

## MODERN PHYSICS AND HOMOEOPATHY\*—I

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"*Concepts of Consciousness*" was the topic of an address delivered at Patkar Hall, New Marine Lines, Bombay, on 10.11.1983 by Dr. Stanislaw Grof, the Founder-President of the International Transpersonal Association (I.T.A.). He is a practising Psychiatrist, and especially in the field of Psychoanalysis. He is of last engaged in the exploration and study of "Consciousness", the "psyche" itself, through analysis by free association, dreams and drugs (L.S.D; Mes-carine, etc.). "*Journeys beyond the Brain*" is the title of his book under print. The view of the World or the Universe and of Man has undergone striking alteration from time to time in the history of Scientific Thought, especially in Physics. Modern Physics has rediscovered the ancient spiritual tradition and wisdom of the East in the World-View of the Holistic Concept and the Dynamic Nature of the Universe and of Man; this view is held in the Homoeopathic Philosophy. Modern Science and Eastern Wisdom (the Vedantic, the Buddhistic, the Chinese and the Theosophical) are not incompatible; Spirituality is a legitimate dimension in Science. The Scientific and the Mystical-Intuition Methodology are both conducive towards the total comprehension of the Reality; the latter is "the missing link" of the former. The pragmatic application of the Newtonian-Cartesian Concepts of the Universe and its phenomenal technological successes in modern science has not deadened the inquiring spirit of man. The philosophical assumptions underlying those concepts were questioned in the light of newer experiences and data that were unearthed; these are not explicable and explainable in the light of the earlier philosophical assumptions, which were overthrown by Michael Faraday, James Clark Maxwell, Albert Einstein, Max Planck, Fritjof Capra, Prof. Rhine, David Bohm, Karl Pribram and Stanislaw Grof. The conceptual frameworks or theories

evolved by the mind from time to time to explain the phenomena of life were termed "*paradigms*" by Thomas Kuehn in his "*Structure of Scientific Revolution*". Apt similies may be used to explain the relationship between the "Paradigm" and the "Reality", such as the "Menu" & "Dinner"; the "Map" & the "Territory". The development of Science in the history of man reveals a discontinuous process, a series of exploded theories and concepts termed "*Conceptual Catastrophes*". Four such "*Paradigm Shifts*" in a major way have occurred in the history of Science, especially in Physics:

1. Ptolemaic Geocentric Theory of the Solar System to Heliocentric Theory of Copernicus and Galileo.
2. Phlogistone Theory in Chemistry to the Combustion Theory of Lavoisier.
3. Newtonian-Cartesian Theory in Physics to the Einsteinian Theory of Relativity.
4. Einsteinian Theory to the Quantum Theory of Max Planck in Physics. To this may be added the latest shift to the Atomic or Particle Physics of Earnest Rutherford and Fritjof Capra.

We shall briefly trace the evolution of the concepts of the Universe from the time of Classical Physics in the 16th-17th century (materialistic, mechanistic and deterministic) to the beginning of this century of Modern Physics (relativity and quantum theories, and atomic/particle physics), the concepts of both Consciousness and Matter. The latter forces one to adopt a much more subtle, holistic and "organic" view of the Universe and of Nature. The World-View in Classical Physic was that of Mechanics and Electrodynamics. The 16th century Newtonian-Descartesian Model of the Universe and of Man (1596-1650)

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was a mechanical one, and a most formidable foundation supporting all of Science, and providing a firm basis for natural philosophy for almost 3 centuries. It was as follows:

1. **Space:** the stage on which all physical phenomena took place, is 3 dimensional, of classical Euclidean geometry, is absolute, always at rest, unchangeable and immovable.
2. **Time:** It is a separate dimension, again absolute, having no connection with the material world and moving smoothly, uniformly from the past through the present to the future in a linear sequence, without regard to anything external, of itself and by its own nature. Time and Space are thus discontinuous.
3. **Matter:** the elements of the Newtonian world were material particles, which moved in this absolute empty space and absolute time. In mathematical equations they were treated as "mass points", small, solid, concrete, and indestructible objects/bodies out of which all matter was made. This model was similar to that of the Greek atomists (Democritus and Leucippus). Both were based on the distinction between the fullness and the void, between matter and space. Matter was, therefore, always and essentially passive. Greek atomists did not use "force" in their model.
4. **Force:** Newtonian atomism includes a precise description of the Force acting between the material particles, simple force, depending only on the masses and the mutual distances of the particles. It is the force of gravity, connected rigidly with the bodies it acted upon.
5. **Motion:** All physical events are reduced, in Newtonian mechanics, to the motion of material particles points in space, caused by their mutual attraction, i.e. by the force of gravity. In order to put the effect of this force on a mass point into a precise mathematical form, Newton had to invent new concepts and mathematical techniques of differential calculus. Newton's equations of motion are the basis of classical mechanics. They were considered to be fixed laws and were thought to account for all the changes observed in the physical world.
6. **Consciousness:** Matter with its particles and forces between them were seen as created by God, and were thus not subject to further analysis. In the beginning God had created all

these, as well as the fundamental laws of motion, which set into motion the whole Universe; and it has continued to run ever since, like a mechanical machine, governed by immutable laws. Consciousness emerged out of matter, an epiphenomenon of matter. Life, consciousness, mind and intelligence are mere in substantial accidentals, a product of a highly developed nervous system, of physiological processes of the brain, inert, passive, blind. The connection between the brain and consciousness was clinically established: head injury, brain tumour, carotid artery pressure and the influence of LSD, which gave more credence to this concept.

7. **Principle of Determinism:** The mechanistic view of nature is closely related to a rigorous determination. The giant cosmic machine was seen as being completely causal and determinate. All happening had a definite cause giving rise to a definite effect. The future of any part of the system could, in principle, be predicted with absolute certainty if its state at any time was known in all the details. Newton stressed the strictly *causal nature of physical phenomena* under the immutable laws of motion of matter.

