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Ethnobiological Analysis from Myth to Science, VI: Synchronized Concept on Genesis as Depicted in Ancient Compendia of East and West

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ABSTRACT Since the ancient times, man has tried to explain his own creation and development of the environment, in which he lives in. Such explanations may have been presented in mythical and fanciful forms, but a deeper insight into them, explain the facts, at par with the truth of modern science. A comparison of the theories of Genesis, depicted in *Manusmruti* and Bible, reveals the synchronised thoughts of both the compendia; even though they are far away from each other on the basis of time and space.

Bible needs no introduction. In east, especially in the Indian subcontinent, the Sanskrit epic *Manumsruti* (Manu) is regarded as the first ethical compendium on human jurisprudence presented by Sage Manu, construed to be the highest doctrine for the formulation of human ethics. It is an immediate post Vedic monumental work of encyclopaedic range with deep insights into human psychology, eugenics, metaphysics, genetics and ethics, and deals with topics from birth to transmigration of a human being. In the year 1794 Sir William Jones, Indologist, was the pioneer to translate the epic into English, later the revised edition by Haughton Published in 1825 with a preface by Jones; in 1886 it appeared as "Laws of Manu" in the series sacred Books of the East, edited by F. Max Muller. The later publication is a compilation by G. Buhler (1886) as an extract of the Sanskrit commentaries of Six Indian scholars and a Kashmir copy, the author being unknown.

Attempts have been made by our school of thought (Padhy, 1998, 1999, 2000, 2001; Padhy and Dash 2000; Padhy et al., 1997, 1997a, 1998, 1999, 2001; Dash, 1998, Dash and Padhy, 1997, 1997a, 1998, 1998a, 1998b, 1998c, 1998d; Mohapatra (2003), Mohapatra et al., 2001, 2001a, 2001b, 2001c, 2001d) to analyze *Manusmruti* from ethnobiological point of view, have explored many ancient scientific facts of the eastern world like: Creation and Dissolution of the Universe Geological time scale; Ecological Factors; Origin of life, expansion of biodiversity; Ecological indicators; Food chain of the nature and flow of energy; aspects of pollution, contamination and their prevention; Maintenance of salubrity; Ethics for conservation of bio-diversity; Basis of *Varna* division and its genetic relevance; Conservation of genetic traits; Proposing the basic Principle of Binomial nomenclature; Ascertaining Consciousness in plants and a scientific basis for Classification of Plant Kingdom and Animal world including Man. The human endeavour for conservation of biodiversity at the juncture of dissolution and the great men, who were committed to protect the creation are none; but sage Manu (depicted in *Bhaagabata*) in the east and Noah (Bible) in the west; discussed separately (Padhy, 2005). The co-ordinated thoughts on Genesis reflected in *Manusmruti* and Bible, are presented herewith to explore a step further on their scientific merit, rather than considering those as religious and mythical. The quotations of verses from both the compendia are presented in italics in the text following Buhler (1886) and Anonymous (1973).

CONDITIONS, PRIOR TO CREATION

Modern Astrophysics explains that creation of the universe started some time as a Big Bang associated with the concept of space and time. But, it is an unsolved phenomenon as to what happened before that moment (?), an explanation to that suffers from the difficulties in exactly transcripting the human perception in this regard. *Manusmruti* has explained such a metaphysical situation: "*This (universe) existed in the shape of darkness (Tamobhootam), unperceived (Aprajnyaatam), destitute of distinctive marks (Alakshanam – uninferrable), unattained by reasoning (Abijneyam –*

undefinable by words of authoritative statements), wholly immersed, as it were in deep sleep" (Manu: Chapter I / Verse 5). Bible says*: "In the beginning the earth (creation) was formless and empty, darkness was over the surface of the deep"* (Bible-Genesis: 1/2). The word 'empty' refers to nothing was existing, hence it was 'formless' which is beyond perception, reasoning and explanation. The concept of darkness not only points to devoid of light, but also relates to functionless and stubborn condition.

BEGINNING OF CREATION

God said : "*Let there be light and there was light, and He separated the light form darkness*" (Genesis: 1/3,40). It is physically impossible to separate light and dark as they are complimentary to each other, rather the former concept is sudden emergence of light out of darkness, as a mark of creation.

