

3. OUTLINE OF THE CONTENT.

The Universe by definition includes everything. Man has looked at it from many different points of view and the Universe presents one aspect to the philosophers; one to the scientists and still another to the artists.

Many scholars of opinion that the Universe has no end but an infinite number of ending and beginings. This means that there is no degradation and destruction. It amounts to the meaningless of creation and evolution of the Universe and there is no need of defining and studying the Cosmology or Cosmogony which deals with the theories relating origin and evolution of the Universe.

Even with this logical arguement regarding the idea of the Cosmos in both the schools of philosophical ideas- the Occident and Indian step down to a lower stratum and become eager to find out the actual picture of the Universe as evolved from time to time.

Our present picture of the Universe necessarily depends on our present knowledge and there is no reason to believe that this knowledge has been reached perfection at the time of writing this thesis. From history it is evident that man's view of the Universe has changed steadily with time and will continue to do so in future.

Creation may be regarded as an art. Art is an attempt for expression of a certain attitude towards reality. This is the recognition of something which is greater than man; real beauty of art is the beauty of value and wonder and therefore art is akin to religion; both are expressions of man's sense of spiritual significance of the Universe, an attempt to express things which are unseen and

and eternal. This unseen and eternal is the SUPREME ENERGY; and according to the philosophers, scientists, metaphysicians; is the Creator of the Universe. Various names have been given to that energy which is usually termed as GOD.

Evolution embraces the idea about the gradual development of the Universe and the Organic one of the Universe from the very day of its inception and upto the writting of this thesis. From the scientific point of view the theory of evolution negates the theory of "outright rejection" of the world in all its complexities at a single moment of time by some superhuman power. The present state of the world with all its infinite varieties of inorganic and organic form have been slowly evolved through a period of time. In fine; this process has been on the whole from lower to higher, from simple to complex; from undifferentiated to differentiated.

It will not be impertinent to consider that the act of creation as well as evolution are centered round the basic entitities; viz. MATTER and ENERGY. Matter is generally a substances out of which physical things are made and energy is the ability to do work. Before Einstein energy and matter were considered as the distinct entities and Einstein's law now shows that mass and energy are equivalent Energy is obtained from the annihilation of mass accounts for nuclear energy and power of stars.

CHAPTER-I.

BASIC NOTIONS OF CREATION AND EVOLUTION OF THE UNIVESE IN WESTERN SCIENTIFIC VIEW.

In the first period of Greek philosophy in the sixth century B.C. in a culture where 'Science' and 'Philosophy' were not separated. The philosophers were essentially scientists. The sages

of the Milesion school of Ionia tried to discover the essential nature or real constitution of things which they called 'PHYSIS'. The term 'PHYSICS' is derived from this Greek word. They saw all forms of existence as the manifestation of the 'PHYSIS'. This idea may be regarded endowed with life and spirituality.

Thales, a great philosopher of this era, found cause of everything is 'WATER'. This idea may be regarded as the attempt to find out the mysterious substance of the 'COSMOS'.

To expose the mystical ideas of human being a kind of mathematical logic which is the halfway between science and philosophy; had been discovered.

Thales went to Egypt and introduced the study of geometry from there to Greece. Unlike other contemporary scholars he was not only interested to know its practical application but also an abstract (deductive science) based on general propositions.

ANAXIMENDER (610-545 B.C.) who followed Thales was the first Greek to make a map of known world. He was interested in cosmology more than that, the cosmology and according to him the earth was finite flattened cylindrical and floating within the celestial circles and with them evolved about the earth.

He introduced the idea of evolution in science. According to him without motion there can be no coming into being or passing away.

THE PYTHAGOREAN SCHOOL.

Pythagorus (born in 530B.C.) and his followers gave up the idea of one single element and held matter to be composed of earth,

water , air and fire which were supposed to be divine. Pythagoreans thought the world consisted primarily of numbers.

SPCRATES, PLATO AND ARISTOTLE'S IDEAS ABOUT COSMOLOGY

After Pythagorus; Plato; follower of Socrates and Aristotle; follower of Plato were distinguished as the philosophers and scientists of the Athen's school.

Socrates turned philosophy from a study of the past and present to a consideration of the future-the end of which the world was created.

According to Plato ' GOD ' is good and the sphere is the most perfect form; therefore, the Universe must be spherical. For the making of time there are heavenly bodies moving in cycles to which ' GOD ' has given circular motion. He regards the stars as floating free in space; moved by their own souls. He considered the Sun moves round the Earth.

Among Aristotle's many writings, the physical discourse deals with the philosophy of nature, the existence of matter and form , motion, time and space. There is ever moving sphere of the outer heaven and the unmoved mover who must exist to keep it in motion. He considered 'aether' as the terrestrial elements which moves in a circle and makes the heavenly bodies perfect and incorruptible. He defined the life as sustained by its vital force, it grows itself and died spontaneously.

The Scientific knowledge of antiquity was systematised and organised by Aristotle, who created the scheme which is the Western view for the Universe.