Rene Descartes introduced the fundamental division between the observer and the observed (the world). This formed the philosophical basis of the rigorous determinism of Newton. The universe existed objectively out there independent of the observer. Such an objective definition of nature became the ideal of all science. The model of man was characterised of Mind-Body dichotomy, like a machine made up of component parts.

This Newtonian-Cartesian Paradigm based on the "Philosophical Materialism" had striking successes in technological advances. This prestigious model for scientific thinking was applied to all fields of science besides Physics: Chemistry, Medicine, Social Sciences, Economics, Psychology, etc.—in the 18th and the 19th centuries. It was extended to Astronomy to explain the basic nature and features of the solar system by Newton, reintroduced later by Laplace—the mathematician. Newtonian mechanics was extended to the continuous motion of fluid and to the vibrations of elastic bodies, as well as to explain the phenomenon of Heat—the energy created by the complicated "jiggling" motion of the molecules. It was considered the ultimate theory of natural phenomena.

The discovery in less than a century later of electro-magnetic phenomena by Michael Faraday and

James Clark Maxwell revealed the limitations of the mechanistic Newtonian model to explain the new physical reality. A complete theory of electromagnetism was evolved, through the introduction of a much subtler concept of a "Force-Field" which had its own reality and could be studied without any reference to the material bodies. Newtonian mechanics was replaced by *Maxwell's Theory of Electrodynamics*. This gave birth to the vast technology of electrical engineering, the *Wave Theory of Light* (a rapidly alternating electromagnetic field travelling through space in the form of waves). Visible light is only a tiny fraction of the electromagnetic spectrum, the other fractions discovered later being also oscillating, electric and magnetic fields differing only in the frequency of their oscillation, viz. X-rays, Gamma Rays, Cosmic Rays, Radar and Radio Waves. Maxwell interpreted these fields in mechanical terms as states of mechanical stress in a very light space-filling medium, called *Ether*, and the electromagnetic waves as elastic waves of this Ether, like the vibrations of water and sound waves. Einstein, 50 years later, declared no ether existed; the electromagnetic fields were physical entities in their own right which could travel through empty space and could not be explained mechanically.

The first three decades of this century changed the whole situation in physics radically. The concepts of Newtonian World View were shattered by the emergence of the Relativity Theory of Albert Einstein (1915), the Quantum Theory of Max Planck (1900) and later, of Atomic-Subatomic Physics of Rutherford and Fritjof Capra, the nuclear or high-energy physicist.

#### The Relativity Theory:

1. **Space**—is not three-dimensional, but four-dimensional, *Time* being the fourth dimension. Time is not a separate entity; time and space are not discontinuous but intimately connected and form four-dimensional "*Time-Space Continuum*". There is no universal, uniform, linear flow of time as in the Newtonian model. Time and Space are not absolute, but relative to the observer; both become merely elements of the language a particular observer uses for his description of the phenomena. Einstein through insight was convinced of the possibility for men to reach an integral vision of reality by transcending time. His was a static timeless view of the Universe, kind of realization of Spinoza's ideas transported to theoretical physics, as of Plato and Giordano Bruno (Prof. Ilya Prigogine, the Nobel Laureate, in his 17th Jawaharlal Nehru

Memorial Lecture at New Delhi on 13.11. 1983 on "Between Time and Eternity—Nehru and Einstein").

2. **Matter**—is not solid, concrete, elementary particles, but a form of Energy. Even an object at rest has energy stored in its mass, and the relation between the two is given by the famous equation  $E=mc^2$ ,  $c$  being the speed of light. The constant  $c$  is of fundamental importance for this theory. It was extended to include gravity, i.e. the mutual attraction of all massive bodies. It is widely used in astrophysics and cosmology. The force of gravity has the effect of "curving" space and time, and ordinary Euclidean geometry is no longer valid in such a curved space, just as the two dimensional geometry of a plane cannot be applied on the surface of a sphere. The curvature of three-dimensional space is caused by the gravitational field of massive bodies. There is a correlation between time, space, matter and energy. All measurements involving space and time are relative; the whole structure of space-time depends on the distribution of matter in the universe, and the concept of "empty space" loses its meaning.
3. **Field Concept** was further elaborated by Einstein. Einstein's emphasis on scientific humanism was evident in this perception of moral values. His attempts to reach an intemporal vision of the universe went on in parallel with his emphasis on free creativity of man and on aesthetic beauty as an essential component of scientific activity. His was a unified view of the universe, a Thought-system rather than a mechanical one made up of separate component objects. His intuitive perception of order, rhythm, pattern, harmony inherent in all the operations of Nature bordered on the mystical, when he affirmed:
 

"The most beautiful and most profound emotion we can experience is the sensation of the mystical. It is the power of all true Science. We to whom this emotion is a stranger, who can no longer wonder and stand rapt in awe is as good as dead. The cosmic religious experience is the strongest and noblest mainspring of scientific research."

The science of *Atomic Physics* came to birth at the turn of the century with discoveries of X-rays and Radio-active substances, which could not be explained in terms of the mechanistic world view of

classical physics. *The phenomenon of radioactivity* furnished definite proof of the composite nature of atoms, which not only emit various types of radiation, but also transform themselves into atoms of completely different substances. These phenomena were used as new tools to probe deeper into matter. Max von Laue used X-rays to study the arrangements of atoms in crystals. Atomic probing was carried out by Earnest Rutherford through the bombardment of atoms by the alpha particles emanating from radioactive substances, these particles being high-speed projectiles of subatomic size. The atoms turned out to consist of vast regions of space in which the extremely small particles, the electrons moved around the nucleus, bound to it by electric forces. Matter as being hard, solid particles was no longer tenable. This was the *Planetary Model of the Atom* which when magnified to the size of the biggest dome of St. Peter's Cathedral in Rome, would have the nucleus of the size of a grain of salt, and the electrons as the specks of dust whirling around it in the vast space of the dome. The other particles—protons and neutrons—were also discovered. The Laws of Atomic Physics formed the basis of all Chemistry. The number of electrons in the atoms of an element determine the element's chemical properties; the whole Periodic Table of Elements was built up on the basis of the internal arrangements of the protons, neutrons and electrons in the atoms of the elements, with their specific numbers.