The *Smruti* Says: "*Then the divine self existent, indiscernible, (but) making (all) this, the great elements and the rest, discernible, appeared with irresistible (creative) power, dispelling the darkness*" (Manu: I/6).

The modern cosmologists believe that, the universe began as a dense Kernel of matter and radiant energy which started to expand about five billion years ago and later coalesced into galaxies; otherwise known as Big-Bang theory, evolutionary theory or the theory of expanding universe, proposed by Alexander A. Friedman and Edwin P. Hubble. The ancient concept of appearance of the creation as a sudden source of light, that could spread to overcome the prevailing darkness, is a primary conception of the expansion of the universe, from a point to infinity.

THE PHYSICAL ENVIRONMENT

Following the creation further expansions of the physical world are depicted in the under noted verses:

God called the dry ground "land" and the gathered waters He called "seas" (Genesis: 1/10).

God said: "*Let there be lights in the expanse of the sky to separate the day from the night, and let them sere as signs to mark seasons and days and years, and let them be lights in the expanse of the sky to give light on the earth*". (Genesis: 1/14,15).

"*God made two great lights – the greater light (Sun) to govern the day and the lesser light (moon) to govern the night. He also made the stars and set them in the expanse of the sky"* (Genesis: 1/16,17).

The views of *Smruti* in this regard are : "*Time and the divisions of time, the lunar mansions and the planets, the rivers, the oceans, the mountains, plains, and uneven ground; Lightening, thunderbolts and clouds, imperfect and perfect rainbows, falling meteors, super natural noises, comets, and heavenly lights of many kinds"* (Manu I/24, 38), were created.

The occurrence of such environmental animates perpetuating ever since which were more during the pre-biotic period. The changes of the earth surface due to periodic glaciations, emergence of mountains, submergence of lands etc, were evident during those periods being supplemented with modern scientific proofs.

PREBIOTIC EXISTENCE OF WATER

It was only in 1936, the book "The origin of life" by A.I. Oparin, the Russian biochemist, opened a new chapter to supplement thoughts on the scientific aspects of creation of life. Millions of years back the earth's atmosphere was in a highly reduced sate filled with gases like Ammonia (NH_3), Carbon monoxide (CO), Methane (CH_4) etc. By the interaction of these gases with physical forces like electrical discharge and U.V. irradiation etc. simple molecules could be constituted and aggregated to form more complex ones. No one knows how the life is created; but the reaction of these organic compounds with one another has given rise to a system that could reproduce. Probably the major structural organic molecule that constitutes the contemporary cell, were created abiologically before the life started.

All the above interplay needs the water medium. Pioneer research by Stanley Miller, Sidney W. Fox and Malvin Calvin have proved that biological molecules like amino acids, peptides, purines, pyrmidines and other organic compounds could arise spontaneously under different expected (hypothetical) environmental conditions in the earth's primitive state, designed in the laboratories. But, the origin of water is uncertain. It seems to have been present

on the earth during the prebiotic period. Water, an important chemical has a number of exceptional properties that makes it peculiarly well-suited for its job as the solvent of life. A large number of water molecules thus formed existed in the outer space, to carry out the life process since 3000 million years.

The ancient eastern view says: "*He, desiring to produce beings of many kinds from his body, first with a thought created the waters, and placed his seed (Beeja: Power of creation) in them*" (Manu: I/8). This metaphysical concept "Seed of the life" can be conceptualised as the prebiotic formation of molecules and transformation into biotic system; (such as) "*the spirit of God (that) was hovering over the waters*" (Genesis: 1 /2).

THE HYDROLOGICAL CYCLE

The hydrological cycle of the nature is the basic link among the bio-geochemical cycles; an integration of the physical and biological world.

"*He formed the atmosphere (Dibam) and earth (Bhoomim), between them the middle sphere (Madhya Vyomo-sky), the eight points of the horizon, and the (nature's eternal abode of waters (Ssaasswatam – Pure Water / Cloud and Rain)"* (Manu: I/13).

In conformity with the above, God said (in Bible): "*Let there be an expanse between the waters to separate water from water". So God made the expanse and separated the water under the expense from the water above it. The expanse was called "Sky"* (Genesis: 1/6,7).

BIODIVERSITY

Changes in physical environment was associated with the appearance of living forms broadly ascribed as *"Chara (movable – animal world) and Achara (immovable-plant kingdom) with example of biodiversity such as men, monkey, carnivorous beasts, domesticated animals, free living herbivores, birds, fishes, small and large worms, beetles, moths, lice, bugs, all stinging and biting insects and the plant world*" (Manu: I/37,39,40,41).