THE ROMAN AGE

In the later age civilized Greek empire had been destroyed and the Holy Roman empire become prominent, but the Romans were not the right predecessors of the philosophical and scientific ideas of Greek.

THE MEDIEVABLE PERIOD.

During the mediavel period, extending between 12th. and 13th. century a vital urge to the development of clture was derived from Judio-Christian concepts. The Judio-Christian tradition considered GOD is the infinite, self-existence Creator of everything else that exists. Here, the creation means far more than emerging new forms from an already given(as a builder makes a house or a sculptor a statue) it means creation out of nothing -CREATIO EX NIHILO. The whole COSMOS is usually imagined as permeated and bound together by living spirit which in turn is pervaded and controlled by the GODHEAD.

In the ancient period scientific ideas along with close associates-the philosophy-were nourished in the cradles of Greek civilization. In the rarly mediavel age these were influenced by the doctrines as established by Christian Church. Thus philosophical and scientific ideas could not be free from the influence of Platonic ideas and doctrines of the Christian Church.

In the 13th. Century Thomas Acquino's scheme-scholasticism-derived from Aristotle's idea explained natural phenomena in a rational manner. Acquino accepted the Potlemyc system of astronomy,

but he regarded it as a working hypothesis. Acquinos following Aristotle welded the whole of natural knowledge with theology into a rigid structure.

Roger Bacon in 13th. century first criticised the schollasticism of Acquino; but his criticism was not fruitfull. Philosophical attacks on scholasticism were made by Duns Scotus(1265-1308) which opposed the doctrines on the arbitrary will of God, and took 'free will' as the primary attribute of man. He attempted to free philosophy from the bondage of theology.

THE RENAISSANCE (15th.-16th. century)

After the 13th. century there was a gap in the intellectual development. Judio-Christian conception-CREATIO EX NIHILO- led to two important corollaries; viz :-

(1) As GOD creates everything at his suit will, creator cannot be the creature.

(2) Notion of creation-ex Nihilo- expresses in prayer and a sense of dependence upon GOD; states that we have a part to play in the Universe; not by some natural right but by the grace of GOD.

The scientists and philosophers of this time freed themselves from the influence of these two and a sense of 'FREE INQUIRY' changed totally all the hypothesis which existed prior to the period of 'Renaissance' in Europe.

Due to the revolutionary changes in ideas in 15th. century, the most fundamental ideas in the study of the Universe become those of times, distance, mass and temperature and they were measured

quantitatively. They became the dry bones of studying in the Universe. With their aid the Universe appears on all of her coherence and beauty, dignified and austre.

The failure of the scholastic philosophy in the progress of man's knowledge and power over nature and the defects of Aristotle's final cause in science led Francis Bacon to consider new methods of experiments and then by collecting and tabulating the results, by rules, the connection between the phenomena would become manifest. General laws describing relations emerge out automatically.

But, this method was subjected to the following criticism:-

- (a) It does not explain the role of intuition.
- (b) It does not take into account the dynamic relationship between theory and experiment.
- (c) It is based on wrong concept of inductivism.

Bacon seems to have had little or no influence on those who were carrying on experimental science. But he did something to improve the established thought about the scientific problem in his days. He was the first to consider the philosophy of deductive science. In his time the world of philosophic thought was becoming developed and was ripe for change.

THE NEWTONIAN EPOCH.

Before discussing the Newtonian epoch the background of Issac Newton is worthy to be described as follows :-

1. The scholastic structure of knowledge which was adopted for training had long been adequate.

2. Gilbert and Harvey had shown how experiment could be used empirically.
3. Galileo had proved that mathematical simplicity by means of which celestial phenomena are explained, can also be applied in the case of terrestrial bodies, as well.
4. Motion of a body, had been described in terms of the scholastic substance and cause in a very unscientific manner. The view of motion was replaced by time, space, matter and force. New concepts now first clearly defined and mathematics was used to discover how things move and to measure the actual velocity and acceleration of a moving body.
5. The 17th. century-thought was influenced by an idea of existence 'Aether' in interplanetary substance. Kepler considered it to explain how the Sun kept planets moving around and Descartes considered it as the primary matter which formed the vortices of his 'celestial machine'. Gilbert used it to explain the magnetic attraction and Harvey as a means of conveying heat from the sun to the heart and blood of living body.
6. At that time men of science and almost all philosophers looked on the world from Christian stand point of view. Descartes postulated a cosmic mechanism by God.

These were the scientific knowledge and philosophical thoughts and ideas in which Newton began to work.

NEWTON

In Newtonian mechanics all physical events are reduced to

the motion of material points in space is caused by their mutual attraction or in other words by the force of gravity.

Newton's equations of motion are the basis of classical mechanics. They were considered to be fixed laws according to which the whole material points move and were thus thought to account for all changes observed in the physical world. In the Newtonian view God has created in the begining the material particles and the fundamental laws of motion. In this way the whole Universe was set in motion and it has continued to run for ever since, like a machine governed by immutable laws.

