

BOOK TWO

CHAPTER VI

MESONS

i. RADIOACTIVITY

[Author's note in manuscript, "incomplete, undergoing work". Ed.]

At the turn of the century, thorium and its spontaneous emission, called radiation, was known to modern science. In 1925 there was the British Rutherford and a proposition that at least some part of the radiant atom's self-radiance was some one or ones of the constituent parts of the atomic nucleus.¹ Then came Henri Becquerel at the Sorbonne in Paris, the Curies and radium and polonium and actinium, self-radiant. Now, of course, at the present transcience, uranium, strontium and polonium and the others. And nuclear fission, and fissionable forms. And artificial production of these. In the process of nature, natural radioactivity, radioactive atoms of the earth's crust emit an α , alpha, particle, then a β , beta, particle, then a γ , gamma, radiation.

The alpha particles emitted by radioactive nuclei are helium proto-isotopes. The beta rays are electrons. The gamma rays are very short electromagnetic waves.

Gamow² calls all radioactive atomic nuclei, the oldest of atomic nuclei. They are the heaviest, the most complex, composed of the greatest number of growth moieties, the most highly organized. But if as they continue their radioactivity they become retrogressively lesser and lesser complex nuclei, then these lesser and lesser complexities are the oldest.

Thus it was discovered that, left alone by themselves in the earth's crust, without any human interference, the atoms of the various known radioactive series do continuously, over predetermined successions of patternings, cascade

their radioactive phenomena uninterruptedly, returning to the evolving cosm in specifically devolving patterns that which the evolving cosmic gamut has specifically evolved within them. An inevitable process. The expression patterns of the various radiant series are definite, established, specifically evolved patternings. The dynamics of the cosmic escape of the radiant energies of the series are exact dynamics. The dynamics of the escape of these radiant energies form exact release patternings. The progressive radioactive disintegration process of the highly evolved cosmo-material organism which is the uranium atom, radium atom, the thorium atom, and like that, is an established, progressive process, yielding, step-by-step, the release of definite material energy-forms and definite vibratory energy-forms over definite patternings. These questions present themselves for consideration: What is the cosmic implication of uranium? Of thorium? Of polonium? Of radium? What is achieved by the phenomenon, radioactivity? The specific release of specifically evolved energy patterns over specific dynamics which, highly potent, are more potent than was the sum of the involved patterns, achieved by way of the internal dynamics of the internal structure of the periodic patterns of periodic movement that comprise the uranium atom. The thorium atom. The polonium atom. The radium atom. The self-radiant nucleus of any atom ...

Atomic nuclear radioactivity was still in those immediate years after the mid-century, called the decay of the atom. But the term, decay, conveys the idea of failure, of impotent degradation of potential, a process of useless retrogressive internal disorganization, meaningless retrogressive dedifferentiation, sequential backtracking toward chaos, ideas propounded in the service of the dogma of a maintenance of a balance of an energy-potential which does not change nor ever has changed nor ever shall change. It is, therefore, not a good term to use in relation to natural atomic radioactivity. The implication is wrong. The picture produced by the association centers of the human cerebral cortex in response to this conditioning word-stimulus falls short of the full import of that to which the term is applied. A dogma, just because it is a dogma, does not necessarily mean that it is truth that has been dogmatized. What may seem like a meaningless disruption of a status quo may be in reality a phase in the process of ruption of a new potential of a higher order.

In that which is its radioactive stage, the material atomic nucleus progressively devolutes The potential of the released pattern of radiant energy which the self-radiant atom creates and releases is greater than was the inner potential of the atom, greater than the potential of the surrounding medium within which the atoms are created and into which they eject their transmutation of the cosmic complex.

The manner in which the cosmic atom releases its transmuted pattern complex of the complexly patterned quanta of the cosmic complex of the cosmic gamut of the periodicities in relation with which light manifests depends upon the nature of the vibratory complexes which its internal dynamics generate, plus the nature of the vibratory energy-forms which it absorbs, plus the nature of the moieties of material energy-forms which it ingests, upon the manner in

which the internal structure of the atom is formed and upon the manner in which the atom functions internally.