In addition to biological and abiological changes in nature the evolution of other basic psychological characters like: *"Tapam (Austerity – power of concentrations); Baacham (speech – for communication); Ratim (sex – for pleasure); Kaama (desire – Power to acquire) and Krodha (anger – to show reaction / retaliation) are expanded as secondary manifestations for the maintenance of the creation*" (Manu: 1/25). Such characters are not to be attributed to human beings only, rather possessed by all animates too.

But, in the beginning he assigned their several names, action and condition to all (created beings) even according to the words of the Veda" Manu: 1/21). As Veda is regarded as the final authority of knowledge and the prime philosophical insight, the developments have occurred systematically in the order of the nature's law, nothing at random. Incidentally, 'name' signifies identity of an organism, 'actions' specify its working principle and 'condition' reflect on its ecological position, which are the three important underlined components of 'Ecological Niche'.

Bible Says*: "The Land produced vegetation: Plants bearing seed and trees bearing fruit with seed in it*" (Genesis: 1/12).

"*God created the great creatures of the sea and every living and moving thing with which the water teems, and every winged bird-blessed them "Be fruitful and increase in number"* (Genesis: 1/21,22).

"He created the wild animals, livestock and all creatures that move along the ground" (Genesis: 1/25).

The expansion of biodiversity, the ultimate motive of creation; as narrated in both the epics seems to be unsystematic. But, subsequently, Manu has systematically classified the plants as *Vanaspati* and *Vruksha* (Manu: I/47) similar to cryptogams and phanerogams of modern Botany (Padhy and Dash, 2000). He also identified plants propagate by seeds or by slips, grow from shoots; and plant groups as medicinal, annuals, herbs, shrubs, grasses, creepers and lianes (Manu: I/46,48). Moreover, he was the pioneer to recognize the possession of internal consciousness and the sensation of feeling pleasure and pain by plants (Manu: I/49).

Differentiation of plants in Bible (Genesis : 1/12) into two groups such as : Plants bearing seed and trees bearing fruit with seed in it, is certainly a prime approach for division similar like *Manusmruti*. 'Seed' means a part of a plant from which a new plant of same kind can grow and fruit means a part of a plant in which seed is formed. In this context the spores produced by all Cryptogams should be regarded as seeds;

and the other group 'trees bearing fruit with seed in it' points towards the Phanerogams, as the ovary of a flower develops into fruit.

The classification of animals by Manu is on the basis of birth (*Janmani*) such as 1. *Yaraayuja* (Born from womb – Herbivore, carnivore and human beings), (2) *Andaja* (Born from egg – fishes, reptiles and Aves) and (3) *Swedaja* (Born out of hot moisture and filthy substrate includes all other animals, mostly non-chordates) (Manu:1/42-45). In Bible, the appearance of the biodiversity in the six days creation programme of God, is in a prime systematic order of evolution such as : on the third day of creation – plants produced, on fifth day aquatic animals and birds and on sixth day terrestrial animals, live-stocks, wild animals and all the creatures that move along the ground appeared, finally followed by man.

EVOLUTION OF MAN

The appearance of man on the earth is clearly depicted in Bible.

"So God created man
in his own image
in the image of God
he created him; male and female
he created them". (Genesis: 1/27).

Manusmruti has included man in the classification along with animals as *Yaraayuja*, but further said that: "Dividing his own body, the lord became half male and half female; with that (female) he produced a great man (*Viraag*)", who carried out the creation further (Manu: I/ 32,33). Moreover, the supreme soul is named as *Nara* (Manu: I/10), adopted as the generic name of human beings in Sanskrit, the theme synchronize with Bible.

Religious epics of diversified sects of the world have records of their ancient thoughts, may be presented in mythical or fanciful form; are not childish stories or pre-scientific explanations, rather they have serious insights into reality. A time has come to consider seriously the religious practices are of great significance in saving the natural world (Goldsmith, 2000). Human evolution both biological and cultural has taken place simultaneously and independently throughout the globe, yet co-ordination of thoughts are alike under the common roof of the nature. Modern science may be sophisticated, but not to ignore the ancient ideas, which are not far away from the base line of human scientific thinking.

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