The mechanistic view of the nature is thus closely related to a rigorous deterministic view of the nature is thus closely related to a rigorous determinism. The great cosmos machine was seen as being completely causal and determinate. All that have a definite cause and gave rise to a definite effect. The future of any part of the system could be predicted with absolute certainty if its state at any time was known in details.

The philosophical basis of this regorous determinism was the fundamental division between the 'I' and the world. As a result of this division, it was believed that the world could be described objectively, and as such an objective description of nature became the idea of science.

In early 19th. century all scientists believed that the UNIVERSE was a huge mechanical system running according to the laws of motion. Newton's mechanics was considered to be the ultimate theory

of natural phenomena; but it was less than a hundred years that new reality was discovered and this made the limitations of the Newtonian ideas. At the same time showed that none of its feature is absolute one.

This realization did not come abruptly but was started by gradual development of scientific thoughts and thus prepared the way for the scientific revolutions of our time. Due to this revolutionary changes we are now in an Universe of different than the Newton's one.

MODERN AGE

With the formulation of (a) the theory of relativity by A. Einstein (b) discovery of the subatomic particles which are governed by quantum mechanics. Quantum mechanics in its turn depends on the dual nature of a subatomic particles and Heisenberg's uncertainty principle. In the earlier part of the 20th. century, the methodology and ideas have undergone a profound change in solving the fundamental questions regarding truth.

Quantum mechanics tells us that our knowledge of what governs events on the subatomic level is not merely what assumed it would be. It tells us that we cannot predict subatomic phenomena with certitude. We can only predict their possibilities of existence.

Philosophically, the implications of quantum mechanics are 'psychedelic'. Not only we influence our reality, but in some degree we actually create it. Because it is the nature of things that we know either the momentum of particle or its position; but not the

both. We must choose which of these two properties we want to determine. Metaphysically, this is very close to saying that we create certain properties because we choose to measure those properties.

Theory of relativity has proved that all the scientific knowledge based on the sense-perception is only relative. The important idea of the theory of relativity - consciousness of observer and the act of observation should be with reference to the same frame of reference - invalidated objective attitude of nature.

The general theory of relativity describes the force of gravity and the large scale structure of the Universe, that is the structure on scales from only a few miles to as large as a million million miles; the size of the observable Universe.

Quantum mechanics on the otherhand deals with the phenomena on extremely small scales, such as a millionth of a millionth of an inch.

If we consider that the Universe is not arbitrary one, we ultimately have to combine the parallel theories into a complex unified theory which will describe anything in the Universe. But we are not aware of a complete theory rather we are progressing over close toward the ultimate laws that govern our Universe.

SUPERFORCE

Fresh discoveries have opened the way to a radical new concept of a unified Universe born amid violence, in which all physical structures are fashioned out of the primal fire under the action of the SUPERFORCE.

Origin of the idea of SUPERFORCE has the reference to the most relevant results of new research in atomic and subatomic physics in last two decades of the 20th. century. The notion of a basic "quantum interconnectedness" received a renewed attention during this period in which physicists came to realize that the Universe, in actual sense, may be interconnected in much ~~subtler~~ ways than had thought before. The new kind of interconnectedness that has recently emerged out enforces the similarities between the views of physicists and mystics. It also raises the underhand plot of relating subatomic physics to Jungian psychology and perhaps even to parapsychology and cast a new light on the fundamental role of probability in quantum physics.

The existence of non-local connections which are instantaneous and cannot be predicted in a precise mathematical way, and the resulting fundamental role of probability is something that Einstein could never accept. This was the subject of his historic debate with Bohr in 1920 in which Einstein expressed his opposition to Bohr's interpretation of quantum theory in the metaphore "God does not play dice".

In his attempt to show that Bohr's interpretation of quantum theory was inconsistent, Einstein devised a thought experiment that has become known as the Einstein-podolosky-Rosen(EPR) experiment in which they mathematically postulated that if the strict cause and effect relation in the world of subatomic particles really does not exist as the uncertainty principle asserts. Than a

strange phenomena will emerge. What is that strange phenomena?

This is that two kinds of subatomic particles must somehow be simultaneously connected even if they remain separated at an enormously long distance. Though this is an impossibility, but the EPR indicates that information can be communicated at SUPERLUMINAL (faster than light) speeds which is contrary to the accepted ideas of physicists. But the strange phenomenon has been verified by David Bohm in London in 1972 and Friedman in U.S.A. and a team of Alan Aspect in Paris in 1982.

In 1964, J.S. Bell, a physicist at the European organization of Nuclear Research(CERN) gave mathematical formulation to the EPR effect.

How could instantaneous communication between two objects be possible? Henry Stapp, an American physicist writes 'that information transferred superluminally is a priori; not unreasonable'. In 1975 it is shown that not only superluminal connection exist between two space-like separated events, but also that such connections can be used in a controllable way to communicate messages.