**The Quantum Theory:** made it clear that even these particles were nothing like the solid objects of classical physics. The subatomic units of matter are very abstract entities which have a dual aspect. Depending on how we look at them, they appear sometimes as particles, sometimes as waves; and this dual nature is also exhibited by Light which can take the form of electromagnetic waves (Wave Theory) of particles (Corpuscular or Particulate Theory). This apparent contradiction gave rise to "koan-like" paradoxes which finally led to the formulation of the Quantum Theory. Heat or Light radiations are not emitted continuously, but the energy appears in the form of "energy packets" (Max Planck) or "*Quanta*" (Einstein). These were recognized as the fundamental aspect of Nature. The light quanta are the bonafide particles now called "*photons*", massless and travelling always with the speed of light. Einstein extended this concept to all forms of electromagnetic radiation, as being not only waves but also quanta.

The seeming contradiction or incompatible paradox at the subatomic level was resolved through *Heisen-*

*berg's Principle of Indeterminacy or Probabilities.* At this level matter shows "tendencies to exist" and "tendencies to occur," with no certainty of definiteness in time, place and manner. These tendencies are expressed as probabilities and these are associated with mathematical quantities which take the form of waves. This is why the particles can at the same time be waves. They are "probability waves", not "real" three-dimensional waves like sound or water waves. All the laws of atomic physics and atomic behaviour are expressed in terms of these probabilities. The solid material objects of classical physics dissolve into wave-like patterns of probabilities, and these patterns, ultimately, do not represent probabilities of things, but rather probabilities of interconnections, which alone confer meaning. Quantum theory thus reveals a *basic oneness of the universe.* Atomic probing reveals nature not as any isolated "basic building blocks", but rather as a complicated web of relations between the various parts of the whole; as a unified integrated intricate network or web of processes, events; an immense uninterrupted flow of information—in and behind which there is a *Cosmic Order.* We do not deal with objects separately, but with their representations in the mind with their complex interrelationship of the parts to the whole and the whole to the parts. Solid objects are an illusion,—in isolation. These relations always include the observer in an essential way. The human observer constitutes the final link in the chain of observational processes, and the properties of any object can only be understood in terms of the object's interaction with the observer. The classical ideal of an objective description of nature is no longer valid. The Cartesian partition between the I and the world, between the observer and the observed, cannot be made when dealing with atomic matter. The observer, the observed and the process of observation become links in the phenomenon of observation. The Mind-Body dichotomy in the model of Man is replaced by a complex integrated Mind-Body Entity with interactions of one on the other. The wave nature of the electrons imparts "probability waves" arranged in different orbits to their movements around the nucleus inside the atom, unlike the electron particles circling around the nucleus in the Planetary Model of the Atom. The electrons settle in orbits in the atom in such a way as to preserve an optimal balance between the attraction of the nucleus and their reluctance to be confined,—the two opposing, competing forces in the atom. It is the high velocity movement of the electrons which makes the atom appear as a rigid sphere, just as a

fast rotating propeller appears as a disc, and gives matter its familiar solid aspect. The electron waves in the orbits arrange themselves in such a way that "their ends meet", i.e. they form *patterns known as "standing waves"*. The wave nature of the electrons accounts for the identity of the atoms and for their great mechanical stability. The atomic state can be completely specified by a set of integral numbers, called "quantum numbers", which indicate the location and shape of the electron orbits.

The basic unusual features of the *atomic world* can be summed up as follows:

1. Tendencies to exist and tendencies to occur "probabilities".
2. Particles reacting to confinement with motion.
3. Atoms switching suddenly from one "quantum state" to another.
4. An essential inter-connectedness of all phenomena.
5. The basic force which gives rise to the atomic phenomena is the force of electric attraction between the positively charged atomic nucleus and the negatively charged electrons. The interplay of this force with the electron waves

gives rise to the tremendous variety of structures and phenomena in our environment; the interaction between electrons and atomic nuclei is thus the basis of:

- a) All chemical reactions
- b) Formation of Molecules, i.e. of aggregation of several atoms bound together by mutual attraction.
- c) The basis of all solids, liquids and gases.
- d) The basis of all living organisms and of the biological processes associated with them.

In order to understand the nature of matter further in its ultimate essence, one has to understand the nature of atomic nuclei which contain practically all its mass. In the 1930s, the quantum theory has unravelled the world of atoms, it was therefore the main task of physicists to understand the structure of the nuclei, their constituents and the forces that hold them together tightly. We enter the realm of *Nuclear Physics*, which we shall discuss in the Editorial of the next issue of the Journal, along with the relevance of the New or Modern Physics to the Principles and Practice of Homoeopathic Philosophy, which antedate Modern Physics. New Physics validates the sound foundations and structure of Homoeopathy.

## PART-II

We pursue our study further in the realm of *Nuclear Physics*. The atomic nucleus is about one hundred thousand times smaller than the whole atom and yet contains almost all the atomic mass; this indicates its high density of matter. It consists of the nucleons (protons—positive electrical charge and neutrons—no electric charge) and the electrons with negative electric charge. The electrons constitute only a tiny fraction of the total mass, but give matter its solid aspect and provide the links necessary to build up the molecular structures. They are responsible for the chemical properties and are involved in the chemical reactions. The nucleons are of the same quantum as the electrons. They respond to their confinement with high velocities. The strong nuclear force within this nuclear matter keeps the nucleus in an extremely stable state, though extremely dynamic equilibrium. All atomic and molecular structures exist only under very special conditions, when the temperature is not too high, so that the molecules do not jiggle too much. When the thermal energy increases about a hundredfold, as it does in most stars, all these

structures are destroyed. The "basic building block of matter" were considered as "atoms" and all atoms consisted of the "*elementary particles*" protons, neutrons and electrons, the ultimate primary indestructible units of matter: atoms in the Democritean sense.

