come from the very cold-polar radium is as unnatural as that the heat of the fire should come from the coal instead of from the oxygen when changing to ozone. If radium lies in water it takes hydrogen in a lower latent state,  $H_2$ , from it and equalizes with it to dead argon.

This explanation of the origin of the solar systems concludes further that in the sunfire originated slag, consisting of substances which were no longer elements but products of equalizations of solids with gaseous elements, and which could get no further in the existing circumstances. These slagbodies float on the molten surface of the sun and form "sunspots."

Explosions from below throw these slags into space where they then form meteors which soon return to the sun; mostly they are projected at the equator and return in the polar regions in periods of about thirteen years. But way back when the sunfire was liveliest, some big slagbodies were thrown off by explosions and centrifugal energy in tangential directions and did not return but became planets and comets.

That our earth does not consist of original elements but of substances which have gone through processes is evident and that the process of equalizations on this chaotic slagbody meets great difficulties which required the evolution of self-working laboratories we will consider in the article on organic life.

To shorten this matter the principal difference be pointed out between the above explanation and the Kant-Laplace theory of the origin of the solar system. We begin with a partial world condition which was in antipolarity from eternity. If the world, without deviation, had been apolar and dead, no dynamic inequilibrium could have originated, nothing could have put it out of equilibrium. That the world-stuff is partly in antipolar conditions from eternity must be accepted

empirically as the requirement for it that something is happening at all in the world.

For every process, small or large, antipolarity is the basis, and, therefore, also for the nature of a solar system. This requirement is answered when a dark hard sunbody which existed in argonlike surroundings meets a nebula of polar gases, and makes it its atmosphere.

The older theory does not suppose two antipolar bodies but starts with the warm-polar nebula alone and lets it wander from one polarity into the other by cooling. We will not press the question what becomes of the high heat; perhaps another place could be found for it. The point in principle which is important is the change from one polarity into the other. The energeticists are compelled by force of their second decree to agree with us that this is impossible.

Since nature is cognized as the process of equalization of antipolar conditions this applies also to the nature of the solar system which started with the meeting of those two antipolar bodies. There is no known fact which could not be explained on this basis, but I cannot enter into too many details. The mathematical part of this matter is treated in the last article for those who take special interest in it.

The glowing slagbody, projected from the sun, became a ball, topped over and began to rotate; it flew away from the sun in a spiralic orbit. The heat of its very warm temperature radiated which the chemical heat of a nebula cannot do. Our earth became cold enough to increase its attraction with the sun sufficiently to balance the centrifugal energy, and the orbit became and remained for a long time at constant distance from the sun, nearly circular only stretched slightly by the resultant of the fixstar-attraction. But the cooling continued until the antipolarity with the sun was such that attraction overweighed the centrifugal energy and the orbit began to involve in spiralic shape.

(Meanwhile and later happened everything explored by the geologists.) Mild zones began at the poles and moved toward the equator, followed by cold zones and "glacial periods." Through nearing the sun his warming light influenced the temperature at the equator of the earth and to both sides of it in such a manner that the second temperate or mild zone started at the equator and is now moving toward the poles. Meanwhile "the history of the world" is performed.

Between the many different substances as bound stuff-conditions there is an indifferent condition in which the counterforces are equally strong and where there is the zero of dynamic preponderance. We call the equilibrated substance at this zero the **zeron**. The world would consist of nothing but zeron if nature, the equalizing and equilibrating process had accomplished its task.

Science today knows several indifferent dead substances which take no part in nature. Their names are helium, neon, argon, krypton and xenon. They are dead because they enter no action. Only under such strains as exercised in a laboratory do these substances change from gaseous to liquid but this is all they will do under great compulsion; they cannot be induced to enter a chemical process.

If there were no different latent, "aggregate," conditions, these dead substances in different chemical periods would indicate that each of these periods had its own antipolarity and its own dead point, independent of the others. But we know that by previous changes of latent states life can take place between substances of different chemical periods because every so-called "aggregate state" is also a chemical state.

The chemical forms of stuff-conditions are the toughest and their equalizations, chemical life, the most circumstantial. We shall not enter the empirical chaos of chemistry because we are interested in principles and methods of measurement. Though many chemists are sceptics and take interest in energetics, electronics and

other new attempts at explanations, in their practice they maintain the old notions and methods and fill space with matter and ether.

The architects' scale is a piece of line and the materialistic chemist's scale is a piece of weight which he uses as mechanically as the architect uses his, as if nothing happened but building and tearing down of materials. The new explanation of gravity as being not the entire but the preponderant attraction between earth and substance disrupts the absoluteness of weight. No matter how well the weight measurement has served in practical regard, in theoretical regard only the volume measurement is true.

Experience has shown the chemists the chemo-physical periods but it is in no logical connection with the atomic hypothesis, as acknowledged in some books on chemistry. Experience also gave them the law of Dulong and Petit but in many such books it is hardly mentioned because in no wise does it fit into the materialistic theory as we have seen.

The chemical part of the worldlife is the most important because it caused organic life which is principally chemical life. A true conception of chemistry is, therefore, very important for a true world conception. Whether the chemical process is now a mechanical combination of parts of the elements, which is against appearance, or whether it is dynamic readjustment, accompanied by spantomic transformation and new creation of substances is decided by whether Richmann's materialistic law or the galomalistic law of equalization is the true one.

The consequences of the establishment of the true law will not be merely philosophical or theoretical but also practical because a theory plays a leading part in practice.

## XVI. ORGANIC LIFE.

While experimental science reduces organic substances to inorganic and reversely produces organic out of inorganic substances, overstepping the supposed abyss be-

tween the two forms of life or rather finding that there is none except in forms where the science of evolution overbridges it, materialistic philosophy still halts helplessly before the abyss unable to cross it.

It was shown by Dubois Reymond and others and stands undisputed that it is impossible to explain the simplest mental or nervous phenomena of organic life with the materialistic theory of atoms and the following mechanical theory of nature. After modern materialism had fallen over the "Ignorabimus," energetism or modern energetics came as the philosophy of the scientists.

Energetics has important gains to its credit but in regard to organic life it has not done much, though it was an example from this life which served Robert Maier to establish his law of "the preservation of energy" which led to the establishment of energy as an entity. How a restless "stream of energy" can produce individuality and the other phenomena of organic life remained unexplained, not to speak of cause and object of this life. Mechanical accident as cause and no natural object, no result of life the energeticists are inclined to accept from materialism.

All monistic and dualistic philosophies are bound to have mechanistic theories of life, because their entities, for instance matter and ether, permit of no other actions but mechanical shiftings in space like the parts of a machine. It is true that mechanisms can be made which can walk and talk and do other things which are within mechanical possibility, but none can be made which feel and think because these are functions which lie outside of the idea of a machine or a mechanism.

It takes a machinist to run a machine but the "vital power" which was formerly appointed to be that machinist was discharged by science. To accept a supernatural soul as the engineer was the only thing to do in order to maintain the mechanistic theory. But we have now seen that dynamics is no mechanics and it is no longer required that a man be a machine. If a symbol is wanted let it be a natural laboratory.

In the previous articles inorganic life was shown as the process of equalizations of antipolar stuff conditions and the law of equalization was established. But this law, founded on the metaphysical law and showing the form of necessities from it for nature, is valid for all nature, organic life included. The true law of nature permits no exceptions.

Inorganic life consists of elementary equalizations, especially in temperature including electricity, but in the chemical conditions to a limited extent because it requires the coming together of many substances. The gases and also the liquids have no great difficulties in meeting but the solid bodies, so much required, have them the more; their chaotic distribution on this slag-body, our earth, make a complete nature very difficult.

Equalization of temperatures is but the beginning of entire equalization; when the temperate or mild temperature is gained the main part, chemical life, begins, advanced by catalysts like fire, light, electricity and enzymes. To gain now the complete dynamic equilibrium or apolarity also in chemical condition inorganic life on earth was insufficient because it could not properly bring together the required substances of this slagbody which had already gone through processes and had no longer the greed of the elements. To overcome the mechanical and chemical difficulties inorganic life developed into organic life as the efficient continuation of nature for reaching the zero.

That a transition from the one form to the other took place is not doubted any more but how it was possible is a much debated question. This question is put wrongly when it asks how "the lifeless" can obtain life, because it includes the supposition that there is something which installs life, for instance a soul-entity. The question is merely how could organic life originate from inorganic life?

The most difficult part of this problem was the origin of the nervous properties of organisms. The physiologists are satisfied if philosophy shows them the ele-

ments for the evolution of the lowest instincts, such as feeling and desiring. Materialism could not show that all the forces and energies manifested in instinct are already to be found in inorganic life in elementary forms because its passive atoms are perfectly lifeless and unaffectable and remain so in any constellation or motion. Dualism also had but inaffectable stuffs which could have mechanical relations in spacefilling but were perfectly unfeeling because they could not change in themselves.

The proof now that galom is the essence of the world-stuff removes the old difficulties. Galom is absolute but its two factors as tendencies of conditions, called forces, are infinitely sensitive and the conditions formed by them have all the elements of feeling. Let us now observe a piece of inorganic life.

Of a suspended pair of equal balls we make the one "positive" (**matero**) electrical and the other "negative" (**patero**) electrical. We have now an electrical couple of lovers who want to come together for life. The preponderant electrical forces on both sides want equalization and this "will" expresses itself as attraction between them. These balls "feel" each other and are "conscious" of their locations, never making a mistake, in which they beat the more complicated couples.

The electrical balls move together, meet at the middle of their way and commit the loveact of equalization of their electricities by patero-electricity passing over to the matero-electrical ball until both are relatively equilibrated. The balls are now equal and indifferent to each other and go back to their perpendicular positions where they would remain if their electricity were at the natural zero. But it is not and is attracted by the outer world. Inner indifferences and outer attractions now causes the divergence of the balls. If touched and equalized also with the outer world, they become fully satisfied and hang perpendicular, electrically dead.

Similar stories of inequilibrated hermaphroditism,

love and life, equalizations and indifferences, could be told of pairs in temperature, though here life is less intensive because common temperatures are not as loose and quickly equalized as the abnormal electricities. Much more difficult are now the life acts of chemical pairs because they require opening of inner spantomic constitutions in order to form a new constitution in the equilibration of the forces. The two substances sacrifice themselves for the creation of a new substance. The principle of all these equalizing actions is the same, meaning progressive equilibration of the counterforces.