Within the open cosmic system an atom becomes self-radiant because it has taken on successive [patterns] of those periodicities of the cosmic gamut of the total manifestation in relation with which light manifests, has altered the pattern complex of those periodicities within its own internal dynamics and has continued to alter them to the point at which the new potential achieved by the transmutation is such that the mechanism can no longer sustain it, at which point it is ejected by the mechanism as radiant energy along with a moiety of the atom's component material energy-forms ... In antithesis, when the contact pressure of the encroaching moiety which would enter it is great enough to cause the atom to be unable to refuse it entry, the confusion created within it by this forced entrance causes the atoms to explode. It then no longer is an atom. This organism has died by violence.

... The new potential which has not heretofore existed is formed within the dynamic ultimate material fragment and emitted by the organism, a potential which is greater than any which has heretofore existed within the cosmic gamut

Its radioactivity is the ultimate atomic release of ultimate atomic-patterned light patterns, a dynamic expression of that specific cosmic function of that specific cosmic functionary, the thorium atom, which is that stage of its cosmic function in which it delivers its finished product in the form of a specific vibratory pattern complex which is the specific thorium mutation of the cosmic vibratory complex, and releases successively one or ones of its less evolved complex constituent material energy-forms. Its radioactivity is a dynamic expression of a final stage of a cosmic function of the thorium atom as a transformer and a stepper-upper of the complex of the patterning of vibratory energy-forms of the cosmic gamut of the total manifestation at that stage of this function in which the heightened potential is being expressed in the transformed patterns of the periodicities as they are being expressed by the atom. The vibratory energy patterns which come out of the radioactive atom in its untampered cosmic state are not the same pattern of vibratory energy which went into the formation of the atom. The radiant release pattern is a specifically conditioned pattern. A pattern conditioned by that cosmic dynamism which is the radioactive atom.

The release of the vibratory pattern complex which is the radiant emission is accompanied by a degradation of the internal structural arrangements of the contributing material energy-forms of which the atom is composed and by a degradation of the number of those moieties, but this disintegration or degradation is occasioned by a stepping up of the potential of the involved vibratory energy-forms and occurs at term when the stepped up potential and the material moiety are ejected by the atom. The moiety as it is ejected is related with a periodic-complex-pattern, the potential of which is greater than was the potential of the periodic-complex-pattern with which it was

related when it entered the atomic organism. The degradation of internal arrangement accompanies the expression of the fabricated complexities of the new mutation of those cosmic periodicities which accompany the cosmic manifestation of light.³

What results from the release of these new patternings?

ii. MESONS AND ELECTRONS

a. Mesons

During the second quarter of the 20th century modern science discovered, of itself, that the material particle which it had termed a proton although it do be the fundamental unit of construction of atomic nuclei is not an ultimate indivisible discrete cosmo-material moiety, but is a material organism composed of two moieties to which were given the names, meson and neutrino. The meson having a mass approaching that of a proton and the neutrino being in comparison an extremely less considerable something comparable to but differing somewhat from an electron.

The meson is a massing, material periodic pattern of periodic motion which is composed of fundamental nidal material particle type periodic patterns of periodic motion which, cumulative stage by cumulative stage, advancing level after advancing level of complexity and organization produced by the progressive interaction of the massing tendency of a nidal system and the anti-massing tendency of the vibratory energy-forms via the waves which they produce, operating over this stage of the law and order of the one eternal becoming of the cosmic gamut of the total manifestation, has arrived at this level of complexity and organization which is called the meson; a constant, dynamic, progressive and cumulative processing of the constantly occurring fundamental nidal material particle.

In the universes of a nidal system of universes, groups of the periodic patterns of periodic movement that are the fundamental nidal material particles become organized in relation with each other forming discrete organisms of these interrelatedly organized fundamental nidal material energy-forms. Within the systems of galaxies of a universe, these become more complexly formed and more highly organized. Within a system of the systems of galaxies of a universe, the heightening tendency continues. Within a galaxy of a system of galaxies, the process becomes more so. And so on. Call the periodic pattern of periodic movement as so produced in our system of galaxies, the meson.