SUPER DETERMINISM

David Bohm postulated in 1974 a new idea emerging out of Bell's Theorem-the Principle of Non local causes. Henry stapp says that the theorem of Bell proves, in effect, the profound truth that the world is either fundamentally lawless or fundamentally inseparable. The Principle of local causes will mean that when a man meets

with an accident in New York causes will mean that when a man meets with an accident in New Delhi. The new Principle of non-local causes implies that whatever happens in one part of the Universe on a single entity has its effect which can be detected in any other part of the Universe on a similar entity. Bell's Theorem has in fact, laid the foundation for what Malic kapec call 'nondeterministic interpretation of contemporary microphysics'.

Science now looks forward to a higher kind of determinism or 'super-Determinism' which rules, guides and determines the Universe at a far deeper level. Ordinary determinism states that once the initial situation of a system is established, the future of the system is also established due to inexorable laws of cause and effect and is the basis of the great Mechanical view of the Universe. According to superdeterminism not even the initial situation of the Universe could be changed. Not only is it impossible for things to be other than what they are, it is even impossible that the initial situation of the Universe could have been other than what we are doing at any given moment; it is the only thing that ever was possible for us to be doing at that moment.

THE IMPLICATE ORDER : THE UNBROKEN WHOLENESS.

Following a succesful verification of Bell's Theorem, David Bohm offers the idea of the Universe of 'unbroken wholeness' of an 'implicate order'. According to this an elementary particles is not an independently existing analysable entity. It is an essence a set of relationships that reach outward to other things. According

to Bohm parts are seen to be an immediate connections in which their dynamic relationships depend on an irreducible way of the whole system. Again this in its turn depends to another broader system extended ultimately into the entire Universe. Thus one is led to a new notion of unbroken wholeness. This unbroken wholeness denied the classical idea of unanalyzability of the world into separately and independently existing parts. Next question arises what is this 'implicate order' made of? It is made of the same 'Implicate order' of that which 'Is'. And that which 'Is' cannot be termed in space and time. Description is totally incompatible with what we want to say.

BASIC NOTIONS OF CREATION AND EVOLUTION IN INDIAN
PHILOSOPHICAL LITERATURE.

With the evolution of rationality in man of the ancient India; natural question arise in the mind of the people "Eong Sr̥iṣṭī Kūtaābabhūba"(from where the creation starts). This led not only the ancient Indians, but also other peoples of the world led into the realm of mysticism; a source of perennial philosophy. Being pregnated by mystic ideas ancient peoples tried to study the creation and evolution of the Universe. Methodology of this study varied from people to people of different regions of the world viz. Indian ideas vary from occidental idea.

Ancient Indian philosophical literature e.g. the Vedas, Upa-niṣds, Sāṃkhya, Vedānta philosophical schools of thought, the Pūrā-nas were particularly inspired by the subject; the Buddha and Jaina philosophical literature as well. The singularity of Indian ancient civilization differs from those of Egypt, Mesopotomia and Greece as its tradition unlike the other civilization, has been preserved without breakdown to the present days. Study of cosmo-logy, cosmogony and cosmography follows to some extent different course other than of different kinds of civilization.

The ancient seers of India composed many verses and imaginations. The primary concern of the Indian philosophy has been Soteriological : man's action and destiny; yet the world is like a stage where human drama takes place. It was therefore natural for poets and philosophers to speculate on the COSMOS.

(A) HINDU PHILOSOPHICAL LITERATURES.

(i) THE RGVEDA.

In the Rgveda the Universe is considered mainly originated from primordial substance-water. Another theme which would become in later cosmogony; is that of cosmic egg—the primordial germ (Bija) was floating in water. From this egg Visvakarman; the creator of the Universe creates the Universe.

According to other view the gods and the world were born from ADITI, which is also personification of infinity in spaces and consciousness.

In Rgveda it is found that creation or Sristi is considered as "emanation" or expression of a primeval Principle or element due to some inherent energetic impulse. This main forces and the all-pervading oneness of the mental and spiritual consciousness are mingled together in describing the nature of the cosmic dimension. Man can grapse only with more certainty is the regular motion of the celestial bodies, the solar cycle (day and night) and the seasonal changes. All these phenomena are called RITA.

(ii) THE UPANISADS.

In the Rgveda, water has been considered as the primordial substance out of which the Universe originated; but in Upanisads there are further mentions about the four or five elements; sometimes water is still considered as the element; at other time it is fire, earth or air.

A most important question arose in the mind of seers of Upanisad what was there before or within the primordial matter? This something is the all-pervading BRAHMAN, neither female nor male. Its essence is ĀTMĀN, spirit and as such is common with man. BRAHMAN is considered as something transcendental superhuman, supernatural and is the absolute and the supreme one. Here it is recognized that GOD as the creator, sustainer and destroyer of the Universe; and BRAHMAN is not GOD but the infinite totality of existence. He is considered as the only PŪRŪSA. He is the NIRGUNA, the absolute. SAGŪNA, the power of the absolute, creates the whole Universe. Instead of plural reality there is monoism.