If we now try to draw a picture of the origin of organic life in accordance with what we have gained, it is to be considered that it is the solid and heavy substances which on account of their considerable inertia create the difficulties of inorganic processes. Water dissolved such substances and brought them in contact with each other and with the gases and the water.

The fact that the simplest protoplasm is found in water indicates that there is where it originated. In shallow water was a solution of mixed chemical substances, washed together. Under the igniting influence of warm sunlight, these substances, among them carbon, salts, earths, water, air, started a process of chemical equalization. More new substances were washed too and introduced into this process. From the solid, liquid and airform a slime-condition was produced which remained the highest as far as being perceptible.

It is arbitrary from which point in the evolution of these slime-bodies we want to call them organic; they should not be called so until they have organs. Partly substances were expelled because they were not wanted in the chemical process of our slime-body and partly substances were wanted but missing because they were not washed-to by the water. Nearby were substances which attracted the slimebody. To get them it stretched parts of itself to reach and fetch them, a fact known to the researchers. These stretched parts gradually be-

came limbs, necks and mouths. A bag was developed in the body for collecting such substances, and it became a primitive stomach.

The "stomach question" now caused this slimebody to separate from its seat and move to attracting food for which also limbs were developed. It is now an organic body no matter how primitive the first organs were. It also did minding which was more complicated than the mind of the electrical ballpair, to the same degree as its chemical life was more complicated than the simple electrical life. Attraction, repulsion, desire and aversion, were in it, and the more complicated became the equalizing process, including the gaining of sunlight and mild temperature, the richer became the magnetic soul of this slimebody, in which of course there was no energy which was not also in the inorganic.

The evolution of sexuality also can be explained on this basis if we keep in sight that organic life is based on antipolarity as well as inorganic. It is known that infusoria in water under electro-magnetic induction polarize and take positions to this induction like magnetic needles.

Our theoretical slimebody was not uniform but had within itself different conditions as to be expected from its complicated chemical process. It was subjected to the influence of the earths' magnetism. The parts of higher specific heat were attracted by the cold north and the colder parts by the warm south, supposing it happened on the northern hemisphere. In the middle was the indifferent cross-section where the two halves, pulling in opposite directions, separated. Now there were two slime-bodies of which the northerly with the higher chemical heat should be a male and the other part a female, but the evolution of such pairs had not been completed. Each of these slimebodies grew again to an independent hermaphrodite, lived in the old manner until it reached its ripeness, polarized and became two. Gradually this separation of the two halves be-

came an evolved form of life, also taking place independent of the earths' magnetism.

In later evolution the two new individuals became inequibrated hermaphrodites which led to the two sexes. Since nature requires the meeting of two polarities, it works in couples, be these now two temperatures or electricities or two periodically antipolar substances such as acids and bases; it was, therefore, also inclined to make sexual pairs of its higher laboratories, the organic bodies, which enabled progressive progeneration.

Every attempt to explain life monistically failed but a dualistic explanation did not come either because it could not advance beyond mechanism, having no co-relativity of hermaphroditical factors.

Experimental parthenogenesis or the substitution by inorganic substances of the male generative substance of urchins and similar animals for the fructification of the female substance shows the close relation of some inorganic and organic substances. The principle of antipolar hermaphroditism applies to both kinds of substances and for their lives which happen to reach the apolar condition.

That materialism could not explain the instinct of organisms was as inevitable as that it could not explain the magnetism and gravity in inorganic life. What did it explain without the aid of supernaturalism and some other unproven hypotheses?

It is a very multiformous life that has evolved on earth but the science of evolution shows that these many forms mean simply improving adjustments to the circumstances and difficulties of life on this chaotic slagbody. If these difficulties were not so great we would not be here.

What we are here for is the work of collecting and preparing selected chemical substances and introducing them into our bodies' laboratories for their equalization and especially the equilibration of their counterforces to produce a body of nearly apolar stuff which then

enters death to become satisfied and happy in dynamic equilibrium.

Modern science today knows a great deal about the course of life and it is not required to report it here, but of the cause and object or result of life the scientists could not find much as long as they were blinded by materialistic prejudices. Since we are not so much interested in empirical details as in general principles, the following points are now established in regard to organic life:

1. The essence of stuff, galom, is the same in the organic body as anywhere else; an essential difference, therefore, does not exist between the organic and inorganic.

2. The law of nature or of equalization is the same for all forms of life, for all nature, and the mechanical laws are the same for all the timely and spatial circumstances in them.

3. There are no forces and energies in actions of organic life, including the mental actions, which are not existing in elementary forms in the inorganic.

4. There are no organic substances which did not originate from inorganic and cannot be reversed to such.

5. There is no essential difference between the two forms of life but all the differences have been evolved in life itself and belong to one nature.

6. Inorganic life is the basis of the organic which originated from the first as a more effective form to overcome the existing difficulties and to continue the process until its object, the final dynamic equilibrium, apolarity, is reached.

7. All life is equalization of stuffconditions and equilibration of the counterforces of the worldstuff.

8. The final result of life is the apolar, zeronic, indifferent, dead condition of stuff, nirvana or death.

## XVII. THE RESULT OF LIFE.

The end of life is death. This seems to be very plain, but it is not so plain when we say: The result of life is death.

What is death? Official science does not know. It knows much about the course of life but nothing about its cause and result. The materialists of course have their mechanistic ideas of this matter, but materialism is not science.

The Arian word "nirvana" is composed of **nir** which means out or dis and **vana** which means to blow. The outblownness of life is nirvana. Derived from it were *disvano*, *divano*, *dauthus*, *dauth*, and then death. Prof. Max Mueller, the greatest student of the subject, says, that nirvana means the completion of life and the extinction of desires and passions, but not the extinction of personal consciousness of the ghosts.

Nirvana or death does not mean nihilation and non-existence as some materialists tried to define it, but it means the outblownness, extinction of a lifefire, non-burning, inaction, rest, "soulpeace," etc. Entropy as accepted by science, in its completeness is also a sort of nirvana, a world-nirvana, world-death.

Between extinction which refers to a process in time and nihilation which refers to a thing formed in space, there is a difference. The stuff of lime and water exists also after slaking, a process which ends their different conditions. Slaked lime is dead lime, at least in this regard. And so is nature, including organic life, a slaking of inequibrated stuffconditions and where this is completed there is nirvana, death.

Entropy and nirvana, as far as developed, both meant death as the result of life, but differed in form in this that entropy was meant as an inorganic general final condition while nirvana signified the individual condition of death.

The German physicist Clausius established the sentence: "The entropy of the world advances to a maximum." He conceived it in the sense of the dualism of

“matter and energy” which through mechanical equalizations of their mixtures would finally come to an even distribution in space. But this notion of entropy presupposes that all so-called energies which are now bound in chemical conditions will become free as temperal heat and that the temperatures then will equalize to a general world-entropy, for which there is no empirical basis.

The heat in chemical conditions, chemical heat, often is partly freed before a chemical process, for instance, when oxygen becomes ozone, but this then enters a chemical process with its full factor of heat. There are also chemical processes which happen only through introduction of heat. The difficulties of nature are not in the equalizations of temperatures but in those of chemical conditions, which are bound in substances that form bodies, individualizing the process, and these bodies are the organic laboratories, plants, animals and men.

The “entropy of energy” means that energy in some way becomes neutralized to inactivity. The entropying process is not explained but it is supposed that it is not limited to bodies but is general like the equalizations of temperature and can be finished only as a whole. An explanation of organic life and its natural object is not included in this theory which maintains the mechanism of nature also in its dynamical aspect. What is gained by this theory is that the world process does not pendulate but comes to a standstill through “equalizations of intensity factors” of energy when all energy is equalized, as a machine stands still when there is no more unused energy supplied.

A worldcognition which would not include a cognition of the most interesting part of the world which lives on this earth would satisfy but little, therefore, the result of organic life requires extensive treatment in harmony with the acquired law of nature. The theory of entropy is an important step in that direction but suffers of the mechanistic shape inherited from

materialism and which always failed in solving the problem of organic life.

All nature, also organic life, means equalization of stuffconditions; requirement for it is antipolarity and the only direction of this process is that to apolarity and indifference. Nothing else but that happens in the world; everything else is circumstantial. The final result of life must, therefore, be the apolar, equilibrated condition of stuff, nirvanal or dead, wherever this process is carried through to its conclusion.

Since now in chemical regard the dynamically equilibrating process takes place between substances which must form bodies, the lifeprocess is individualized and its products also remain individualized. The result of life is represented by organic bodies which when ripe consist of apolar or dead stuff and are, therefore, the dead. They received the name **ghosts** which originally meant "guests to the sacrifices."

When we speak of ghosts we are met by the insanities which supernaturalism has attached to them, but the ghosts we are concerned with are the natural nirvanal ghosts, and not the supernatural of the church. The "enlightened" are used to reject a "ghost world" which theoretically was excusable and even justified as long as it concerned a "supernatural spirit world." But the nonsense of supernaturalism does not change the fact that there are natural ghosts as the products of the life-process on earth. The theory was wrong but the facts remain.

Materialism and supernaturalism, the pair with the mechanical naturetheory, are disproved and can no longer be used as arguments against the nirvanaistic ghost-theory, the only one which is naturalistic and based on scientific galomalism. Those who want to disprove this explanation of the realm of death must begin with disproving galom as the essence of the worldstuff for which several years a high price has been offered in vain.

We stand on a safe scientific ground when we remove

the formless entropy of the energeticists and place in its stead the organically formed nirvana which is reached by organisms. To explain it we must explain the ghost-world which shall be done in outlines without caring about the prejudices caused by false theories.

That the dead or the beings in the second department of organic existence are still called ghosts requires to restore this term to its empirical meaning and clean it of wrong definitions which it received especially since the church reformation and which made its meaning almost identical with that of spirits as mental beings.

We must start with the empirical origin of the word ghost. It dates from prehistoric times and signified a guest to sacrifices. Old Germanic words with an a in the middle changed so in time that this a became an o in English and an ei in German. The North-Germanic "ghast" became the English **ghost** and the West-Germanic "gast" became the Gothic **gaist** and the German **Geist**. But these dialectic changes were limited to (the invisible guests of the sacrifices), while for living guests the word ghaſt changed to gest and through Norman influence to guest. It is probable that the changes which led to "ghost" came after the introduction of Christianity when the church forbade the evaporated meals for ghosts and the intercourse with them for policies of its own.