In one modern scientific way of thought mesons are considered to be the final product of intergalactic space of a system of galaxies of a universe; there no further material form is thought to evolve. In intragalactic space, the galaxy

is thought to further fabricate mesons, forming protons of a meson and a neutrino. No further fabrication of the proton is thought to take place in parasolar intragalactic space. Solar systems of a galaxy carry the process farther; the extrasolar space of a solar system fabricates atomic nuclear departmental protoisotopic organisms of protons and something called an electron: and forms isotopes of these protoisotopic organisms and an organism called by Janet⁴, a nucleole. The interplanetary space of a solar system forms atoms of these protoisotopic and isotopic atomic nuclei and additional electrons. The planets of a solar system form certain early molecules of these material atomic energy-forms by shifting their electrons and co-organizing the atoms. The earth planet forms some of these early molecular material energy-forms high up in its photosphere, some in its gaseous hydrosphere.

b. The Electron

Within intragalactic space of a galaxy this something which has been termed an electron first occurs. Its naming is significant. In its pantomimic reference to the body, the Swedish word, lugg, is the forelock of the head hair and in its verb form, Swedish lugga means to draw or drag by the forelock; in English the verb is lug; in Icelandic the noun form is lokker; in English the noun is lock and the head hair is called the locks; the front hair, the forelocks. In folklore the radiant beams of the sun moving through the heavens are its locks. In Greek, the sun moving through its part of the galaxy emitting beams of that which is called light, attracting its planets that move toward and around it, is referred to as $\eta\lambda\epsilon\kappa\tau\omega\rho$, elektor, said $\tilde{a}lektor$. The Khamite phrase upon which this was formed must have been l g r d, indicating some interrelationship of manifestation, movement, change and the allowance of the ability eternally to cause periodicity eternally to become: upon which the Latin formed the word *lucere* and the Sanskrit *ruc*, both meaning to emit beams of brightness and splendor in a steady radiance: and *lux*, *lucis*, that which is so emitted; and the Greeks formed *leukos* which the Goths pronounced *liuhop*, the Old Saxons pronounced *lioht*; Old High German, *lioht*; Anglo Saxon, *leoht*; German, *licht*; Middle English, *liht* and *light*; English and American, *light*.

Because it caused certain objects to move away from it and upon occasion emitted this which is called light, the Latins called a yellowish, translucent resin found on seashores, in alluvial soils with beds of lignite, *electrum*. The Arabs called it 'ambar, because they thought it to be a form of ambergris. In English it is called amber. While amber emits this which is called light and causes certain objects to move away from it, silk emits this which is called light and causes certain objects to move toward it. When the elements of the heavens engage in certain maneuvers, the clouds foray, and this brilliant change which is called light moves through the heavens, sometimes startlingly. The brilliance and the movement collectively are called lightning. When Benjamin Franklin⁵ flew his length of silk string into the moving, light-emitting manifestation of the integrated proceeding of cosmic change which is this kind of storm in

the heavens, he called that which he thereby brought down, electricity: that the condition of which is such that it causes certain objects to move toward or away from it at the same time seemingly emitting that which is referred to as light.

When modern subnuclear physicists came upon tracks in a cloud chamber seemingly left by a discrete moiety which, according to the tracks it created, moved rapidly and caused other particles to move toward it, they called that, the tracks of which they thus found, an electron, a unit of electricity; called the power of its attraction, a unit charge of electricity and expressed a unit charge of electricity in terms of 3.4×10^{-10} electrostatic units. Then they found something that seemed the same as this which they called the electron with the exception that it caused certain particles to move away from it. So they called the former a negative electron and the latter a positive electron and designated the former as a unit charge of negative electricity and the latter as a unit charge of positive electricity. Then it was found that these particles which were termed electrons move at various rates of speed and that their mass seemingly varies with the rate of speed at which they move. In other words, an electron of a certain mass travels at a certain rate of speed while an electron of another mass moves at another rate of speed. The electron that has a mass of $1/1000$ of that of a proton, approximately, is translated through space at the rate of 300,000 km per second, approximately, which is the velocity of those electromagnetic waves which these scientists called light waves. This variation of mass would mean either that electrons are a brood of varying material energy-forms or that electrons of a standard type individually vary their mass after they are born, or that that which produces them are variations of a basic morph and that electrons vary upon a basic morph pattern directly as that which produces them vary; or any combination of any two or all three of these.