The creation, an art, is due to BRAHMAN SAMKALPA, the will of the BRAHMAN. Brahman wants to be many in order to be glad with his own creation. It is an "aesthetic emotion", a joy for an artist for his art. For its enjoyment of it 'existence of second entity' is felt. As such It manifests itself in many and varied forms in the Universe.

As an efficient cause of Its creations, It does not remain outside of Its art as in the case of artist and his art; rather It remains within its creation and from within It controls everything.

(iii) SĀMKHYA PHILOSOPHY.

Sāmkhya maintains a clear-cut dualism between Pūrūsa and Prakrti and silent about GOD.

The first Principle in Sāmkhya system is the undifferentiated Pūrūsa-Prakrti is the passive component of the active

creation Principle (Prakrtī). All the effects are contained in a POTENTIA in the resorvoir of Primary matter before and after their actual manifestation. Prakrtī is material cause in creation. Mahat or the Universal Mind is the first product of cosmic evolution after the start of creation caused by the play of the gunas. The cosmic intelligence of the pūrūsa is transmitted . From the Mahat are produced the individual souls or the ' jīvātmās'.

The next further evolution is that of the mind. The cosmic principle viz. the pure subtle elements (ākāsa, vāyu, tej, apa, ksitī, void , air, fire, water and earth respectively) and the five sense organs of action, the five life forces all evolve from it. There along with mind, intellect and ego or ahamkāra with purusa and prakrtī compose the twenty one principle of Sāmkhya.

VEDANTA PHILOSOPHY

According to Samkara, this entire diverse universe of name and forms, of agents and enjoyer, of space, time and causality- proceeds from the Brahman. Brahman is the omniscient, omnipotent and omnipresent sole creator, preserver and destroyer of the Universe. It is the material cause as well as the efficient cause.

The world is only a phenomenal appearance of Brahman which is beyond all plurality and phenomena and which is the same as Real self. Isvarā, or Sagūna Brahman associated with MĀYĀ is the cause of this world.

VAISESIKA PHILOSOPHY

According to Vaisesika school the material object of the world are composed of parts and are subjected to production and

destruction. They are divisible into smaller parts and the later are further divisible into all smaller parts. The atom is the minutest of matter which may not be further subdivided. Creation means the combination of atoms in different proportions and destruction means the dissolution of each combinations. The material cause of the Universe is neither produced, nor destroyed. It is the eternal.

(vi). PŪRVAMIMĀNSĀ PHILOSOPHY.

Jaimini, in Pūrva mīmānsā adopts the SABDA BRAHMABĀDA i.e. sound theory of creation as mentioned in the RgVeda. The vast world had its origin in VĀK i.e. sound. All perceptions and conceptions rose from sound. All existences are named as sound. Vāk Devi, daughter of seer Abhrīn, in her Devi Sūtra i.e. in the RgVeda says, "Sound is Brahman, sound is the origin of all Creation".

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(vii). PŪRĀNAS.

Pūrānas contributed significantly in the development of Indian philosophical culture. The pūrānas give ideas of ancient doctrines of creation, dissolution and description of different kings and rsis.

In most of the pūrānas different kinds of goddess, the personification of cosmic will or energy, in the evolutionary processes, are observed. Due to this reason every DEVI is inseparably associated with a SAKTI (energy). Thus Prakrti is NARTAKI (Dancer). The cosmic dancer who dances before the PŪRŪSA, involuntary display of her dynamic capacity

Creativity involves movements or cosmic energy stirs; it vibrates; what is potential becomes kinetic. Life is the rhythmic motion. There is an orderly movements of the COSMOS. In the womb of atom; subatomic particles are performing energy dance.

(viii). OTHER KINDS OF NOTIONS.

The creation of the universe is due to the dynamic energy of the Supreme energy. Dynamic or movement is the origin of GATI or LAYA in the language of music and dance. LAYA is rhythm and movement is the origin of sound(DHWANI) from which music takes its birth.

Śiva or Natarāj is considered as the Supreme Energy for creation of the Universe and art of dance is one of his major attributes. Rhythm and sound are understood as divine actions out of which the creation is possible due to Natarāj, the mysterious being.

According to Aryans that creation has the result of male and female contact, whether it be animate or inanimate. Natarāja's image represents image of the "Ardha-Nārisvara". The impersonal Divine principle becomes personified as a half male or female.

Śiva is also regarded as the destroyer, creation and destruction are fused together into the Dance. Amongst the seven forms of dance 'Pralay' form of dance signifies the destruction of the cosmos and 'Ananda' form of dance is meant of creation.

(B). BUDDHIST PHILOSOPHICAL LITERATURE.

In early period the Buddhists cosmology do not give any new things due to the fact that the Buddha refused to speculate about the origin of the world. Buddhist's cosmology developed mainly in later Mahāyāna literature.