When the church, in order to get rid of the interference and opposition of the ghosts, let them vanish into the supernatural, making mindbeings without physical forces out of them, so as to prevent the continual repetition of "resurrections" or materializations of them, they were made supernatural "spirits." In this unscientific sense the word ghost is still used as meaning supernatural mindbeings.

Luther's wrong translation of **spiritus sanctus** (uncommon breath of the sungod) with "holy ghost," healthy, healy ghost, has increased the confusion in the use of

this important term of "ghost" considerably so that today the research of ghosts, ghostology, is termed "spiritism."

The nirvanaistic ghostology of galomalism is no spiritism and still less spiritualism, because it says that the ghosts are no spirits but substantial physical bodies who have minds but are no abstracted minds. To explain "the nature of the ghost-world" was of course impossible for those who conceived them as supernatural mindbeings who had no nature, but became a branch, in fact the keystone of galomalistic philosophy, showing them as the final products of nature. Their condition as the result of the organic life-process is nirvana, the dynamic equilibrium, the outblownness of the process, as early conceived by humanity in the extensive intercourse with the ghosts.

Monistic materialism, as far as it existed, had to be opponent to any ghostology because its human machines were not able to produce lasting products. Dying of organisms meant the falling apart of these machines without any phoenixes arising from the wrecks or the ashes of the lifefire. A result of life there is not in the materialistic theory, unless it be the corpses. It caused that the corpses were called the dead instead of the ghosts, though the rotting corpses consist of substances which are not dead but very lively to strife for nirvana in other forms.

The semi-supernaturalistic dualism of "matter and mind" accepts the existence of a sort of ghosts but is opposed to natural ghosts and natural manifestations of them through mediumism, the "supernatural spirits" being unfit for it. Theoretical prejudices banned the facts.

Our worldcognition rejects no established facts, but requires the existence of ghosts as products of nature and their condition as gained pieces of the world-nirvana, accomplished through the organic life-process. While the energeticists believe that their final entropy will be reached only in inconceivably long time, nirvana is reached daily in pieces by the dying of organisms and

their continuation of a reduced life in the conditions over there, until the final nirvana is reached, when life is reduced to a slight pendulation over the dead point.

All condemnation and persecution of mediumism by materialists and supernaturalists and all the exposures of fraud and shamfraud in this matter have not been able to prevent the scientific establishment of the mediumistic facts as being caused by ghosts and the acceptance of them by independent people. Here is no room to report the empirical establishment of the facts; a large literature reports them. Here we are concerned with the theoretical introduction of these facts, existences and conditions into the galomalistic worldcognition which would be incomplete without an explanation of death.

To conceive human life as mere resultless exchange of matter may be in harmony with materialistic belief in the perpetuum mobile but contradicts the second decree of energetics, according to which all natural processes are equalizations of conditions which cannot end without results. Many changeable substances rush through us while living but that is on account of the great circumstantiality of life, the need of many different stuffconditions in order to gradually produce within the visible part of the body an invisible body of nearly ripe substances which finally separates and exists as a ghost.

Since a ghost is not far from the equilibrated condition it has no preponderant forces strong enough to affect our senses. We perceive such forces only while those in dynamic equilibrium are insensible. Without the use of medial substance the ghost is as imperceptible as argon and the other dead substances of the zero group, which we knock against with our noses every day but did not know to exist until some experimenters found them who are believed as long as they report only of inorganic dead substances and not of organic, which form ghosts, the group of which is called zeron.

## XVIII. NIRVANALOGY.

After our ontology, the science of being, metaphysics, the science of reality, and physics, the science of nature, follows now as fourth branch of galomalism nirvanalogy or the science of death.

The science of nature cannot properly include nirvanalogy because nirvana or death is not nature but the result of it. That the word death through many dialectic changes has been derived from nirvana was mentioned before, also that nirvana does not mean not-being but not-burning, the extinction of the life process, the condition of apolarity of the substance of an existing organic individual.

We have cognized organic life as the process of equalizing under the igniting influence of the sunlight the many antipolar stuffconditions in the chaotic distribution of solid, liquid and gaseous substances on earth. It has also been shown that the object and final result of this lifeprocess is the normal condition of substances in dynamic equilibrium and apolarity.

This lifeprocess had to individualize to create chemical laboratories for it and this individualization evolved the organic life on earth as the efficient form of a complete nature. The product of the organic process is the plasmatic, vegetable, animal and human world of ghosts in the shadow of the earth. We have seen that the doctrine of entropy has prepared today's science for the expectation of a similar result of life, because the old notion of "eternal circulation of forces" has been disproven by the energeticists.

Nirvanalogy has four branches: the historical, the experimental, the theoretical and the agitatory. Since nirvana is represented by the ghosts, which of course are independent of supernaturalistic inventions, nirvanalogy is also the science of ghostology, because it is not merely the conditions of substances but also their organizations we are concerned with.

The historical part of this work includes the explanation and proper adjustment of all existing old records of

prehistoric and ancient teachings of nirvana, such as may be found in Egyptian, Indian, Babylonian and other remnants. Also the symbol of phoenixes, which became winged angels, and their connection with the old nirvana is to be cleared historically, because a phoenix symbolized a ghost arisen from the corpse, who received wings for his ascension to overcome gravity.

Also the doctrines of a happy elysium and of heavenly blessedness and eternal peace as inherited by Christianity are nothing but old nirvanaism. That the materialists treated these matters as mere "mythology," meaning poetry without foundation of facts, is just as arbitrary and unhistorical as their attempt to make phoenix a symbol of the transition of Venus through the sunlight. Genuine christianity, uncorrupted by the supernaturalism of churchianity, transmits much of old nirvanaism, mediumism, and naturalistic ghostology.

In the historical department is to be shown also the transition from nirvanaism to supernaturalism, making mental soulbeing out of the ghosts who thereby were placed outside of nature. Also the origins of the notions of reincarnation and fetichism, resulting from misunderstandings of phenomena of mediumism, and the tales of resurrections, misinterpreting materialisations of ghosts, are to be treated in the historical branch.

It is also to be shown that, notwithstanding the downfall of science and philosophy into the dark abyss of supernaturalism, causing the dark ages of church domination, the supernaturalists, suppressing the research into the ghostworld, could not prevent the people from preserving the ancient belief in nirvana and phoenixes in the shape of the heavenly happiness of angels, and that the church could not remove but merely reshape this naturalistic conception because the churchy supernaturalism offered not substitute for it.

"Modern spiritism," an empirical ghostology which works with the "spiritualistic" or rather mentalistic hypothesis, also requires a chapter in the history of nirvanaism. As far as the facts are concerned, it is

nothing but nirvanaistic because the ghosts who manifested and effected perceivable happenings through mediumistic means, showed themselves unproductive and dead enough, notwithstanding their pretenses and the improved opportunities for the manifestations. But in regard to the teachings of the "spiritualists" they are nirvanaistic only when referring to the ghosts' lasting happiness but not in reference to the abilities of ghosts which are supposed to be superior to those of the living; but it is to be remarked that these assertions do not rest on spiritistic experiences which show the contrary, but that they come from church teachings and are carried into spiritism by the ghosts and the living where they so totally fail to fit the facts.

There was always a tendency to naturalism in spiritism because it is based on natural experiences. "The spirits are natural beings" is the position of the experienced spiritists which makes their movement so dangerous to the supernaturalists in the churches who see that danger and have started a war against spiritism.

The spiritists themselves have too many supernaturalistic prejudices to be able to take the position of science. They cannot even see how their "higher beings" deceive them and permit "Jesuit-spirits" to do things in mediumism which appear as "fraud of the mediums" to hurt their efforts and "save religion." All important mediums have been pestered by such reactionary ghosts to cause "exposures of fraud" to hurt spiritism because this hurt their teachings of a "supernatural spiritworld" which they uphold over there.

The experimental part of nirvanalogy includes mainly researches in mediumism because it is the only way to reach the insensible ghosts and study their conditions. Experiments with mediums and ghosts have already furnished a large material but its false theoretical treatment has furnished little insight into the nature of the ghosts. In general not much more has been gained by the spiritists than the revolutionary sentence that their spirits are natural beings. But that the ghosts are the

dead products of nature cannot be admitted by the spiritualists, who, therefore, were little inclined to accept "the modern nirvana," while "spiritists" who came from the side of the natural sciences soon took an interest in this only naturalistic theory of ghosts.

Experiments serve to find facts which are to be explained by theory, but when a true theory leads the experiments, facts are established which otherwise would not have been noticed. Some important facts which have been very inconvenient for the spiritualists and have caused much unjustified blame of the mediums were highly welcome to the nirvanaists because they show the nirvanal condition of the ghosts. One of these facts is the general fact that no new idea of scientific value has come from the ghosts, notwithstanding their high pretenses.

What can you expect of the dead? All labor, also the mental, is striving for nirvana. When it is reached labor ceases because there is neither natural purpose nor ability left for it. Nature acts by necessity only which is identical with equilibration of the counterforces and establishment of the normal condition in nirvana; where this final end is reached, nature reduces to the maintenance of it by slight pendulations over the dead point.

We must consider that all actions of any kind require the entrance and meeting of antipolar conditions in them. In the equilibrated ghost substances are no more intensive antipolarities and, therefore, no more expressible forces and abilities for productions of our kinds be it now sexual, mental or other productions. No new ghosts are created over there; they all came from here. The ripe ghosts, 150 years or more old, are unproductive in every respect, though a slight life over the dead point remains, caused mostly through outer influences.

The young ghosts, still in the productive years of human life, have a life parallel to ours. They grow and learn as we do, they have their love affairs which though result in no children, they feed on the vapors of our food which caused the sacrifices, they dress in substances from plant-

ghosts and build their homes of them, but they would rather be here to carry out their ambitions.