When they are not traveling free in space, electrons are found in those massing periodic patterns of periodic movement called atoms and in those massing periodic patterns of periodic movement called molecules. All atoms are built around an atomic nucleus by electrons. All atoms do on occasion emit electrons. The electrons emitted by the atoms of that furious thermal mixture of atoms, called the sun, cause the formation of the aurora borealis. On the earth all radioactive atoms emit electrons. All chemical reactions occur by means of the electrons of molecules. In chemical reactions molecules emit electrons with the speed of 300,000 km per second in the wavelength spectrum of visible light. This would mean that all chemical reactions are accompanied by emission of or the transfer of electrons and the concomitant emission of or transfer of a vibratory energy form that produces a wave of this category but it does not necessarily mean that the electron so emitted is automatically translating itself at this rate of speed: it may be traveling as a passenger on that wave or it may be just incidentally accompanying that wave. An electron and a wave with a velocity of 300,000 km per second and certain frequency and intensity arriving simultaneously upon the surface of water of the earth's lithohydrosphere breaks down a molecule of that water. Strangely important

some things, these electrons!

c. Mesonic Genesis of an Electron

1. *Historic Comment*

Around the beginning of the 20th century, the French scientist Louis de Broglie⁶ propounded a law of internal motion as related to material energy-forms in which motion and periodicities and material forms of the atomic order produce an internal energy-form which does not otherwise exist. In Austria, Erwin Schrödinger carried de Broglie's law further. In Germany, Werner Heisenberg, and in Copenhagen, Niels Bohr came up with a furtherance of the theory called the uncertainty principle which was a theory concerning this movement so produced. And in 1926 a new system of mechanics was devised based on this uncertainty principle. But all of these still fixed their thinking within the old inhibiting dogma of just so much and no more cosmic energy and none conceded anything about an eternal becoming. A sort of schizophrenic rigidity of dogmatic thinking which nulled free thought. And the uncertainty principle still remains a name applied to a phenomenon that cannot be explained within the inhibitions of the dogma. And the new mechanics uses the name but not the understanding of the phenomenon: and these physicists, therefore, allow for its existence but cannot take it into their computations.

What de Broglie was propounding was in effect a law of the genesis of periodic mutation of periodic movement by and within a periodic pattern of periodic movement that is of a higher order of potential, potence, potentiality and energia and endynamia than is that of this organism that produces it as this occurs in the atom: mutation forms of energy that do not otherwise exist: enhancement of potential by means of the internal movement of the periodicities of an organized system of periodic pattern of periodic movement.

Gamow then propounded his theory that this mutation form of energy which the component parts of the atomic nucleus working interrelatedly produce exudes from, at a certain stage of its formation, or is exuded by, the atomic nucleus and that this which so exudes or is so exuded, - - this exudate, - -, after it is exuded onto the outer surface of the atomic nucleus, then being there acted upon by the nidal environment becomes congealed as it were into this which is known as the electron and gave this, in his serious theorizing, as the origin and birth of an electron. He also identified the so-called β ray, emitted by radioactive atoms, as this electron. It is now known that all atoms are radioactive in varying degrees and do emit an electron as one stage of the radioactive process.

If Gamow be correct, electrons are units of something produced by some part of the material organism which is any atomic nucleus and is periodically extruded by the nucleus which after it is extruded and while it is still on the

periphery of that which extrudes it becomes environmentally conditioned and which then either moves away from that source of its origin at varying rates of speed or does not move away from it.

All atomic nuclei emit electrons. Within the limits of present day mensurational abilities, all electrons are considered to be the same; but the rates of speed of moving electrons vary: an electron produced by, within and extruded from a hydrogen atomic nucleus and an electron produced by, within and extruded from a helium nucleus or any other atomic nucleus are the same, but one as it moves away from the nucleus of its origin does so on the wings of an excursion that translates through space at certain rate of speed, with certain intensity and the other, or others, do so on wings that translate through space at, another or, other rates of speed, other intensities. Since all nuclei are not the same and all electrons are the same, then it is not the nuclei per se but something within each of the unlike nuclei which is the same in all atomic nuclei that produces this which has been termed the electron, and the variations in intensity and speed, etc., with which it is endowed as it leaves its source are produced by the nucleus per se and would be the specific periodic mutation of periodic movement which the structural organization of that nucleus as such produces and is added to the electron upon its escape from the atom. An electron then is a massing periodic pattern of periodic movement produced as an ontogen by some specific portion of an atomic nucleus, and which is extruded from that which forms it into the nuclear organism which in turn extrudes it on the wings of a periodic pattern of periodic movement that is produced by the nucleus.