According to this literature, the world originated from the four or five primordial elements e.g. (a). water or fluidity (b) earth or inertia or solidity (c). fire or heat (d). air or wind or vib-

ration (e) ether or volatility

Whatever would be the nature of this COSMOS its compound are in permanent motion and constant change. Time is composed of ' Ksana ' i.e. passing events or moments.

According to Buddhism; Creation is something what caused by the mental and volitional process. It is hankering, greed, desire which help the creation of emperical things can be reached, the creation would automatically stopped.

The Buddhism states that there are five orders in nature and the 'Bija Niyama' or the order of seeds and germs is one of them. It tells us how rice is produced from the rice-seeds and not from other seeds. Sugar taste sweet from sugarcane and so on. The sperm and ovum belongs to this order of seeds and germs. Life must come from antecedent life.

Just as in the realm of matter, the infinite variety of known substances results, from different combination of sub-atomic particles on the mental plane, a similar state of affairs exist and consciousness results from combination of psychological minute particles.

JAINA PHILOSOPHICAL LITERATURE.

According to the Jaina Cosmology the Universe is eternal. Its existence is divided into a infinite number of cycles, each consisting of a period of improvement - (Utsarpīnī) and one of decline (Avāsarpīnī).

Jainas believe that the Universe function through the interaction of living souls (Jīva) literally lives and five

categories of non-living (Ajīva), ether (Ākāśa), the means of condition of movements (Dharma) , the means of condition of rest (Adharma), time (Kāla) and matter (pudgala). Souls are not only the property of animal or plant-life; but also of entities such as stones, rocks and running water and many other objects.

There are infinite number of souls in the Universe; all fundamentally equal but differing owing to the adherence of matter in a fine atomic form of ' Karma '. This is the immaterial entity of other systems interpreted materialistically. The naturally bright soul becomes dim and clouded over by ' Karmic ' matter and thus acquires first a spiritual and then a material body.

HISTORICAL EVOLUTION OF THESE TWO NOTIONS.

(i) WESTERN

Man is much older than his civilization. The written records scantily and scattered, are insufficient to study a historical evolution of the civilization of a country. However, with the help of the relatively recent discipline of archaeology, and other suitable methods, e.g. radioactive carbon dating process and by determining the quantity of Flourine gas deposited on the prehistoric and historic species, we are aware of the history of civilization; extending five thousand years to one million years.

Actually, SCIENCE means the "Scientific" development of human intellect which finally lead human being to a happy and care-free life.

With the aid of some established principle of "Natural Science" some intellectual persons managed to devise some technical developments to make day-to-day life on this earth cosy. These persons are known as TECHNITIANS. They deal with the known. Generally peoples consider the technological devices as "Science"; but in actual practice "Science" signify the scientific developments of human intellect to find out the underlying Principle behind the nature. In fine; scientists seek to know the unknown nature of physical reality.

The living creatures had appeared on this earth due to evolution of single living cell millions of year ago and creature akin

to 'man', appeared on this planet only one million years ago. As such, man is quite younger to the living creatures on this earth; man has not crossed his boyhood. So human intellect and rational thinkings are quite immature.

Notions for creation and evolution in India and Occident have been evolved at the demand of nature of the ideas right from the begining of their civilization.

Science in West has been originated from Western logical and rational thoughts to understand the phenomena of the physical world. It is also, and, more fundamentally an attempt to gain insight into or understanding of the structure and working of the Universe.

In the early period of Occidental civilization Scientists were essentially philosophers and these Scientists and philosophers wanted to explain the observation of natural occurrances. These constituted the subject matter of physical Science, e.g. the apparant movements of the heavenly bodies and in the invention of rude implements. With the help of this man tried to increase the safety and comfort of their lives. Similarly biological Science must have began with the observation of plants and animals with primitive medicine and surgery.

Western deals with the materials which are perceptable to sensory organs directly but these sensory organs could not always capable of perceiving all the natural phenomena. To nullify the defects of the sensory organs the West takes the help of instruments.

(d) HISTORY OF EVOLUTION OF THE IDEA-VIJNANA-IN INDIAN
PHILOSOPHICAL LITERATURE.

(i) Hinduism

According to Hindu philosophical literature there are three categories of consciousness of human being. These are

(a) Ajñāna (b) Jñāna and (c) Vijñāna.

(a) Ajñāna is the absence of suitable consciousness.

(b) Jñāna is the consciousness of materialistic world and other faculties of intellect viz. literature, arts, philosophy and religion.

(c) Vijñāna is a special category of knowledge which is called 'Nischayātmaka Buddhi' with the help of which one can reveal the Brahman, the absolute and ultimate of the Universe. In proper sense it may be mentioned as the BRAHMAVIDĀYA.

In the Mundaka Upanisad there is verse stating two categories of learning or Vidya. One is 'Parā' and other is 'Aparā'. With the help of 'Parāvidya' one becomes aware of the ultimate eternal ONE who is active stealthily to sustain the Universe and this constituted 'BRAHMAN VIDYĀ'. On the other hand 'Aparāvidya' helps us to gain the knowledge of four Vedas, Upanisads, Siksa, astronomy, Ayurveda and chemistry etc.