The nature in the ghost-existence leads the young ghost who died too early, also into the fulfillment of nirvana but it is not the evolved way. With all our properties and abilities we are evolved for this our earthly life to work here in the strife for nirvana, we, therefore, pity those who must die young because they lose a life full of interesting experiences and of sorrows and delights. Ghosts who died before born or as babies and remember nothing of this life grow up to maturity without cares, but the others show much interest in our life sphere and try to take part in it by "inspiration," ineffectively.

The mental processes in us are of chemo-physical nature and produce magnetic inductions of the surrounding air and the resistless ghosts in it who are influenced in such a way that they have the same mental functions as the originators. But they do not feel as being induced but consider those thoughts and feelings as their own and believe to have us inspired with them, claiming to be our inspirators, guides and guardians. It would amount to the same if they would save their trouble because they are "inspired" when they believe to be inspiring.

The theoretical branch of nirvanalogy consists of the explanation of the nirvanal ghost world. The ghosts' substances, conditions, forces, properties and possibilities, also their homes, individual existence, location, etc., are to be explained in conformity with the proven principles of galomalism. To gain a complete understanding and cognition of their so-called world is the object of the theoretical part, because there is nothing unknowable about it, also for the living.

Also the mediums and the natural requirements of mediumism must be explained and controlled for scientific ghostology. The "reactionless substances" of the zero-group are valuable for the explanation of zeron, the ghost substance, because they are inorganic zeron from which the organic differs mainly in this that it is not gaseous but in a latent state which is the resultant of the other

three, gained by organic equalizations of them. solid enough to maintain form and organization and yet stay fluidic enough to pass through organic substances such as wood and clothes, but not through masonry and glass. The ghosts, therefore, can be locked up with glass plates which is an empirical fact.

The imperceptibility of the ghosts and their ineffectiveness in our world is soon explained by this that only preponderant forces and energies are effective in nature, while forces that are neutralized in entropy or nirvana can cause no external effects. The ghosts, therefore, cannot influence our senses perceptibly, especially since these senses were hardened against their little influence by evolution, because that influence was hurtful to progress.

Also among themselves the ghosts are but little perceptible when they have reached ripeness. The young ghosts are still "somewhat material" and perceive each other as stuffy bodies, but the old ripe ghosts have but little ability for it. Their most sensitive nerves are the mental. They "think in groups" and form "spiritual bands" as they say. A thought produced by a member of such a band, by magnetic induction runs through the whole band or group as if thinking jointly in communion, as they conceive it. Those ghosts perceive each other mostly mentally and have come to the conclusion that in their normal condition, "above the material influences of the earth" they are but minds or souls called spirits.

It is probable that the doctrine of abstracted soulbeings or minds originally came from them and was suggested mediumistically to the living, that, therefore, the ghosts caused supernaturalism. The ghosts are too dead to explore their own condition, they know but little about themselves except that they are happy; questioning them by the living, therefore, resulted in nothing which would directly illustrate their world, only indirectly would show the absence of the required mental abilities. But a "band" of ghosts of scientific education took part in experiments

which fully showed the nirvanal conditions of ghosts and convinced them of it.

The durability of the ghosts which they so fondly call their "eternal life" is also explained by their dynamic equilibrium. Even with mechanical equilibrium it is evident that it cannot be overcome from within but only through disturbance from the outside; but chemically fixed, "stable," dynamic equilibrium such as represented by argon, helium and other dead substances, is undisturbable, permanent. It is easily understood that zeron, the ghost substance, placed between the polar periods, is unable to divert far from the point of apolarity because it would mean an entrance into one of the polarities which nature cannot permit because it would be against its necessity.

The nirvanal condition of the substances of the ghosts, though not perfect, is permanent. But in their case also their individual organization, their bodily personality is to be considered. That it can be injured is sufficiently experienced. Manifesting ghosts showed crippling injuries and infirmities which they had received through their causes of dying. Wounds and consequences of diseases mostly are cured over there by "ghost doctors," but cripples without some limbs cannot be repaired over there any more than here. As we leave this existence so we arrive over there. That which can be injured can also be destroyed, which seems to be self-understood, but this matter is of no great importance at present.

## XIX. POLARIZING MEDIATION.

Since the zeronic ghosts as bodies consisting of nearly apolar stuff have no preponderant forces which could be perceived by our hardened senses, it requires the mediation of half-ripe substances taken from some living persons for that purpose. The persons furnishing these medial substances which have been called medialum, are the mediums.

Scientific ghostologists, led by the theory of nirvanism make experiments only with the assistance of med-

iums. Without mediumism no manifestations of the ghosts are possible which could be perceived by the living. The research into the ghost world is required not only for general human interests in our future fate, but also to gain a complete cognition of the world which would be imperfect if the result and products of nature were not known.

The much-slandered mediums whose activities are sins against the dogmas of the materialists and "the laws of God" of the supernaturalists, have our scientific interest. America has furnished more and better mediums than the European countries, because here they have been least destroyed by burning of witches and imprisoning of obsessed. Most of these mediums came from old colonial families. The evolution of the Europeans in this respect meant the rooting out of mediumship. Female mediums were burned as witches and male mediums became abstinents in progeneration and died out because of their endeavors of holiness when they were ashamed of "carnal mindedness," in presence of the holy angels from heaven. The survival of the unmediumistic sinners evolved peoples with but few mediums and little experience but great skepticism in regard to mediumism.

Setting aside for the present the animations of sensitives which do more harm than good and have but little scientific value, mediumism consists of two principal opposite processes, namely materializations or polarizations of ghosts and their things for our perceptions, and spiritualizations of things from our world of conditions into conditions which are in some respects similar to those in the ghost-world. Both processes are forced and the gained conditions are abnormal and can be maintained only through great efforts for a few minutes.

The names of these processes came from the extremist philosophies and are not acceptable in philosophical regard, because spirit does not become matter nor matter spirit in these mediumistic processes because neither of them exists, all stuff, also that of the ghosts, being galo-

mal. But for popular reasons we are compelled to take the terms of "materializations and spiritualizations."

For materializations the women are by far the best mediums and ghostwomen the best operators, which appears natural when we modify the word materialization to motherization which it really means. But these female mediums are strongly masculine in their natures and not far from the point of sexual equilibrium or not far from being near-hermaphrodites. These man-women have less passive resistance and are easier influenced by apolar ghosts than strongly feminine persons with more intensive matero-polar force, who are nearly unmediumistic.

Every process of cooling and strengthening of the passive force is "materialization" but we limit this term to its usual application to mediumistic processes. The development of a medium consists of periodical sittings for the extraction of the medial substance, called **medialum**, consisting of half-ripe substances which penetrate the entire body of a living person and can be taken out of any part of it by ghosts when the medium is developed and in proper condition. This substance is partly consumed and partly returned to the medium in an exhausted condition.

In a similar manner as the blood of a person is increased through periodical bleeding, the medialum is increased through periodical and careful extractions of it from a medium, because nature substitutes the lost parts with healing abundance.

Careful supervision by living friends over the ghosts' operations is always required to protect the medium because on the other side are many enemies of mediumism.

The medialum at first is invisible but near the boundary of the visible to which it can be transformed by the ghosts through contraction and cooling. A ghost draws it into his own body to where once the harder body has been that was left behind as corpse. When the medialum is polarized in the direction of the passive force, sufficiently to be perceivable by the hardened senses of the

living, we have the "materialization of a ghost," though it is really not the operating ghost but the medialum which we perceive.

Light as "the spiritus or breath of the sun-god" acts spiritualizing and opposite to materializing, for which reason a dark cabinet and dim scene room are required for materializations. The "ghost hour" is the darkest and coolest hour of the night. In full light no visible ghosts are possible. To increase the matero-polar condition of the medialum is the main part of materializations, enabling the ghosts to use it for their manifestations.

The many details of these processes cannot be reported here. Enough reliable reports are published for those who can read them without blinding prejudices. I myself have seen more than a thousand materializations of ghosts, often under test conditions where only a person whose prejudice has the shape of materialistic insanity could reject their genuineness as manifestations of ghosts.

Moving of tables, chairs, and other things, playing instruments, etc., all belong to the branch of mediumistic materializations, also the doubles, spooks, spectres, apparitions, etc., also writing between a pair of slates, forming a dark cabinet, photographing ghosts, etc. Since the medialum at first has the form and organization of the medium from which it is taken, the manifestations of the ghosts have always some similarity with the medium which often reaches the degree of "doubles," even in the mental features.

The second branch of mediumism is called spiritualization, a name which fits as well as materialization for the opposite process. Really every increase of the heat of a body is a spiritualization, but here again we limit its application to the mediumistic process. Men of strongly female natures, also nearhermaphrodites, are the best mediums for the spiritualizing process of coins, flowers and other things belonging to our world of conditions. That this is a heating process in some form is shown by the fact that the spiritualized objects, which can be transported by the ghosts, for which reason they are called

“aports,” when coming back into their normal conditions, are warm, if metallic often so hot that they cannot be touched with the fingers, and if consisting of organic substances often sprinkled with water, covered with dew, to prevent their burning. The ghosts have in this way made fire.

But besides the temperature nothing is changed on such aports which shows that this process is a temporary change of their latent state, “aggregate state,” but no melting or vaporation, but in a form which has still further to be investigated. About the nature of the ghosts the spiritualizations do not give as much insight as the materializations, in opposition to which they should be called paterializations.

The third branch of mediumism is the animation of sensitives by the ghosts. Inspiration and psychic manifestation are other names for it, intended to distinguish them as “mental” from the “physical phases.” Yet they are physical or natural also because nothing else happens.

When after sufficient practice a sensitive medium submits its organism indifferently to the ghosts, they can control and animate it to actions directed by them. Mediumistic speaking, writing, drawing, etc., is done in this way. To deny that such actions are caused by the ghosts, the opponents have termed them telepathy, psychometry, subconscious cerebrations, etc., but without in the least explaining them.

In vain it has been expected that the ghosts by means of animations would give the living people “revelations” about the “spirit world.” Empty talk was the result. The value of such communications consists in this that now and then a hit is made in identifications, indicating the existence of the ghosts, and mainly in this that they show how unproductive and relatively dead the ghosts are also in intellectual activity. About the nature of the ghosts the animations brought no explanations because the ghosts themselves do not know it.

The animations have caused much harm to the living because the ghosts believe to be their inspirators, guides

and guardians and insist on giving advices, directions and random informations which have led many believers into misery. This branch of mediumism which is the most popular is also the most dangerous and most useless for enlightenment.