All atomic nuclei are composed, among other particles, of protons. A neutral hydrogen nucleus is a single proton. A neutral hydrogen nucleus emits an electron. Hence an electron is produced by and within some part of a proton whether that proton is functioning as an independent organism, i.e., the neutral hydrogen nucleus, or as a part of whatever more complex atomic nuclear organism in which it may have become incorporated. A proton is composed of two unlike subnuclear forms, one called a meson and one which has been called a neutrino. A meson is a massed morph closely comparable to a proton. A neutrino is closely comparable to an electron. In that case, let it be considered that it is the meson of the proton of the atomic nucleus that forms and extrudes that which after extrusion becomes the electron which latter at an incomplete stage of its genesis and before its extrusion is that which has been called a neutrino. A neutrino is positively charged. An electron is negatively charged. A neutrino causes certain objects to move away from it and was mistakenly called a neutrino to distinguish it *in contra* to an electron. It is this neutrino that is now called a positive electron and an electron that is called a negative electron.

2. Mesons

Mesons are of two known types called mesons and mu mesons. These act somewhat differently, the one from the other. A meson would be a meson that is

not at this split instant gravid; between gestations, as it were. That subnuclear mass which is called a mu meson would be a gravid meson: a meson which is gestating its neutrino, having not yet extruded it.

3. Neutrino

A neutrino would be a naisant electron which has been gestated and extruded but remains attached to the meson: a nursling as it were, a neutrino electron. It is positively charged and will cause certain movement away from it.

4. Proton

The immediately postpartum meson and its nursling neutrino would be the proton: once known as the nucleus of the neutral hydrogen atom. The proton is positively charged: it repels.

5. The Electron

When, as the organism known as the proton, i.e., the meson with its closely clinging nursling neutrino electron, again becomes gravid, this first nursling neutrino-electron detaches itself, moves away from but remains within the immediate environment of the meson. Here, its positive tendency now exhausted in this environment, it undergoes mutation becoming transformed into a negative fully developed electron.

6. The Neutron

When the meson and the first nursling neutrino have become the proton and the again gravid state of the meson has caused this first neutrino-electron to become the electron, then this first electron moves outward, leaves, but huddles the periphery of the proton, the second, the nursling, neutrino-electron moves outward from the meson but remains within the protonic nursery. This organism at this stage would be that organism which is now called the neutron, was recently called the neutral hydrogen atom, once called the 1H1 atom and which Janet, calling it all of these, calls, as well, a nucleole, and signifies E+P.

At the protonic level the hydrogen cloud chambers show, as well as a number of periodic patterns of periodic motion which progressively form material morphs, an equal number of types which are called antimatter. These two types should be designated as those which manifest a further massing tendency and those which manifest a tendency to interfere with any further massing tendency. Each antimassing particle is a massed periodic pattern of periodic motion which will not permit of any further massing. Each massing particle

is a massed periodic pattern of periodic motion which will permit of further massing. Both, the specific antimassing $n d n$ and the specific massing $n d n$ are endowed with external motion of translation. Meeting at certain specific velocities, the antimassing $n d n$ and the massing $n d n$ of the same type level disrupt each other: that is, disorganization of the massed organization of each occurs with a sudden release *in toto*. The cloud chamber shows, also, another type moiety which, emitted by certain $n d n$ under a certain type of collision, travels in translation at an excessively rapid pace for a quite short distance and disappears; i.e., ceases to leave a track in the cloud chamber.

d. Self-Reproduction of Material Energy-forms

Here, then, is something new. A meson is a complex periodic pattern of periodic movement. All periodic patterns of periodic movement produce, by and within themselves, periodic mutations of periodic movement. A meson is a cosmic nidal spiral massing, complex periodic pattern of periodic movement; it is a complex cosmic nidal material energy-form composed of dynamically, progressively and cumulatively organized fundamental nidal spiral massing material energy-forms. All nidal material energy-forms are nidal spiral massing periodic patterns of periodic movement. All nidal spiral massing periodic patterns of periodic movement produce, by and within their structural organization, specific periodic mutations of periodic movement which they emit as a radiant excursive vibratory energy-form into the surrounding discursive massing nidal movement. The meson, then, produces by and within its structural organization a specific type of periodic mutation of periodic movement which it emits periodically as a radiant excursive vibratory energy form into the immediately surrounding nidal discursive spiral massing movement where it produces a clutch of waves of definite proportions and intensities and velocities; each of which as such is a non-massing periodic pattern of periodic movement.