This notion of elementary particles as the primary units of matter had to be abandoned in view of two further parallel developments in modern physics:

- a) Experimental—the discovery of over 200 "elementary" particles by 1975.
- b) Theoretical—a complete theory of nuclear phenomena must incorporate both the quantum and the relativity theories; and this has not yet been formulated. This remains still the central problem of "particle physics".

Relativity theory showed mass as a form of energy—a dynamic quantity associated with activity, or with processes. A particle can no longer be seen as a static object, but has to be conceived as a dynamic pattern, a process involving the energy which manifests itself as the particle's mass. *Dirac* formulated

a relativistic equation describing the behaviour of electrons, accounting for the finer details of atomic structure. It also revealed a fundamental symmetry between matter and anti-matter. He predicted the existence of an Anti-electron with the same mass as the electron but with an opposite charge, called the *Positron*, discovered two years later. For every particle there exists an anti-particle with an equal mass and an opposite charge. Pairs of particles and anti-particles can be erected if enough energy is available and can be made to turn into pure energy, the reverse process of annihilation. These processes were predicted from Dirac's theory long before they were actually discovered in Nature, and verified. The whole question of the division of matter appeared in a new light. Two particles colliding with high energies break up into the particles of the same kind, created out of the energy of motion ("kinetic energy") involved in the collision process. The subatomic particles are thus destructible and indestructible at the same time. Matter can be divided again and again "ad infinitum", out of the energy involved in the process. The dynamic-relativistic view conceives particles as dynamic patterns of processes, which involves a certain amount of energy appearing to us as their mass. High-energy collisions of subatomic particles are the principal method used in "*Particle or High-Energy Physics*" in huge particle accelerators. The nature of the particle world is dynamic and ever-changing. Matter is mutable. The whole universe appears as a dynamic web of inseparable energy patterns. There is the basic unity and the intrinsically dynamic character of matter. The properties of a particle can only be understood in terms of its activity—its interaction with the surrounding environment. The particle cannot be seen as an isolated entity, but has to be understood as an integrated part of the whole. In the particle interactions, the forces between the particles—mutual attraction and repulsion—are visualized as the exchange of other particles. The two concepts—force and matter are unified in this 4-dimensional space-time character of the subatomic world. Both force and matter are now seen to have their common origin in the dynamic patterns which we call particles. The particle of subatomic world cannot be decomposed into elementary particles or components. In modern physics the universe is thus experienced as a dynamic, inseparable whole in the "quantum-relativistic" models of subatomic physics, which always includes the observer in an essential way. This view is similar to the spiritual traditions of the ancients based on mystical experience—on a direct non-intellectual experience of reality—as revealed by Fritjof Capra in his "*Tao of*

*Physics*" and "*The Turning Point*".

The basic oneness of the universe, from the atomic and subatomic to the microscopic world of planets, stars and galaxies, is one of the most important revelations of Modern Physics. *The Unity of all Things is fundamental*, the constituents of matter, and the basic phenomena involving them are all interconnected, interrelated and interdependent; they cannot be understood as isolated entities, but only as integrated parts of the whole—the *Holistic View*. The observer and the observed are both "participants" in the process of observation. The Universe is perceived as a complicated web of relations between the various parts of a unified whole,—the "wholes" within the "Whole", the "Holons" of Arthur Koestler. Universal interwovenness in atomic physics includes the human observer and his/her consciousness. Natural Science does not simply describe and explain nature; it is part of the interplay between nature and ourselves, object and observer. The principle limitation inherent in the atomic reality is "Heisenberg's Principle of Uncertainty", an important law of quantum theory—the particle's position and its momentum cannot be measured with precision simultaneously. In atomic physics, the scientist cannot play the role of a detached observer, but becomes involved in the world he observes to the extent that he influences the properties of the observed objects. This is the most important feature of the quantum theory (John Wheeler). The observer becomes the "participator". In some strange sense, the universe is a participatory universe. The observer and the observed cannot be separated but can still be distinguished; so also the subject and the object. The world view emerging from atomic physics can be summed up as follows:

1. Objects are not fundamentally separable.
2. Observer—a "participator", not a subject detached from a object.
3. The "human consciousness" as a vital element in the description of the universe.
4. The Universe—an interconnected, inseparable web of physical and mental relations whose parts are only defined through their relations to the whole.
5. The Universe is *intrinsically dynamic*; this view its nature being also at the root of all ancient spiritual traditions. The world is conceived in terms of movement, flux, change, interaction, flow and transformation—constant, momentary dissolution of units in matter. This aspect arises out of the quantum theory as a consequence of

the wave nature of subatomic particles, particles being waves—to be pictured as four-dimensional entities in space-time. Their forms have to be understood dynamically, as forms in space and time. Subatomic particles are dynamic patterns which have a space-aspect, which makes them appear as objects with a certain mass, and a time-aspect which makes them appear as processes/activities involving the equivalent energy. These dynamic patterns, or “energy bundles,” form the stable nuclear, atomic and molecular structures which build up matter and give it solid aspect, thus making us believe that it is made up of some material substance; what we observe are dynamic patterns continually changing into one another a continual dance of energy, a fundamental intrinsic restlessness of matter. The universe is not in a static, but a dynamic equilibrium, from the atomic and subatomic to the cosmic and the macrocosmic (the world of stars and galaxies strewn through all space; all spinning like our own).

6. The Concepts of the “*Expanding*” and the “*Oscillating*” Universe, space being “curved” and not “flat” according to Einstein’s Theory of Relativity. The latter implies alternating expansion and contraction of the universe, periodically, involving a scale of time and space of vast proportions.
7. *Conservation of Energy*—one of the fundamental laws of physics, following the equivalence of mass and energy expressed mathematically by Einstein’s famous equation  $E=mc^2$ , energy, mass, time and space being interrelated. The mass-energy inter-conversion and time-space fusion/continuum lead us to the cosmic energy being conserved in a state of dynamic equilibrium. The unification of time and space or interpenetration is now considered by physicists as fundamental.