Where the ghosts can interfere with the affairs of the living they cause hurtful disturbances, harmful actions, reactionary discouragements. Nature which wants the living to prosper and multiply, was compelled to evolve the senses of them in such a manner that they could not perceive the ghosts and their interferences. The ghosts do not exist to do something for us but they exist for their own purpose which is to be happy, and they assure us almost unanimously that they are very happy. Happiness is all that is wanted.

Mediumism, especially the materializing branch of it, has the great value that through it we learn something about the ghostworld, not through "revelations" which proved to be worthless, but through scientific research into their conditions, which requires that a co-operation takes place of living persons and ghosts in which the first do the searching part and productive work, and the latter the fitting of the conclusions to their conditions, if they fit. The old ghosts are like still-standing pendulums which only react slightly when receiving pushes in shapes of questions or suggestions. Searching work must not be expected from them. If searching in this manner much may be learned about the ghostworld which contains nothing unknowable.

I will not condemn the unrestricted mediumism of the people entirely, without it we would not know anything of the ghost existence as yet, but it has caused much harm to the living and it will be the work of future science not only to explore mediumism and what it brings, but also show the people where it may be useful and where harmful for them. It may indeed be well to limit mediumism to scientific control but here is no room to enter this matter any further.

The question arises: Where is the ghostworld located?

That it is bound to the earth by attraction is plain and also that it must be somewhere in the atmosphere of the earth. Extensive researches into this matter made plain that the ghostworld is in the shadow of the earth where it forms what may be called "the tail of the earth" which has a few features in common with the tail of a comet, at least in regard to the location with the nucleus.

Both kinds of tails were generated by the influence of the sunlight, this spiritualizing breath of the Heavenly Father. On the comet when nearing the sun the growth of the tail is mostly unchemical and inorganic, consisting mainly of evaporation which is reversed when the comet moves away from the sun. But on earth it is a chemical process in the form of organic life, the effect of which cannot be reversed but only increased in quantity.

In both cases the sunlight repulses the products of these processes which are still held to their main bodies, causing their positions on the night sides of these bodies. Mediumistic experiments showed that most of the ghosts travel the distance from the medium to their homes and back in the shorter time the nearer to midnight these travels take place. I have friends in the ghostworld under whose heavenly dwellings it is always one o'clock at night.

Without the aid of living people the ghosts could not make these researches; but they had said before them that in their spheres are "no days and no nights, no summers and no winters," which agrees with the astronomical position in the shadow of the earth. Also the elysium of the old Greeks in the far dark west and at daytime under the earth, and "the twilight of the gods" in Germanic lore indicate the earth's shadow as the location of the ghostworld. The old god Thornatos was the personification of night and death both. In Hades, the underworld, the shades are all at home without being separated in a hell and a heaven which were later inventions.

The "seven spheres" in the ghostworld, which as well could be seventy, are layers at different heights above the earth. The spiritualists say that the rise through

the spheres depends on the growth of the "spirituality" of the ghosts which is not wrong, if agreed to that spirituality is a symbolical name for specific heat.

Inversely proportional to this heat is the specific cold or "materiality" of the ghosts which is attracted by the heat of the earth. Young ghosts are "earthbound" but with their age grows their lightness and the height of the sphere in which they are at home. At the age of about 150 years they arrive in "the seventh heaven" where the great mass of old ghosts enjoys its worryless and actionless, happy existence in the world of the dead. Lasting satisfaction and happiness in death, hardly feeling the passing of time, is the award for the struggle they have gone through.

Ethical questions have nothing to do with the gradual rise into the heaven of nirvana, because the process that leads up to it is a chemical as the continuation and completion of the organic lifeprocess in the conditions over there.

I have published four books and many articles on the nirvanaistic ghost-theory and give here the above sketch to show the fourth branch of galomalism, our philosophical world-cognition. Nirvanalogy or the science of the product and result of nature which on earth is the organic world of the dead, completes this philosophy.

## XX. RECAPITULATIONS

For technical reasons of his own the printer wants more pages to make up his forms. I therefore write a recapitulation of the main parts, "the first principles" of galomalism, the new worldcognition.

A much needed requirement in the explanation of the world is the proper distinction of "the concrete and the abstract" as they have been termed, because their confusion was a principal cause of the failures of the past. The world consists of being stuff which has various conditions that are factive in the production of a final condition, and this is all there is about the world.

But in the observation of the world notions were abstracted which served for the expression of observed facts, conditions and actions, which were, therefore, abstractives and no beings and realities, yet were often taken for such and introduced as such in so-called philosophies.

Such abstracted notions were time, space, motion and rest; force, energy, process and action; perception, feeling, thought and idea; good, bad, virtue and sin; unity, duality, numbers and figures, etc. Number-mysticism and notion-mysticism took the place of the cognitions of realities and facts. There was no philosophy, neither materialism, spiritualism nor dualism, which did not include some abstractives in its realities, and mentalism or idealism is not much more than abstractivism. All this void mysticism is excluded in galomalism, the scientific cognition of the world.

Following the old method, we have subdivided the galomalistic philosophy in four branches, the condensed features of which are as follows:

**Ontology** or the science of absolute being, proves that galom, inducted as the constant product of two towardly opposite forces, a passive and an active, or cold and heat in their many forms, is that being, the existence of which is the worldstuff. Galom, therefore, is the absolute essence of the worldstuff, the extension of which is the infinite world. Galom is included in all the empirical proven laws of modern science and expressed in vague materialistic terms as the constant product of "atomic, respectively molecular weight and specific heat," trying to give it a mechanical character by calling it "atomic heat." Galom is constant in time and space because independent of them, and it is constant in all conditions and relations, irrelative, unaffectible, absolute. It is, therefore, not a force, energy, power, cause, nor anything else but pure being, the being of the existence of the infinite worldstuff.

The positive proof of galom and the knowledge of it is the basis of galomalism, and no teasing offer of a big

reward could invite a disproof. On this solid basis now we build a safe "system."

**Metaphysics** is the science of the cause of nature or of that which is behind (meta) nature (physis). That which is efficient and causing, effective and productive, is the reality in the world, realizing the actual world of our experience. Metaphysics, therefore, is **the science of reality**.

Galom, the absolute being, is independent of conditions, but the two factors of it which in experience are inducted as forces, a passive and an active, are not absolute but correlative and may vary inversely proportional within their constant product.

In their variations these forces form different proportions to each other which are different dynamic conditions of stuff. Yet it is the stuff that exists and has such conditions, the opposite tendencies of which we abstract as forces, the one tendency to the infinitely cold and the other to the infinitely warm.

Forces, which in the older philosophies were made essences of stuffs are abstractions of tendencies of stuff-conditions, the principal two of which are cold, which formerly was stuffed to matter, and heat, which was made spirit and ether. These hypothetical forcestuffs of course cannot exist, because a force is a factor of the essence of stuff but not itself a stuff.

The many dynamic stuffconditions form two opposite polarities in which the intensities of the forces are graded from the point of indifference between them. At this zero of "preponderance" is the normal condition of the worldstuff, while the polar conditions in dynamic inequilibrium, being comparatively small parts, must be considered as abnormal, though existing causelessly from eternity.

Both polarities have equal amounts of cold or passive force, but the heat that is missing in the cold-polar part is in the warm-polar part which, therefore, is of a much bigger mass, because volume is the true measurement of mass. These two polarities form the antipolarity in the

world which is the metaphysical reality, because through equalizations of conditions and equilibrations of their forces they want to realize the normal condition of dynamic equilibrium and apolarity at the indifferent point. Each polarity has some subpolarities which are known as the physico-chemical periods, caused mainly by periodic forms of substantiations or forms of binding the conditions in substances.

While in general the world is in equilibrium in some important particulars, such as the celestial bodies and nebulae, it is not, and here dynamic equilibrium is gained by attraction and repulsion of the counterforces in the differing conditions. In the manner of the old sexualistic symbolism we call these counterforces materity and paterity. Materity, cold, attracts paterity, heat, and repulses materity; paterity attracts materity and repulses paterity, until both are equilibrated in indifference. The repulsions and attractions of the counterforces are the energies which combine in **magnetism** which is also metaphysical.

**Physics** which is the sense of the old Greeks includes the entire science of nature but is now subdivided into chemistry, physics and other branches, is the science of the equalizations of stuffconditions, respectively of the equilibrations of their counterforces. This only world-process, nature, besides which nothing can happen, is based on and caused by antipolarity and directed from both sides of it, or from both polarities to apolarity, where it has attained its object, the equilibrated state.

The true law of equalization is the law of nature, while the laws of circumstances in time and space are the law in nature. The first law refers to forces and their relations and the science of forces is dynamics, while the second law refers to mechanical circumstances, such as forms and locations of bodies and their motions and rests, the science of which is mechanics. Each of these two sciences has its distinct laws, the first of which are logarithmical and the second arithmetical, as has been developed in the previous articles.

It is an important feature of galomalism that it makes a decided separation of dynamics from mechanics including kinematics, because they have different laws, the first represented by the logarithmic curve and its axis and the second by the angle. The former philosophies had mechanics only and had to complement it with supernaturalism for explanations of some features of organic nature. Galomalism through its dynamics excludes supernaturalism.

Nature consists of inorganic and organic life, the outer features and evolutions of which are now well-known to official science which though does not claim to know the cause and result of this process but still leaves this to belief.

One branch of the science of organic life is called psychology, the proper name of which would be mentology because it does not deal with breaths but with minds as the minding abilities of organisms. This science also has done much in regard to features of mental processes but nothing beyond hypotheses in regard to their metaphysics. It cannot be blamed, because physiology, including psychology, is waiting for the elementary sciences, chemistry and physics, to furnish the elements for the explanation of mentality which were not included in the mechanistic theory of nature. Psychology, therefore, was inclined to separate from physiology and become supernaturalistic with a mind-entity of its own. Our dynamics, as shown, furnish the elements for a scientific mentology.

Inorganic life, especially in temperatures and electricities, is the preparatory and organic life the efficient form of nature. It evolved natural laboratories, the organic bodies, for complete chemical processes, taking substances from all the realms of antipolarity and through hard labor creating bodies of nearly apolar substances of an organic zerogroup, called zeron. The bodies consisting of zeron in different degrees of ripeness are the ghosts.