The spirit of Scientific enquiry and rigorous co-relation of cause and effect in explaining the natural phenomena were

Again the radical intuition of science will lead to another Scientific inference and one new hypothesis or law should be explained in the light of other previous varified and established hypothesis or laws.

Science has not been considered totally natural or materialistic as it also study the human and socio logical phenomena. Again the study of medicine which is related to man, is also included in Science and even the various type of arts. Now-a-days study of science has been tried to make methodical in the place of subjectwise.

Along with the evolution of the methodology for studying of different natural and materialistic phenomena, the ideas and philosophy of life has also been changed. As a consequence socio logical, cultural, religious aspects of human being are also evolved.

The process of intellectual developements may be deemed to be started markedly from the period of the European 'Ranai-
ssence' in sixteenth century and upto the modern age. In other-word 'Ranai-
ssence' may be considered as a CATASTROPHY in Occident civilization.

particularly evident in ancient India. Indian thought developed on a strong element of philosophical naturalism. From this scientific ideas are evolved. Concrete ideas on the ultimate structure of matter, the evolution of elements and their combinations to form diverse substance of the earth, the classification of the compounds appear to have been put forward by Indians. In ancient time Indians measured the lands, divided the year, mapped out the heavens, traced the course of the Sun and its planets through the Zodical belt, analysed the contribution of matter and studied the nature of bird and beasts, plant and seeds.

(ii). Buddhism.

As for Buddhism the word 'SCIENCE' means the practical and dialectical approach on the human problem and to feel a Universal solution of the inherent problems. From this one can attain the Cosmic Nirvāna.

Physical environments effects only the physical organism, it does not effect the invisible, unknown life-principles within the organism. These life-principles meaning in two ways by the 'KAMMA NIAMA' - the order of act and 'CHITTA NIAMA' - the order of mind of psychic laws. According to these laws in case of matter, the infinite varities of known substance results from different combinations of three kinds of fundamental material particules - akin to the subatomic particles like electron, proton and neutrons. Consciousness results from combination of psychological nucleons

Jainism.

Jainas believe that the Universe function through the interaction or living souls (jīvas; literally lifes) and five categories of movements (dharma), time (kāla) and matter (pūdgala) souls are not the property of animal and plant life but also of entities such as stones, rocks and running water and many other objects.

All matters consists of atoms (paramānu). Each atom occupies one point (pradesa) of space. There are no different kinds of atom corresponding to the four elements - earth, water, fires and wind. The atoms, by developing the characteristics quality of the elements, becoming differentiated and thus form the four elements.

COMPARISON AND CONTRAST OF THE TWO :- THEIR
DEFINITIONS; METHODS; IMPACT ON MAN AND SOCIETY.

Generally the Science of West may be defined as a methodical trustworthy and exact study of different and materialistic phenomena . Science is also and more fundamentally an attempt to gain the insight into understanding of the structure and working of the Universe.

' Vijnān ' may be considered as the synonym of ' Science ' in West in some restricted sense. Though methodology of scientific study of these two differs, they have the common motto. These two want to gain insight into understanding of the structure and working of the Universe.

Indian ideas on the origin and evolution of the Universe are rather a matter of religion and Indian philosophers are also religious and the sophisticated intuition of seers ' idea of cosmology, cosmogony and cosmography are developed depending upon these kind of philosophies.

Greek philosophies which in turn explain the origin and the evolution of the Universe, developed from observation and rational ideas formed from the observations. These may be considered as the characteristic of a scientists. As such, the Ionian philosophers were mainly regarded as 'man of science '. But it would be rather unjust to say that there was no possibility of a divine

agency in Greek philosophy.

A similarity between the theory of Thales, that water is the material cause of all things, and the Vedic idea of primeval water as the origin of the Universe has been observed. Pythagoras is a founder of both of Greek mathematical science and philosophical Cosmology. Pythagoras expressed his cosmology in mathematical terms. The world in his philosophy is a mixture of darkness and light, good and evil, the formless and the form. The limited (pepersman) is formed by the imposition of time (peras) on the unlimited (apiron).

In the Indian scheme, prakrti is the ultimate cosmic energy and is the basis of all objective existence, physical and psychical. Purusa the conscious principle of creation, co-exist eternally with Prakrti. Prakrti in its transformation becomes perceivable object; whilst Purusa the self, remains the perceiving subject. In 545B.C. Xenophanes, Parmenides and Zeno of the Elea sought for the one reality underlying material phenomena. This is the same spirit as some of the later Vedic hymns and the Upanisads.

With Socrates the central preoccupation came to be man. The philosophical thought began to originate through man's nature and behaviour relating to GOD and the Universe. His saying GNOTHI SEATON is similar to the Indian thought; ĀTMĀNĀM BIDDHI (know the Self).