The field of “*Human Consciousness and Psyche*” has been the subject of study and exploration for over the last half a century. Dr. Stanislaw Grof himself a psychoanalyst, in his address at the Patkar Hall in Bombay, stated that Freudian Psychoanalysis is on the way out. His own newer transpersonal experiences as a volunteer for *LSD* opened up vistas of consciousness hitherto unsuspected, and experiences unaccounted for, by science. *LSD* was discovered by the Swiss Hoffmann through accidental self-intoxication. It was, incidentally, used formerly for the relief of migraine and to produce uterine contraction in

uterine haemorrhage. The following newer experiences of human beings separated in time and space, in different eras and cultures, compel scientific investigations of the higher levels of consciousness in man the “Extra-Sensory Perceptions (E.S.P.)” and the “Intuitive Perception,” beyond the sensory perceptions of science and the intellectual appreciation:

Experiences of birth-Near-death experiences as in recovery from cardiac arrest, anaesthesia and drowning; and especially in infants and children when the cerebral cortex is not yet myelinated.

A sense of Cosmic Unity and ineffable peace and unalloyed Bliss in mystics and in states of profound meditation.

Retrospective dreams of past lives. Healing of diseases by powerful influences of demons and deities from other countries, cultures and eras.

Instinctual instantaneous understanding of experiences along with their significance (synchronicity of experiences with their causal connecting principle), etc.

These transpersonal experiences afford an access to the Universe not otherwise to be had through mechanical science, and is a fundamental challenge to mechanistic thinking. These are evoked through not only drugs, drinks and dreams, but through music, and bodily motions aroused through evocative inputs. *Parapsychology* has been investigating this field of experience since Prof. Rhine of Duke University, but has received the treatment of a “real Cinderella” of modern Psychology, just as Homoeopathy has received at the hands of Modern Medicine. It is being revived once again. A new field of *Thanatology* has opened up with scientific validation of near-death experiences, as recorded in the “*Egyptian Book of the Dead*” and the “*Tibetan Book of the Dead*”. Some of the patients have developed new insights and attitudes towards the phenomenon of death.

The following recent developments reconcile and integrate the two view-points of man as a biological machine as well as a field of consciousness:

1. Holonomic Theory of the Universe-David Bohme
2. Holographic Model of the Brain-Karl Pribram. The Universe is a vibratory phenomenon, an integrated whole where the parts and the whole are in mutual relationship and in dynamic equilibrium.

The relevance of the Modern/New Physics to Homoeopathic Philosophy and Practice will be discussed in the next issue of the Journal.

### PART III

The present study relates to the sound philosophical and scientific basis, structure and foundations of Homoeopathy as evolved by Hahnemann, and subsequently elaborated in a strictly logical manner by Stuart Close, Herbert Roberts, Carol Dunham and Cyril Boger. It antedates Modern Physics, especially particle or Subatomic physics; the latter validates Homoeopathy.

Homoeopathy is an Art based on Science founded on Philosophy—a set of Principles founded on *natural laws* that are fundamental, eternal and universally applicable in all situations. These form a secure and stable basis of medical therapeutics—in acute cases, in chronic work or amidst panic of epidemics of unknown origin. *Law* is defined as a “constant relationship between two or more variables” i.e. phenomena in life. “*Life* is the visible, substantial, intelligent, individual, co-ordinating power and cause directing and controlling the forces involved in the production and any organism possessing individuality” (Close). The philosophy of Homoeopathy rests upon the following general interpretations of the System of Nature which Science Universally recognizes as fundamental—as given out by Close:

1. The laws and ways of Nature are uniform and harmonious.
2. Effects follow causes in unbroken succession.
3. To every action there is an equal and opposite reaction; the law of Mutual Action, variously termed as the Law of Equivalence, the Law of Balance of Equilibrium, the Law of Polarity, the Law of Compensation and Newton's third Law of Motion. From this was derived the *Law of Similars* in Homoeopathy, the product Deductive or Formal Logic, as evolved by Hahnemann in his “*Organon of Medicine*” (Aphorisms 19-25).
4. Action and reaction are ceaseless, equivalent and reciprocal.
5. Motion is ceaseless and transformation is continuous.
6. Matter is indestructible and infinitely divisible.
7. Force is persistent and indestructible. Constancy of Matter and Force.
8. The quantity of action necessary to effect any change in nature is the least possible. The decisive amount is always a minimum, an infinitesimal.

These laws of nature are the forms of expression of the constant course of natural phenomena from given causes and conditions. Laws do not cause the “existence” of events or phenomena; they explain, not the “existence”, but the “connection” of Phenomena. “*Life*”, “*Existence*”, “*Phenomena*”, per se, can only be perceived by “intuitive perception”, not by tardy processes of ratiocinative thought, but by direct cognition or immediate consciousness of the fundamental laws. These are, in general, deductions of experience and observations with regard to the necessary course of events or phenomena from given elements, the ultimate course of which lies beyond physical science in the domain of metaphysics. Of these laws, those of immediate importance in the consideration of the phenomena of health and disease are the laws of reciprocal action of bodies and force and the law of causation. The law of inertia affirms that a body remain in the same state as it is found, unless an external cause/force is so applied as to alter the state into another. These two laws of causation and inertia are applied in Medicine and especially in therapeutics. All functioning of the living organism depends upon a constant reciprocal action between the different constituents of the body within itself, and of the organism as a whole with its environment—the external world and its constituents.

The organism is thereby maintained in a state of approximate equilibrium of motion or rest. Bodies and organisms exist in reciprocal relations with one another in the external world. Modern Nuclear Physics affirms the Universe as being intrinsically dynamic, existing in a state of dynamic equilibrium.