**Nirvanalogy** or the science of death is now the fourth and final branch of galomalistic philosophy. The nir or

out in nirvana was changed to the Latin **dis** and from **disvano** through a long dialectic development came **dauth** and **death**. The efforts to make nihilation out of extinction or outblownness, nirvana, were illogical and are set aside as no good.

The object or, to avoid teleology, the natural result of life, according to the law of nature or the equilibrating dynamical process, must by necessity be the final condition of dynamic equilibrium, where this process is blown out, extinguished. The result of life is death, and the products of life are the dead ghosts.

The ghosts when ripe are substantial organic bodies of general galomal worldstuff which through the organic life-process have reached the normal and happy condition of zeronity and apolarity between the two polarities from which the stuff they consist of came. The state of their substances, organic zeron, is the resultant of the inorganic states, the solid, liquid and gaseous, equalized in organic life. This zeron forms bodies with but weak intensities of passive or active forces which can not express themselves in our world of conditions and are, therefore, not perceptible by our senses.

Buddha said: "Suffice it to know that nirvana keeps from danger, grants security without fear, and gives happiness."

In regard to the organic bodies in nirvana this science is **ghostology** or the science of plasmatic, vegetable, animal, and human ghosts. They are no spirits or etherial, spiritual bodies, nor are they mindbeings, but they have minds in accordance with their organic evolutions and their educations and conditions. The mentalistic hypothesis of supernaturalism is entirely excluded. All the facts of mediumism, which is the only way to reach the ghosts, are supporting nirvanaistic ghostology, as shown in previous articles. The conditions and properties of the ghosts, according to what has been gained by experience and theory are the following:

The **imperceptibility** of the normal ghosts is explained by the fact that only preponderant forces of substances

are creative and active in nature and can make themselves felt by other substances and bodies, in this case by the living. Our senses can perceive such expressible forces and actions only, while the others, neutralized in entropy, or in this case in nirvana, can make neither passive nor active impressions on us. The dead are, therefore, outside of the reality of the living. Against their slight expressible forces evolution has hardened our senses because nature does not want the dead to interfere in the life of the living, where such interference as a rule was hurtful. Only through borrowing halfripe substances, medialum, from some living persons can the dead do things perceivable by the living.

The **durability** of the ghosts, "eternal life," results from their apolarity which is chemically fixed and permanent, similar to the permanent condition of the inorganic dead substances of the zerogroup, inactive and unchangeable. An apolar body can do nothing but stay in its condition because it cannot enter either of the polarities which would be against the necessities of nature, or against the law of nature.

Our living world is the realm of dynamic differences and changes, while the world of the dead is the realm of dynamic equilibrium, rest and permanence.

The **unproductivity** of the ghosts is a conclusion from facts and theory which the extravagant spiritualists and their "higher beings" do not fancy. But nature acts by necessity and not by fancy; that necessity is the labor of equilibration and where it is completed there is no more need nor ability for any kind of labor.

Productivity and actuality, sexual, muscular, mental, etc., require antipolarity which the ripe ghosts have no longer or which in them is reduced to close to the zero. Sexual productiveness is not expected of them, but mental activity the more because they claim to be "the inspirers of the living," a mistake caused through their magnetic induction by the nervous activity of the living. Anyway the intellectual emptiness of their communications plainly shows their mental unproductivity to an ex-

tent which discouraged the supernaturalistic spiritualists who blame the poor mediums for it. The “higher beings” did not come up to the mark by a false theory, neither intellectually nor morally, because they showed human shortcomings. But what can be expected of the dead whose forces are neutralized

The **happiness** of the ghosts though is the greatest and makes up for everything else that is vainly expected of them. In the dead condition the “worldmotherfather” through nature has attained dynamic equilibrium, normalcy, satisfaction and peace, including wishlessness and happiness in itself. Nirvana where materity and paterity are of even strength, was perceived by prehistoric and ancient humanity as the highest degree of happiness, finally gained by all the living people, no matter how they had acted in regard to the interests and rules of sexes, individuals and classes.

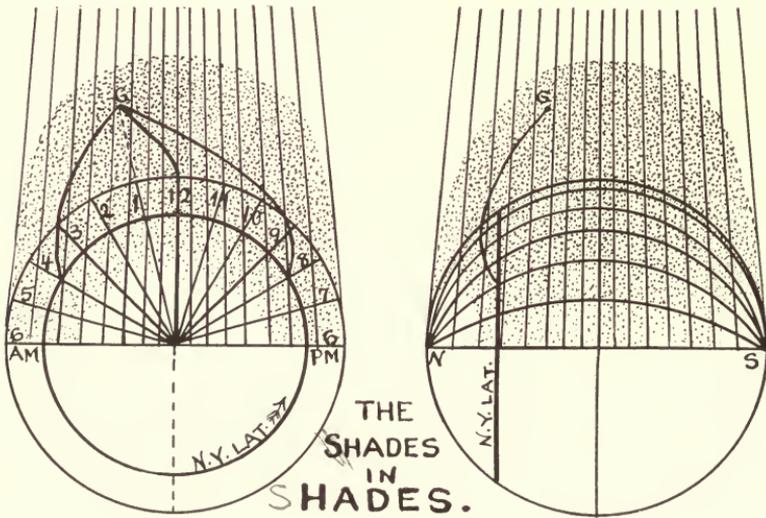


Fig. 8

It is not a moral, but a chemical process that leads up to nirvana. The “bad man” who exploits labor will get there as well as the “good man” who is exploited. Nature condemns nobody, but leads them all to final hap-

piness. The ghosts unanimously assure us the happiness in their world, and everybody knows whether he is happy or not, even if he otherwise knows but little about his existence.

The **location** of the ghostworld in the shadow of the earth is illustrated in the eighth figure.

The first part shows the globe from the north. The inner circle indicates the latitude of New York. The upward lines represent the earthshadow and the sun shines from below. The shading in the shadow indicates hades, the world of shades, forming the tail of the earth.

The ancient people when talking about it at daytime called it the "underworld," but ghosts when materialized in the dark hours point upward when answering the question of the location of their world. At nighttime, as shown in our figure, their heavenly "homeland" is the upperworld.

For the experiments to determine the location of "the world of the dead" my sister-in-law was the first medium in the year 1885. She died, 1922, when her last words were: "Ich sehe die Geister." Other mediums were used to verify the results. In our figure the point "G" indicates the home of "friend G" as he was called in "Modern Nirvanaism." Considerations of prejudices prevented me to give his full name; but a revolutionist is not entitled to such considerations and, therefore, I state the fact, positively established to my own satisfaction, that it was Galileo whose home was determined. It is but natural that ghosts of his class should be interested in investigations of their world.

When a number of times he was splendidly materialized in the seances of the great medium Mrs. E. Williams, he testified to the following measurements of his trips to his heavenly home and back being correct. At 8 p. m., 45 minutes; at 12 o'clock in the night, 22 minutes; and at 4 p. m., 32 minutes. Slight variations were caused by variations in velocity. In the northerly view from 8, 12 and 4 o'clock in the night, lines are drawn from the New York latitude upward into the shadow, with proportions

of 45 to 22 to 32, meeting at G, a point under which on earth it is always 1 o'clock at night.

At or near the 1 o'clock meridian of the earthshadow is the heavenly home of Galileo. It is free from the rush and struggle of nature on the surface of the globe. Constant mild light and temperature, also permanent comfort and happiness are in the beautiful "paradise" up there, constituted of vegetable, animal and human ghosts.

The lines of the travels of the experimenting ghosts were not straight but curved upward, and the planes in which they took place were not vertical but inclined to the south. To determine "G's" home more accurately, three measurements of his travels at 1 o'clock at night on three distant points of a meridian would be required for which there was no opportunity. The experiments so far have shown that hades, the ghostworld, consisting of no two departments for sinners and saints, but having spheres of different specific weight, is in the shadow of the earth, forming what in my first publication, in 1887, I called "The Tail of the Earth."

## XXI. GRAVITY.

This article is intended mainly for materialistic scientists who believe that Newton's laws have forever established the mechanistic theory of nature.

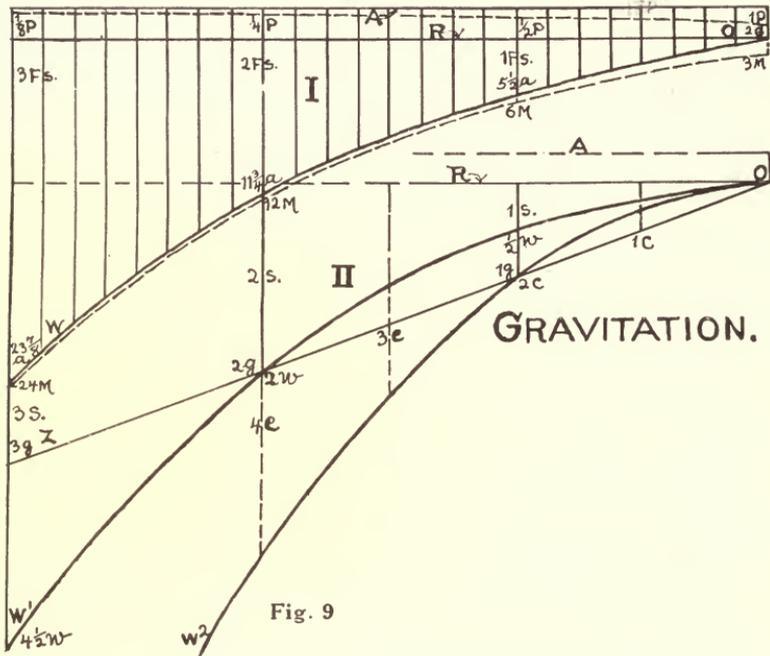
In connection with the seventh article on Magnetism the law of gravity and gravitation receives here further elaboration.

There is no other so-called "law of nature" as famous as "Newton's law of gravitation." It was the first law which said that there were essential necessities which the supernaturalists could not avoid or change. The problem then was to formulate those necessities correctly. That such formulae received the name of "laws" was done in the belief that "laws of nature" were given by a supernatural power.