But a meson also does this something else: it produces a periodic pattern of periodic movement and emits it. Here, then, produced periodic pattern of periodic movement reproduces. This is something new. The self-reproduction of cosmo-material energy-forms begins here.

And, although an electron is said not to be a material energy-form, this, be it true, but tends to enhance the reproductive $n d n$ hypothesis; for cosmic periodic patterns of periodic motion are not in their earlier evolutionary stages, material.

e. Limitation of the Nidal Spiral Massing Tendency

Some momentous indication here. This which so occurs is a massing periodic

mutation of periodic pattern of periodic movement: a massing mesonic mutation of massing material energy-form, called during its formative stages the neutrino, in its adult stage the electron; its adult mass something close to 1,000 times less than that of the meson; its adult size something close to 1,000 times that of the meson: it makes up in bulk what it lacks in mass: a bulky unmassing as it were, accomplished within and by means of the meson. The implication of reproduction is continuity of internal meaning of that which reproduces itself. The internal meaning of the meson is the indication here to be sought. The quite evident implication of the neutrino-neutrinoelectron-electron is a definite trend antithetic to the nidal spiral massing tendency expressed by a periodic pattern of periodic movement and evinced in the continuous, dynamic, progressive and cumulative formation of material energy-forms.

The meson, innately, because of its structural organization, product of the initial straightaway polarized automotive fundamental cosmic-type periodic pattern of periodic movement and the polarized spiraling tendency imposed by the intersection upon that polarized straightaway movement overcomes by an integrated internal movement of components of its organized pattern any nidal tendency toward further tightening of the spiral in this nidal spiral massing tendency and, presenting the most intense nidal spiral mass in the total cosm, becomes a barrier against further progression of this continuous nidal spiral massing tendency which latter unchecked would continuously increasingly tend to eliminate dimensioned space, eventually prevent the further spatial organization of matter and then finally disrupt organized matter itself: does this by producing a new state of cosmic matter: a state of cosmic matter produced by cosmic matter, more bulky and less massive than the cosmic matter which produced it; a reverse, discrete conditioning of nidal space in which the polarized, straightaway automotive translation of the fundamental cosmic-type periodic pattern of periodic movement and the massing spiraling imposition inhering in the fundamental nidal material energy form have, mutation upon mutation, produced an organized configuration of structural periodic movements that, the critical integration of these two inherent tendencies, now reproduces itself. At this turning point, these nidal massing periodic patterns of periodic movement called mesons, these nidal material energy-forms of maximum mass and minimum space, produce the new state of matter, the new type material energy form called the electron, a discrete state of less mass and more space, initiating a stage of more complex, a discrete, spatial organization: utilizing the dynamics of space in spatial relationships. From here on the nidal influence on continuous genesis is once more not the dominant influence; the integration of the straightaway movement of translation and the spiral movement of mass as expressed in ever more and more complex and more highly organized spatial arrangements in discrete periodic patterns of periodic movement supercedes.

It is now to be seen that the meson is the unit discrete presentation of an integration of all of the nidal phenomena of the cosmic gamut of the one eternal becoming and that the meson-produced reproductive phenomenon called the

electron is the unit discrete product of that integration. It will presently be seen that this nidal phenomenon called the electron is the manifesting mechanism which is effective in the immediately succeeding stage of the allurance of the ability eternally to cause periodicity eternally to become, as that allurance progresses in the cosmic gamut of the total manifestation of this one eternal becoming.