Physical Science, including Modern Nuclear and Atomic-Subatomic Physics cannot account for “*Life*” and “*Mind or Intelligence*” which is incorporeal, immaterial and non-substantial, having their existence in the one ineffable, omnipotent, and omnipresent Supreme Reality. This brings us to the Concept of the “*Universal Vital Force or Spiritual Dynamis*” that pervades the entire Cosmos including Man, intuitively conceived of by Hahnemann in Aphorisms 9-17. This *Dynamic or Vital Concept of Life and Universe, as well as of Man* has been elaborated in depth by Close and Roberts decades ahead of Modern Physics. This has been related to the different states of Man in Health, Disease, and to the therapeutic field of Drug-Action, Drug-Reaction/Response, Recovery/Palliation, Suppression, Homoeopathic Posology and Remedy Relationship/Concordances. As this Life-Prin-



principle or Energy is ubiquitous in the Universe and in Man, it functions at all levels of the totality of both—the 3 planes of its operations, viz. the physical, the intellectual/emotional or the psychic and the spiritual. This leads us on to the *Holistic or Unitary View of Life, Universe and Man*. With its concomitant of the Inter-relationships of all existing things, wherein the part is related to the whole and the whole to the part in a united web. Modern Physics of Einstein, Planck, Rutherford and Capra validates these concepts of Homoeopathic Philosophy:

1. The nature of Particle World being dynamic and ever-changing.
2. The universe is a dynamic web of inseparable energy patterns.
3. Matter—a basic unity, a dynamic inseparable whole in the quantum relativistic models of subatomic physics which includes the observer in a unique way.
4. The Unity of All Things- objects not fundamentally separable; observer- a participator; the universe,-an interconnected inseparable whole or web of physical and mental relations whose parts are only defined through their connections to the whole.
5. Human consciousness—vital element in the description of the Universe.

Hahnemann introduced to the world of Medicine the rational concept of life itself. Life is a Unity from its inception, the trinity of body, mind and soul or spirit-being the three levels of expression or manifestation of the "One Life", interacting and interdependent. Man is an "*Organism*"; not a "*Mechanism*", not a machine; the Vital Force within the corporeal frame is a dynamic, automatic, self-acting, self-propelling, centrifugal, immaterial life-energy/principle. This maintains *Harmony/Balance* within and without the organism in relation to the environment—a dynamic state of stable equilibrium in Health. Disease is "deranged dynamis", a dynamic state of unstable equilibrium manifested to an observer through peripheral signs and symptoms. Its operation in Health is synchronous, symmetrical and rhythmic; in Disease, it is the reverse. Restoration to Health through the means of Drugs selected on the basis of the Law of Similars is also dynamic. The nature of the drugs themselves is dynamic, as all things in the universe. Without this Vital Force, there can be no life, no development. There is no static condition in Nature; without it, there ensues a state of decay and death.

Where there is vital force, there is action, *Motion*, which is one interpretation of the vital force, one manifestation. Motion implies *Direction* towards *Balance, Harmony, Equilibrium*. These are the three aspects of the vital force in the field of observation: Motion, Direction, Balance, e.g. the movements of the planets in the solar system, where there is no choice involved. Human beings have the choice to move in harmony with or against the natural operations, thereby vitiating the vital operations, hindering normal growth and development.

Homoeopathy deals with and in the realm of pure dynamics, the field of disordered vital energy, giving rise to functional and structural alterations, and therefore governed by the *Laws of Motion* in the *Field of Dynamics*—the laws of Mutual Action. The mathematical law of quantity extends to all nature, and applies to all vital energy in whatever form, which maintains a delicate balance,-in the human economy. This law was enunciated in item 3, page 12. Mathematics in its highest form is the perception of balance in its highest degree—the state of perfect relationship, the result of perfect computation. In homoeopathy, balance is a factor to be reckoned with; so the laws that apply to mathematics are equally applicable. Matter is infinitely divisible; the greater the divisibility of elements of matter, the more they exhibit the possibility of permeability by the vital energy. The greater the mass (quantity) of elements of matter, the more inert they become. *The Fundamental Laws of Science* are applicable to Homoeopathy, as in all natural realms, in some degree and relationship. These are as follows (Roberts):

1. The Law of Similars—in the realm of Cure/Palliation.
2. The Law of Cure (Hering's)-in centrifugal direction (both the origin and cure of the disease process). The disease expression has a centripetal direction from the periphery to the centre from the outermost to the innermost. The growth and development of an organism follows these same direction.
3. The Law of Mutual Action-Action and Reaction are equal and opposite.
4. The Law of Least Action (Maupertius, the French mathematician) in the field of Homoeopathic Posology, as
  - a) The Law of Quantity and Dose: The quantity of action necessary to effect any change in nature is the least possible, the decisive

amount is always a minimum, an infinitesimal.

- b) The Quantity of the Drug required is in inverse ratio to the similarity. The mass is in inverse proportion to the potency. The greater the similarity of the drug to the patient, the higher the susceptibility, the higher the potency and smaller the mass or quantity.
  - c) The Law of Quality—a natural corollary to the Law of Quantity. This quality of the action of a homoeopathic drug is determined by its quantity, in inverse ratio. There is a reciprocal relationship between the two. Homoeopathy deals with drug energy and not with drug substance—the plane of Dynamics.
4. The Law of Use—governing the homoeopathic remedy: The dose and quantity that will thoroughly permeate the organism and make its essential impression upon the vital force is that which will affect the functional sphere of the individual.
  - 5) The Law of Biological Development—Function creates and develops the organ. Functional symptoms are produced by the vital force in exact proportion to the profundity of the disturbance. Following this law, homoeopathy postulates
  - 6) The Law of Disease Development—Functional symptoms precede structural alterations, organic pathological changes. Altered physiology precedes altered anatomy.
  - 7) The Law of Provings—cycles of action are a fundamental part of natural manifestations. So also we find that the homoeopathic remedies have cycles of development and recession. The laws governing the various states or types of substances follow closely the law of mutual action, the law of least action and the laws of quantity and quality,—as follows:
    - a) Any drug, which in its natural or crude state affects the vital energy but little, will develop a proving *only* in a high potency.
    - b) Any drug, which in its natural or crude state disturbs the vital energy to *functional* manifestations only, *may* be proved in a crude form.
    - c) Any drug, which in its natural state disturbs the vital energy to *destructive* manifestations, should be proved *only* in a potentized form, e.g. snake and spider venoms.