It is well known that an explanation of gravity in accordance with Newton's laws has not been found. That the cause of this failure may be that Newton's

laws are false did not occur to the believers in authority. In the seventh article gravity is explained as the preponderant attraction in the magnetic relation between a body on earth and the earth, because the heat of the earth attracts the cold of that body and repulses its heat.

But the Newtonians presuppose that "matter attracts matter," no matter in what conditions the two bodies



may be. That there is just as much repulsion in the world as attraction because the two are correlative, and that a cognition of gravity is impossible without due consideration of repulsion did not occur to them. Attraction was simply taken as an absolute energy of their matter which she practices on herself, which was similar to an assertion that feminality attracts feminality, and was just as unnatural. In every other case it is perceived that attraction is found only in contrasts or between opposite conditions, but there is no opposition in the hypothetical non-polar matter.

There are two kinds of laws to be considered in regard to gravity; the mechanical laws of the circumstances in time and space which modify this energy and its effects, and the dynamical laws which formulate the relations between forces and energies that are concerned in this matter. Materialism has but the mechanical laws and makes dynamics to kinematics as a part of mechanics, as we have seen. Newton's laws are purely mechanical and were the first bulwark of the mechanistic theory of nature.

Always preferring the **positive** to the negative, we will first study the new law of falling or gravitation which follows from the galomalistic principle. In Part 1 of the ninth figure the start of the fall is at "O" where the materity of our stone which is attracted by the earth is equal to "3 M" and its paterity or heat, which is repulsed, is equal to "1 P." There remains an overweighing attraction of "2 a," the energy which in this form is called weight.

Letting the stone fall means that "2 a" changes from weight into fallenergy which presses on the resistance of the air which is not strong enough on the spot but must be accumulated to carry the stone. If this air were inclosed as in our first figure, a point would soon be reached where the resistance would be strong enough to carry the stone in rest, but this free air moves away which requires a continued intensification of its resistance.

The accumulated resistance has here, as in every motion in air, the form of cold in temperature which acts cooling on the falling body. In our figure the line "R" marks the beginning of the fall where the temperature of the stone is the same as that of the air. On "R" are two units which we will call fall-seconds the length of which is determined by conditions. After the first fall-second at "1FS" the intensified cold which carries the body in motion has cooled it to make its forces equal to "6M" times " $\frac{1}{2}$ P" which caused an increase of attraction with the earth to " $5\frac{1}{2}$  a." This increase of gravity

is expressed by acceleration of motion and is directly proportional to the increase of traversed space.

Because the body cools, its attraction by the heat of the earth is increased which increased its velocity, and because the motion is quickened and the traversed way is increased, the cooling is increased, etc., all in proportional reciprocal action.

Since resistance and way in the air are directly proportional, cooling of the body and fallenergy, accumulating the resistance for carrying the body, are also directly proportional. The curve "OW" is a transode, explained before, representing the increase of the fall-energy, velocity and way. This figure now is the new law of gravitation.

If we now look at Newton's law, it consists of two parts, a law for the increase of velocity which is supposed to be uniform, and an other law for the increase of the way which is supposed to take place in quadratic proportion to the velocity. Cause and effect are here not directly proportional but are to each other like arithmetic to quadratic progression, a principle which logics cannot accept.

Part 2 of the ninth figure shows Newton's law of gravitation. The weightenergy, which is not considered, is represented by the line "AR." On "R," from "O," the zero, are marked seconds, 1s, 2s, 3s, which this time are no fallseconds determined by conditions but the conventional seconds of our clocks. Velocity which stands for fall-energy is represented by the angle formed by "OZ" with the axis "R." The traversed way is represented by the deviation of the parabola "OW1" from "R." After the first second the way is " $\frac{1}{2}$  w," two seconds "2 w," three seconds " $4\frac{1}{2}$  w," etc.

The first part of Newton's law said: "**The velocity of a falling body is proportional to the time of the fall.**" It means that the velocity begins with zero or with nothing, because every uniform or mechanical increase when reversed leads to a zero. It was conceived that way until the modern energeticists changed it to a

transformation of "potential energy into kinetic energy." The fall-energy now begins with a certain quantity which though plays no part in Newton's law.

The energeticists cannot avoid the question wherefrom comes the energy required for the increase of velocity? Newton's gravity is absolute and suffers no changes through changes of conditions, but is modified only by spacial circumstances. The "masses" of earth and falling body in this case are unchanged amounts of matter, therefore do not account for the increase of attraction and velocity. But if gravity does not change what makes the increase of motion? No answer!

That this unexplained increase should have the mechanical or uniform shape was a supposition not founded on experience, which makes Newton's a speculative law, differing from the empirical laws which all show a logarithmic increase of the forces. Gravity thereby received an exceptional position and was unexplainable through experiences with other magnetic energies.

The second part of this speculative law says that the traversed way is in quadratic proportion to the time of the fall. It is argued as follows:

After the first second the way is equal to half the acquired velocity, which is already a law which when generalized would mean: after any length of time the way is equal to half the velocity. But in Newton's theory the second of our clocks has a special natural value and that law goes no further. After a time equal to two seconds the way is no longer equal to half the velocity but equal to the mean velocity of the second plus half the end velocity of the first second. The second, a unit of time made by men, receives here a metaphysical worth, as other units do in the mechanistic naturetheory with its number-mysticism. A law which fits one second must also fit one minute.

With this particular second as unit of action is gained the parabola "OW1" representing the increase of the way of the falling body. Above we had a fallsecond

which is determined by the conditions of body and air in every instance which, therefore, is different from the technical second that has no relations to those conditions. Doubling of the cold of the falling body determines a fallsecond in which the next doubling again will take place.

Since the technical second is constant and its application to the one fall creates the curve "OW1," we cannot gain the same curve with another unit, because each unit requires its own parabola. If we make a new second but half as long as the technical second, for the same fall we get the parabola "OW2." Newton's law is limited to the conventional second and requires a change of the fall for another unit. According to measurements the way at the end of the first second is 9.81 meter, from which was concluded that the velocity at this point is 19.62 meter, and the way at the end of the second second, 37.24 meter. The attention of those who believe that experiments with fall machines have settled this matter is called to the apparent similarity of the curves in the above figure. The experiments could not show which one to accept, only theory shows their difference, the one as a parabola and the other as a transode.

The distribution of gravity and its transmission from one celestial body to another is another riddle for the Newtonians. Newton's law for it is the mechanical spheric law of a decrease of gravity proportional to the square of the distance from the centre. This law of spacial circumstances, which has its modifying meaning, may be sufficient for the supposition that gravity is an absolute energy of "matter," independent of physical conditions, but is not enough for us.

Gravity as a special case of magnetic attraction is dependent on stuffconditions, as explained before. The dynamical law is the principal one and the mechanical law that of modifying circumstances. The first law would also apply if the form of transmission of gravity were cylindrical instead of being spherical.

Every magnet, small or large, creates its own atmosphere or "magnetic field." If in its electrical condition electrical heat ("negative electricity") is preponderant it attracts the cold of the air which becomes intensified proportionally to satisfy this attraction. If this induction takes place along a sensitive cylinder, the form of it is logarithmic as known to experimental science, but if it takes place in free air the dynamo-logarithmic factor is divided by the spheric mechanical factor which is the case with the celestial bodies.

The "density of the air," properly speaking, the intensity of its passive factor which we call materity, diminishes upward about logarithmically as has been established by measurements. The spheric factor 'is hardly noticed in such small heights. The induction of an atmosphere is caused by the heat of the earth attracting the cold of the air and this is the manner in which this attraction is transmitted to the cool moon. The atmosphere of the earth reaches as far as her gravity.

Since this magnetic induction takes place in a spherical and not in a cylindrical body, the distribution of it is according to the dynamo-logarithmic law divided by the mechanical spheric law. In small distances the first factor and in large distances the second factor is the largest. This matter is much more complicated than the Newtonians take it to be.

The "forcelines" following from the new law, such as the throwline and swingline, are details which are not important in a general presentation of our galomalistic world-cognition. In former works I have drawn those lines. If we fasten a rubber string to a ball and swing it around our hand in a vertical plane, its orbit will not be circular but stretched downwardly. The radius rector of the earth's orbit is also "elastical" and the earth has magnetic relations with the fixstars.

The resultant of the attraction or gravity of the fixstars lies in a certain direction. This gravity in proportion to that to the sun may be as little as the fixstarlight in proportion to the sunlight, but its existence cannot be

denied and is sufficient for the actual stretching of the earth's orbit to a shape which was taken to be an ellipse.

It was required to show in this special article that gravity which remained a world riddle to the materialistic world-mechanics, offers no special difficulties to galomalism. Gravity differs from any other magnetic attractior which we observe only through its greatness; its explanation, therefore, belongs to the explanation of magnetism as given in the seventh article.

## XXII. SUMMARY DEFINITIONS.

A new philosophy like galomalism creates new ideas and concepts for which the older languages have no names. Some new words had to be invented as terms for new concepts. Also several old concepts are reconstructed and required adjusted definitions of old terms in order to avoid misunderstandings. To avoid the old confusion of philosophical terms and to determine in what meanings a number of words are used in galomalism, a list of definitions from the former articles is annexed:

**Antipolarity**—The contrast of the two polarities in the dynamic inequilibrium of stuffconditions. They are towardly opposite in antipolarity in such a manner that on the one side of the indifferent point between them the passive cold and on the other side the active heat is preponderant without ever changing their constant product. This antipolarity is the metaphysical reality which is the basis of nature.

**Apolarity**—The absence of polarities at the point between them, the condition at the indifferent point of antipolarity. The apolar stuffcondition is that of dynamic equilibrium, entropy, nirvana, death, because this condition takes no part in nature but is at the zero of nature, either prenatal or postnatal.

**Chemicature**—the chemical condition of a substance in so far as it is a bound proportion of the dynamic factors to each other, independent of physical properties. In chemicature chemical cold and chemical heat are the opposite tendencies, forces and factors which the ma-

terialists called "atomic weight and specific heat." The chemicatures are analogous to temperatures, only that the first are bound internally while the latter are loose. Not much use has been made of this word in the articles because it is new though needed to connect this new idea with that of temperature. Chemicature means the dynamo-chemical condition of a substance, no longer conceived as atomical or molecular.