Next comes Plato. According to Plato the truths are truly real is something unchanging, eternal and divine. It is the world of forms or ideas with ultimate principle, the good. Plato's idea of the good is very close to the Supreme God of the Upanisads. Plato's physics and biology were anthropomorphic; even ethical. He held creational COSMOLOGY.

The Scientific knowledge of antiquity was systematized and organized by Aristotle. According to him in every moving sphere of the outer heaven and the unmoved mover who just exists to keep it in motion. Aristotle's book on the heaven gives an account of generation and destruction; opposing Principles of hot and cold; wet and dry etc. The unmoved mover may be compared with the 'BRAHMAN' in Hindu philosophical literature.

Notwithstanding their individual tradition both India and greece had direct and indirect effects on each other in Science as they did in philosophy.

In western civilization the interest had been increasingly focussed on single science upto the early part of 20th. century. Afterwards with the discoveries of different phenomena of the nature in occidental Scientific world, the ontological view-point has been gradually preferred as in India. In India through all periods, the special sciences are rooted in and developed on the underlying cosmic aspects and presupposition. Due to this reason the Scientific result is only a special case and phenomena, a demonstration, as it were, of the Universal cosmic law.

In the period extending from early Greek civilization to the middle of 20th. century this kind of Scientific spirit has never been existing. In the later two or three decades of the 20th. century with introduction of 'Superdeterministic' theory in Western Science; an attempt is being made to all the phenomena leading to unified single Principle and to the Universal cesmic Laws.

EXPLANATION OF THE MOST MODERN THEORIES OF NATURAL
SCIENCE IN THE PERSPECTIVE OF INDIAN PHILOSOPHICAL
LITERATURE.

Although the different traditions of India, which are based on mystical intuitions; are different from the Occident idea; their view of the world is essentially the same. These elements also seem to be the fundamental features of the world view emerging from the modern Science.

A comparative study of the diverse phenomena in Occident Science and Indian philosophical tradition will justify the view of unified theory of the world.

The Sāmkhya system attempts to explain the cosmic evolution in a Scientific basis in relation to energy as the Principle. Almost all school of Indian philosophy conceived and postulated the subtle motions inside the atoms. This is same as the motion of sub-atomic particles like electron, proton, neutron and mesons etc. in modern Science.

Both matter and energy were known to be indestructible; their total mass and quantity remains constant when they are subjected to changes in collocation. This kind of change is going on continually. Brahmagupta declared that all things fall to the earth by a law of nature for it is the nature of earth to attract and keeps things. This indicate the idea of attraction due to gravity before Newton.

The Eastern traditions constantly refer to an ULTIMATE invisible reality which manifests itself in all things; and of which all things are part. It is called 'Brahman' in Hinduism', 'Dharmākaya' in Buddhism. As it transcends all concepts and categories; Buddhists call it TATHATA or Suchness.

In ordinary life, we are aware of this unity of all things, the division which we experience in our daily life may be deemed as mere illusion, and according to Hindu and Buddhist's thought the illusion is based on 'avidayā' or ignorance produced by 'Māyā'. One can get rid of this if he can quieten his mind through meditation. The balanced, pure and tranquil state of mind can experience the basic unity of the Universe.

The basis of oneness of the Universe is not only the central characteristics of the mystical experience, but is also one of the most important revelations in modern Science. American writer Micheal Talbot, a Scientist by training, tries to prove that physics has more merged, as it developed, within the mysticism. Talbot sees a link in that between ancient mystics of India and the modern theory of 'FIELD' Physics. In his view the lines of force of the current space-time gravitational field have something common with the religious doctrine of the curled hairs of Śīva, the cosmic dancer. In the same way he sees a link between Śaktī and the theory of modern Physics about blackholes, between Nāda and Bīndū and the motion of sub-atomic particles about waves and particles.

With the EPR experiment and its mathematical formulation in 1964 by J.S. Bell indicate that at a deep and fundamental level the separate parts of the Universe are connected in an intimate way. Bell's Theorem laid down the foundation of the new theory as mentioned by Malic Kapec as "neodeterministic interpretation of contemporary microphysics". In the perspective of these new theories Science now looks forward to a higher kind of determinism or "Superdeterminism" which rules, guides and determines the Universe at a far deeper level.

According to Gary Zukav the superdeterministic model of Reality may a Buddhist's idea. He is not aware that this is based on Hindu or Vedantic idea on which seers and mystics have lived dedicating their whole lives with complete surrender to the will of the will the Ultimate Reality. This Ultimate reality is to be considered as a "Superdeterministic Reality". He chooses the image of Kālī-the Divine Mother as the symbol for the infinite diversity of experience.

In Shri Ramkrishan's life, this Divine Mother Kālī represents the Final power-Brahamamoyee-the All-determining will in the Universe. Vedānta calls the transcendent immutable Reality as Brahman. When Brahman is active-creation; sustaing and destroying-take place. It is called as Kālī, Śiva or Viṣṇu; other call it as Allah or God. This ultimate Reality is always the Supreme and Almighty, or Superdeterministic and it is ultimately