The deeper levels of the vital energy in the sphere of the "Mind" or the "Psyche" of the drug could only be elicited in the potency of 30 and above on the centesimal scale.

- 8) The Law of Repetition of the Dose for Provings—Never repeat the dose of the drug while the symptoms are manifested from the dose already taken, in a proving. Repeat only when the symptoms from the previous dose are already exhausted.
- 9) The Law of Repetition of the Dose for Cure—Never repeat the remedy so long as it continues to act. Repeat the dose when the action from the previous dose is exhausted.

Homoeopathy was founded and developed into a scientific systems by Hahnemann under the principles of Inductive Method of Science of Francis Bacon and John Stuart Mills. Its practice is governed by the Principle of Symptom-Similarity—the principle in Medicine of the universal principle of Mutual Action formulated by Newton in his Third Law of Motion. Homoeopathy, as a science, rests fundamentally on 4 pillars; Similarity, Contrariety, Proportionality and Infinitesimality, reducible to the universal principle of Homoeosis or Universal Assimilation (Fincke). Homoeopathy is not, strictly speaking, a system of medicine, using the term "Medicine" in its broad general sense. As "general medicine" includes general therapeutics, besides a number of distinct sciences like Anatomy, Physiology, Pathology, etc. Homoeopathy, in this context, is a department of General Medicine in the field of "specialized Drug Therapeutics". The Law of Potentisation and the Infinitesimal Dose is one of the corollaries of the Law of Similars and a fundamental principle of Homoeopathy. Homoeopathy has borrowed from the various disciplines of knowledge in Science and General Philosophy. Electrical science, has paved the way for a clearer understanding of the "modus operandi" of the life force. Physics and Biology are in harmony with homoeopathy; their basic principles are identical. The explanation of the former serve equally well for homoeopathy in its physical and biological aspects. Ionization is an adequate physical explanation of what occurs in the preparation by trituration, solution and dilution according to the scale of homoeopathic high potencies. Mathematics with its "Theory of Infinitesimals" and its "Infinitesimal Differential and Integral Calculus" has paved the way and laid the foundation upon Homoeopathic Science. Planetary movements have a definite relationship to life, as evidenced by

the lunar influence on human health in lunacy, epilepsy and asthma.

The nature of action of our remedies could be apprehended from the study of the sources in the three realms of Nature—mineral, vegetable and animal. Sir J.C. Bose has established the close connection between the physiological and the physical in inorganic and organic, evolutionary march under Law and the sensitive nature of all things—the boundary lines between the realms of the Living (Animate) and the Non-Living (Inanimate) vanishing and points of contact emerging. All life is sentient, is “embodies consciousness”. The inter-relatedness of all existing things along with their interactions is attested to by Bose and Modern Physics. The whole *Concept of Remedy Relationship* of Boenninghausen and and Gibson Miller in homoeopathy stands vindicated today; so also the *Comparative or Differential Materia Medica*. Since the Source of all life is one, and all things existing in the universe are but fragments of the One life interrelated and inter-connected, every thoughtful homoeopathic physician will have less difficulty in subscribing to the ancient Upanishadic saying:

“They who see but One, in all the changing manifoldness of the Universe, unto them belongs Eternal Truth—unto none else, unto none else.”

Though the nature of the “*spiritual dynamis*” of drug action is still a “*terra incognita*” to modern science, and is relegated by Close and Roberts to the realm of occult metaphysics, its action, nevertheless, is perceivable in Provings, Clinical Cures at the bed-side, as well as in several laboratory experiments—wherein the effects of potentized drugs have been effectively demonstrated. For example:

1. The effect of homoeopathic medicines in potencies on yeast cultures Sul; Arn; Cham; Euphrasia and Puls. on the rate of growth of *Schizosaccharomyces pombe*.
2. *Agaricus muscarius* in potency enhanced the cataleptic state, when administered orally to rats subjected to restraint to induce catalepsy. The higher the potency the longer the duration of peak action and the longer did it take to reach the peak effect. The degree of suppression of the action of Atropine sulphate in diminishing catalepsy by *Agaricus* also increased with the increase in the potency of *Agaricus*. The work provides a scientific proof for the action of potentized homoeopathic drugs and for the principle of the minimum dose.
3. The microdose effects of drugs and chemicals on the enzymes: urease, diastase and trypsin. Silver nitrate inhibited urease activity with dilutions up to and including  $10^{-6}$ , and Mercuric chloride in  $10^{-6}$  dilution. Mercuric chloride and Sulphur in increasing potencies produced an initial inhibition followed by activation at  $10^{-6}$  but inhibited diastase activity at  $10^{-15}$ ; this provided clear confirmation of Arndt-Schultz's Law. Gold chloride inhibited diastase activity at  $10^{-6}$ . The effect of Iodine on starch was demonstrated at  $10^{-8}$  dilution. The effect of Iris on trypsin—maximum activation at  $10^{-10}$ , followed by progressive inhibition to the point of zero in the dilutions of  $10^{-90}$ - $10^{-100}$ . Similarly with Phosphoric acid and Arsenic. The methods used were electrometric and calorimetry, the latter being the most sensitive method for assessing microdose effects (dilution up to  $10^{-100}$ ).
4. A highly significant increase in the macrophage activity of mouse peritoneal macrophages, compared to a control, the animals being treated with oral Silica in dilutions equivalent to 6c and 10c. The index or measurement of macrophage activity was Platelet Activating Factor (PAF) synthesis.
5. Histamine in potency inhibited the degranulation of basophils of patients sensitive to D. pteronyssinus in a study based on the Human Basophil Degranulation Test (HEDT). In this experimental system there are peaks of activity at 6c and 14c.
6. Acetyl salicylic acid 5c taken by healthy volunteers causes a statistically significant promotion of platelet aggregation, compared to a placebo.
7. Pre-treatment with *Mercurius corrosivus* in potency protects the kidneys of mice from the toxic effects of subsequent treatment with the same substance. This effect has circadian and circannual rhythms.
8. An in-vitro study showed that Copper sulphate in potency protected lentil seedlings from the subsequent effects of the same substance.