**Counterforces**—the two towardly opposite forces of stuff which do not exist each by itself, but are co-related as the opposite tendencies of the stuffconditions. One of the counterforces is the passive cold and the other the active heat, both of which appear in loose and bound forms. Generalized we give them the sexual-symbolical names of materity and paterity which in another aspect are the factors of the stuff-essence.

**Dynamics**—the science of the forces, the factors of the essence of the worldstuff, which are no "motions of atoms." Our dynamics are not identical with mechanical kinematics and are no part of mechanics. The dynamical laws have the logarithmic and the mechanical laws the arithmetic forms. The separation of dynamics from mechanics is an important part in galomalism which thereby shows the mistake of mechanistic nature-theories.

**Energetics**—the doctrine of essential energies as entities, including the two tendencies of magnetism, attraction and repulsion, as well as the tendencies in stuffconditions, cold and heat, the latter of which we call forces. A dualistic energetics with a passive and an active energy gains two energy-stuffs when filling space with them, and these stuffs cannot be essentially different from the old forcestuffs nor can they have other relations to each other but mechanical. In energetics, therefore, the mechanical theory of nature is maintained.

**Electronics**—the new doctrine which splits the atom into several parts and makes a solar system of electrical bodies out of it. The nucleus consists of "positive" or

passive electricity or electrical cold which when stuffified is analogous to matter, and swinging around it are electrons consisting of "negative" or active electricity or electrical heat, or of spiritus or ether. Nothing is gained by this doctrine but a subdivision of the old indivisibles which may be a step to the acceptance of infinite divisibility as demanded by logics.

**Equilibration**—to make of equal strength two counterforces. Originally its sense was purely mechanical, but the materialists applied it also to the forces where it really does not fit anymore since we have separated dynamics from mechanics. However, for popular reasons we keep the term and mean now by the equilibration of the forces the establishment of dynamic indifference and neutral condition. In this sense nature is the process of dynamic equilibration in antipolarity which leads to apolarity. Since forces in themselves do not exist but only as tendencies in conditions, their equilibration is an abstraction of the equalization of these conditions.

**Ether**—lightstuff, heatstuff, identical with the genuine spiritus, spirit, as the breath of the sungod. The essence of ether is absolute heat; ether, therefore, is the exact counterpart to coldstuff or matter; it is not empirical but hypothetical. We reject ether as one of the forcestuffs which are contradicted by the empirical laws of the constancy of the forceproduct, according to which a force like heat is an essential factor of stuff but never itself a stuff nor the essence of stuff. Etherialism as a part of the dualism of "matter and ether" is a remnant of genuine spiritualism.

**Forcestuffs**—the hypothetical stuffifications of the counterforces of stuff. The passive materity was made motherstuff, materia, matter, and the active paterity was made fatherstuff, pateria, which received the names of spiritus and ether. These forcestuffs are coldstuff and heatstuff, both of which we reject because the essence of the worldstuff is not a force nor two forces but it is galom the constant forceproduct

as per the empirical laws. The older philosophies did not have this constant and made stuffs out of the forces which was their fundamental but excusable mistake.

**Galom**—the essence of the worldstuff, inducted from the empirical laws as the constant product of the counterforces. Galomalism, the principal subject of this work, is the world-cognition which results from the knowledge of galom. Neither the passive force of stuff out of which was made "matter," nor the active force out of which was made spiritus and ether, nor their dualistic mixture are the stuffessence, but it is the constant force-product, galom, in which the forces are inversely proportional factors. Stuff, therefore, is neither material nor ethereal but galomal.

**Ghost**—originally a guest to the sacrifices, then generally a human being in the second department of organic existence. A ghost is a substantial, stuffy body which has attained the condition of near-nirvana through the organic life-process. After supernaturalism had distorted the old naturalistic conception, the ghosts were made unstuffy souls or mind-beings. The ghosts in the realm of death have minds but are not minds.

**Latenture**—a bound or latent condition of a substance which as a proportion of the counterforces is analogous to temperature and chemicature. The latentures are various latent conditions of a chemical substance and are practically identical with the "aggregate states" of the materialists, yet in a widened sense because within the solid, liquid and gaseous states of a chemical substance there are several latent states, as shown by carbon which has seventeen known latentures. The latent substances are also each a separate chemical substance which enters into a chemical process with its own proportion of forces, a matter which was conceived as "multiple proportions" in chemistry. The latent substances should all be marked in the list of periods and in the chemograph.

**Laws**—in philosophy are made formulae to express essential and circumstantial necessities. We distinguish dynamical and mechanical laws. The metaphysical laws which have been named “empirical laws of nature” belong to the dynamical laws, formulating the relations of forces and conditions which cause nature. The law of equalization, respectively of the equilibration of the counterforces, also belongs to them. The mechanical laws include all the circumstances in space and time which play modifying parts in nature. The first laws are the laws of nature and the latter the laws in nature.

**Magnetism**—the energies, attraction and repulsion, which are expressed in the relations between stuffconditions. We may say: Materity attracts paterity and repulses materity, and paterity does the reverse, yet not in mechanical but in logarithmic proportions, because these energies are under the same law as the forces which they represent. The energy called gravity is magnetic attraction because the heat of celestial bodies attracts outer cold and repulses outer heat. On earth the overweighing magnetic attraction, called gravity, is expressed as weight and velocity. Gravity is no “universal attraction of nonpolar matter” but is dependent on stuffconditions. The fact that a body is the heavier the colder it is shows that in the average condition of the earth heat is overweighing.

**Materialism**—the cosmic philosophy based on the ontological hypothesis that the worldstuff essentially is passive motherstuff or materia, matter. It stuffifies the passive factor of galom and makes out of this force a passive forcestuff, matter, the essence of which is cold, hardness, resistance, not relatively but absolutely. The other galomal factor, heat, is for materialism merely an accidental property of its matter which could be missing. It is the extreme counterpart of etherialism or spiritualism which make the worldstuff out of the active galomal factor, heat, etc. Both are to be found only in their dualistic mixtures, often with the complementing addition

of supernaturalism. The extremistic philosophies were caused by the ignorance of the constant forceproduct in the empirical laws.

**Maturity**—the general name of the passive forces in different forms, cold in temperature, “positive” electricity or electrical cold, hardness, resistance of substances, chemical and latent cold. As absolute “materiality,” it was made the essence of matter, but now it is conceived as the passive factor in galom, the stuffessence.

**Mechanics**—the science of spatial and timely circumstances in nature, therefore of bodies, their forms, sizes, locations, motions, rests, etc. Mechanics consists of statics or the science of mechanical rest and of kinematics or the science of motion. The latter is called “dynamics” by the materialists because they made motion the active forces, their matter having none. In galomalism dynamics with laws of its own is separated from mechanics with other laws.

**Medialum**—the medial substance taken from a medium by the ghosts for manifestations perceivable by us.

**Nature**—the worldprocess taking place in the antipolarities of stuffconditions for the equalization of conditions and equilibration of maturity and paterity. Nature, therefore, includes everything that happens in the world.

**Nirvana**—the condition of non-burning and extinction of the lifefire, “soul-peace,” heavenly blessedness, eternal happiness, etc. In our physics nirvana is identical with dynamic equilibrium, apolarity, zeronity, indifference, etc. Nirvanaism teaches that the ghostworld is the realm in which nirvana is approached in different degrees. The word “death” has been derived from nirvana. Nirvanalogy is the science of the realm of nirvana and the ghosts, in the empirical part also called ghostology.

**Paterity**—the active counterforce to maturity, opposite in character to the same. Heat, spirituality, etc., are other names for paterity. In its sexual-symbolical form it includes all the active forces in nature.

**Polarity**—the deviation of stuffconditions from the zero condition where no polarity exists. The pateropolar conditions are on the warm and the materopolar on the cold side from apolarity where both meet at the indifference or zeronity of antipolarity. "Polarity" is accepted for popular reasons though real poles which are extremes are not existing in this matter; if they existed there would be the extremes of matter and ether and no galom.

**Space and time**—abstractions of mechanical circumstances in nature. Space is our abstraction of the extension of stuff, and, therefore, volume the true measurement of stuff. Time is our abstraction of the progress of action. Motion is the combination of space and time. The mechanical laws apply to all of them.

**Religion**—any primitive philosophy which personifies and gives personal properties to its hypothetical entities, stuffs, forces, etc. The religions resulted from the answers to the question: Who is the creator and ruler of the world? There are matriarchal, patriarchal and dualistic religions. By stripping them of the personifications of their entities, they became materialism, paterialism (spiritualism) and dualisms.

**Spantom**—a spanned part in the interior of a substance, pulsating in a certain manner to transmit influences and to equalize received conditions. The spantom takes the place of the materialists' molecule, but since this concept is new its explanation will be found in the fifth article.

**Soul**—the ability of organisms to function with their nerves and brains in a manner which is called feeling, desiring, willing, thinking, reasoning, understanding, etc. Included in the soul are instinct and mind. Supernaturalism separated the souls of organisms from them, made supernatural independent beings out of them and made the ghosts those beings. Of course, the ghosts have natural souls, but they were then made essential soul-beings, having no physical bodies. We reject the doctrine of supernatural souls and minds, and say that the ghosts

are no such abstract beings but stuffy physical bodies. Originally, soul was the Arabian for spiritus or breath.

**Stuff**—the spacefilling, spacestuffing being, the abstracted extension of which is space. Independent of space, stuff is the only being entity in the world, as was proven in connection with the proof of galom. The world-stuff is galomal and not material nor spiritual or ethereal, nor a mixture of them. When we mention "stuff" we do not mean matter, the existence of which is denied.

**Temperatometer**—An instrument similar to a thermometer, but measuring temperature instead of heat.

**Transant**—The figure in the system of the contravaxant which represents the preponderant forces which are, therefore, called the transant forces to avoid mechanics, because their law, transantism, is not mechanical.

**Transcde**—The new curve limiting the transant.

**Zerogroup**—The group of dead inorganic substances in the periodical list, argon, neon, krypton, xenon, and helium.

**Zero of Nature**—The point of extinction of nature as the process of equilibration of the counterforces, where nature has attained its result; therefore also the zero of dynamic preponderance or transantism. This dead point is also the natural zero of the temperatometer and the chemograph.

**Zeron**—The large group of organic substances at or near the zero of nature or the point of death.

**Zeronicity**—Another aspect of apolarity and nirvana.

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