This one deduction concerning the cosmic gamut of the law and order of the one eternal becoming presents itself: the spiral massing tendency of a nidus reaches its height in that discrete organization of all cosmic genetic tendencies prior to its occurrence which is here called the meson; and these generalizations are logical: the spiraling tendency of a nidus is cosmogenetically limited: spiral massing cannot go beyond that limit.

f. A New Stage in Cosmic Genesis

The further progress of continuous cosmic genesis occurs by means of interaction of nidal type spirally-massing material energy-forms, non-massing vibratory energy-forms, and anti-spiral-massing material energy-forms. And, beginning with the mesonic organization of the cosm's genetic tendencies, the one eternal becoming, which is a continuous, dynamic, progressive and cumulative enhancement of potential, i.e., of the ability eternally to become, occurs by means of discrete rather than general enhancement, manifesting in discrete space-controlled massing.

This new stage of cosmogenesis, comprised of a complex of the fundamental cosmic non-spiral-massing, polarized, straightaway movement of the cosmic lattice, the intersectional polarized spiral-massing modification of this movement and this combination of anti-spiral-massing, non-massing and spiral-massing movement; a complex which produces discrete spatially-controlled massing is first manifested in the progressive and cumulative formation of the atomic nuclei and then in the atoms, then in the atomic plasmas, carries on through the formation of the molecules,⁷ on through the molecular formation of the gases, liquids, solid crystals, the colloids, when another, a further, new, the paracrystalline mesomorphic state occurs. Up to and somewhat beyond this stage, each progressed material energy-form is larger in size but correspondingly less spirally massive than its immediate predecessor. The nidal discrete spatial organizing tendency increases and the nidal spiral massing tendency decreases.

iii. VARIATIONS OF FUNDAMENTAL MESONIC STRUCTURE

A meson is an evolutionary product of a nidal system of universes. It is formed in the intragalactic space of each galactic system of each universe of each system

of universes of each nidal system of universes of each intersection of the golden flowing lattice that is the cosmic gamut of the total manifestation.

The fundamental mesonic structure, then, is a universal intragalactic structural arrangement of some type of periodic patterns of periodic movement which a universe of a system of universes fabricates of that variation of the fundamental nidal material energy-form which its system of universes produces. Throughout the total cosmic gamut, intragalactic spaces are variations upon a basic intragalactic pattern. Each intragalactic space produces its variation upon the basic mesonic structure. Mesons of the various intragalactic spaces of any nidal system of universes therefore vary with the type variation of a basic mesonic structure which the intragalactic space which produces them produces.

Since each galaxy of a universe produces its variation, then the mesonic variety which the suns of that galaxy produce are specific to that galaxy and common to the suns of that galaxy. Call these the fundamental galactic variation of the fundamental mesonic structure.

iv. AGAIN CONCERNING MUTATION

Excerpt BOOK ONE, CHAPTER XXII, Mutation, Section iii, Mutation, Subsection c, The Words, Mutate, Mutation.

In their origin the words change and mutate may have been used to convey closely related but significantly non-identical phenomena of proceeding of the one eternal becoming. Mutate seems to be related to the permanent increase of potential.

The accent is on the word permanent: and the contradistinction was in relation to the non-permanence of change as against the permanence of mutation.⁸ And the implication is that a mutation as it becomes is a structural basis of the next succeeding mutation, a progressive and cumulative process.

Variations are changes, alterations wrought upon a fundamental structure without destruction of that fundamental structure. They are transient, reversible, will-o'-the-wisp. Mutations are the progressive evolvments of the fundamental structure: that which its potency produces; the result of its potentiality. They are permanent, irreversible, prophetic. The game of the cat's cradle exemplifies progressive and cumulative mutation, a process in which each progressed form is a mutation of its immediately preceding form becoming what it is by means of specific permanent irreversible destruction of the forms of the structural components of the pattern out of which it emerges in which the fabric of the destroyed form remains, retained, forming the fabric of the new form.

¹George Gamow, *The Birth and Death of the Sun*, (New York: The New American Library of World Literature, Inc. 1952) p. 72.

²*Ibid.*, p 55.

³Author's note in manuscript, "resay."

⁴Charles Janet, *La structure du noyau de l'atome consideree dans la classification periodique des elements chimiques*. (Beauvais: Imprimerie departementale de l'Oise, 1927).

⁵Benjamin Franklin (1706-1790), American philosopher, scientist and statesman. [Ed.]

⁶Gamow, *op cit.*, p 47.

⁷For further discussion of these, see Book Three, Chap V, Molecular Mophosis.

⁸See the balance of this Sec, iii, Chap XXII, Book One.