Methods of confirmation of the correct choice of the remedy, apart from the clinical cures supported by laboratory and other parameters, are:

Lipoid Flocculation Test, Pfeiffer's Copper Chloride Crystallization Test, The Pulse Test and Body's Emanometer.

Above all, The Science of Radiesthesia and Psionic

Medicine, the Electromagnetic Theory, the Oligodynamic Action of Metals such as Silver and Mercury, Magnetism, Mesmerism and Hypnotism, as well as "Metaphysical Healing" or "Christian Science" are all different aspects or manifestation of the One Vital Force or Energy in the realms of the "Imponderables". Homoeopathy is thus a natural ally to all these. Hahnemann has eluded to these systems in the Art of Healing in the later aphorisms of his "Organon". The Vital Force is the "Law of Nature," expressing its power in different ways, such as gravity, attraction-repulsion, centripetal-centrifugal forces, electricity, magnetism, chemical affinity, dynamis or spiritual power/force—an expression of, and all combined under, one Head and Source of Power—GOD (Roberts). The Capillary Dynamic Action Method has been used by Kaelin, Miss Agnes Fyfe and Kolisko to demonstrate the action of the vital energy in plants and at the bedside in cancer patients. Kaelin's Test has been used in the early diagnosis of cancer and precancerous states, as well as for prognosis and evaluation of treatment of cancer patients with the *Mistletoe or Viscum album* ("Iscaador Therapy of Cancer"). The influence of the planets, Moon, Mercury and Venus, on the growth and the development of the mistletoe at different seasons of the year was effectively demonstrated by Miss Agnes Fyfe. Potentization or Dynamization releases the dynamic energy latent in all matter, just as radioactive substances do spontaneously such as Radium, Uranium and Plutonium. The splitting of the Atom released the Atomic Power/Energy. Modern Physics has released the Nuclear Energy which could be harnessed for beneficent or maleficent uses. "The Magic of the Minimum Dose" stands vindicated today in the light of the above experiments and experiences. "The small dose" was derided by a leading surgeon in Bombay (otherwise an extremely good and highly respected "man") as "sago-grains". Inert substances become innocuous under dynamization and evolve refined subtle expressions. Substances in minute dilutions prove lethal to bacteria, defying Avogadro's Law in Chemistry. The discovery of Potentization has raised Homoeopathy to a level with other natural sciences, through creating a method analogous to the infinitesimal calculus of mathematics, upon which is based the atomic theory of chemistry. It illustrates and harmonizes with the "theory of the interatomic ether of space"; the "theory of the radiant state of matter"; the "theory of the electrical potential in physics", and with the chemo-cellular theory of physiology and pathologic anatomy. Modern Bacteriology

explains the action of the pathogenic micro-organisms as being due to the infinitesimal quantities of their secreted poisons; homoeopathy agrees with it. Homoeopathy antedated the bacteriological and psychosomatic era in modern medicine. The Mind-Body Dichotomy of Newton and Desartes is no more tenable in the light of the inter-relatedness and interactions of the mind and body, as revealed in the dynamic and the unitary view of the universe in Particle Physics of Rutherford and Capra. Homoeopathy was nearly a century ahead of this.

*Susceptibility* lies at the root of all life and its expressions at all levels—physical, mental, spiritual or dynamic, and from the atomic to the cosmic. It is in some way subtly connected with the Vital Force. The similar remedy, or the similar disease, satisfies susceptibility and confers or establishes immunity, it normalizes altered susceptibility—if exaggerated, suppressed or morbid/pathological. This is the *modus operandi* of drug-action in potency in homoeopathy, the "raison d'être" of which still remains unknown today at the present level of our understanding.

Physics and Homoeopathy are both based on the *Science of Logic*, which includes the concepts of Causation, Analysis, Synthesis, Concomitance and Induction-Deduction. The last one constitutes the two modes of one general process of Inference. All analysis is deductive; all synthesis is inductive. A close study of Close and Roberts (a scientist and a vitalist) will prove rewarding to the serious student of Homoeopathy, which demands in practice lofty morals and ethics, pure motivation and highest qualities of Mind and Consciousness in the homoeopathic physician. In homoeopathy, we discover the fusion of science and philosophy. Homoeopathy is a multidisciplinary approach, deriving its philosophy and science from the general pool of General Philosophy and Sciences. Its solid foundation on hard facts united by a cement of a general principle and its superstructure are held together by a "framework of logic." "*The Concept of Totality or Portrait*" in Homoeopathy is confirmed by modern physics. *The "Mind" as the "Key" to the Man* (Kent) plays a vital role in the determination of the Totality.

Man is an organism, not a mechanism. The medical profession needs to be reminded that there is something more vital and important for them and for suffering humanity than matter and materialism; than germs and germicides; than sera and vaccines; than mechanics/processes and products. That "Something" is a fuller knowledge and realization of the spiritual nature of life or mind in an organism, a principle

or power manifesting itself in and through the physical organism of which it is the architect and builder as well as the tenant. This has been projected in Modern physics as "*The New Dynamism*". To Hahnemann belongs the honour to connect biology and psychology with physics in a practical system of medicinal therapeutics, and to give an impulse to studies in biodynamics which has gained momentum continuously ever since. Man as a biological organism as well as

a field of consciousness was held by Hahnemann much earlier than modern physics. In this respect homoeopathy differs radically from and is infinitely superior to all other systems of therapeutics. In its out-working it is essentially in its inner working principle of the Law of Reciprocal Action the "*Law of Love or Compassion*," for it is always beneficial, always creative, always harmonizing (Close).

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"It is our duty to remember at all times and anew that medicine is not only a science, but also the art of letting our own individuality interact with the individuality of the patient".

*Albert Schweitzer*

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