

Ancient Science of India 10: Primary Concept on Origin of Life-A Review

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ABSTRACT The concept of Origin of Life was presented first in Manusmriti in post vedic period along with mythical presentation of Naaraayana that, life appeared first in sea water. Bhagavad Gita (5000 years ago) had projected a coordinated view on Life concept. Saint Paraasara has presented his view in his book Vrksaayurveda during the period 700 B.C. The Biochemistry behind the origin of life came to lime-light in the year 1936, which was followed by experimental evidences.

INTRODUCTION

The concept of life, called *Jeevana* in Sanskrit, is the mid time period between birth and death of any living organism. However biologically, life is existing and active within the sexual cells of any living being, demods its origin from a pre-existing living system. Life remains as the most mysterious, undissected and untraced phenomenon. For a common man, life is of divine origin with a conceptual feeling that, analysis of life is not within the reach of modern scientific world, which has traced upto the gene level.

With the developments of modern biochemical sciences, the composition of a cell of any living organism, can be traced as simple chemical elements such as, carbon, hydrogen, oxygen, nitrogen, phosphorus, sulphur, iron, copper and many others. It is possible to separate these chemical components from a living cell by following chemical methods. But it is impossible to reassemble the chemical elements to constitute a living cell again. Consequently two questions arise in mind (Trehan 1987).

1. Is life system a separate unit from the complex chemistry of living objects?
2. Is life an expression and result of complex organization of several chemical substances and molecules integrated in a right perspective?

Aim

The answer to the above two questions is a search since the vedic age and the present communication focuses over the scientific insights of ancient Indian scientists on the origin of life.

METHODOLOGY

This study was carried out following the 'Literary Research' methodology in Ethno-biological research techniques (Padhy et al. 2015).

OBSERVATIONS AND DISCUSSION

Origin of Life-concept in Manusmriti

During the post vedic period, Manusmriti was presented by *Maharshi* Manu, which is construed to be the highest doctrine of the formulation of human ethics. This is regarded as the first law book of human society (Swain 1997). It's contents are original and based directly on the thoughts of Veda. The present research projects that, sage Manu was the pioneer to reveal the ancient science of Bharatavarsa (India) such as; the theory of creation of the universe, the universal time concept, geological time scale, aspects of environmental factors, ecological indicators, ecological niche, origin of life, biological classification, binomial nomenclature, eugenic concept and basic philosophy for the conservation of biodiversity (Padhy 2023). The environmental laws of the humanity were projected for the first time in the epic Manusmriti thousands of years ago, that speaks the consciousness of ancient Indians about the science of Ecology (Padhy et al. 2006).

Manusmriti and modern science (discussed later) commonly converge to express that 'Life' was created first in the water medium. The smriti says; "He (God / Nature), desiring to produce beings of many kinds from his own body, first with a

thought created the water and placed his seed (*Beeja*; the Power of Creation) in it” (Manu, Chapter (CH) 1/ Verson (VE) 8) (Buhlar 1886).

“The living system (*Sareera*-body of any being) was systematically created and a perishable form was evolved from the minute imperishable (surrounding) due to combination of great elements (*Mahaabhootas*; Earth (*Kshiti*), Water (*Aapa*), Fire (*Tejas*), Air (*Vaayu*) and Ether (*Aakaass*)- the five ecological factors of ancient-India) (Manu, CH 1/ VE 14-20). Grossley this view is similar to modern theory of aggregation of molecules and chemical evolution of life (discussed separately).

It is clear from the above discussion, that life (living system) was first created in water medium and a perishable form was evolved due to combination of surrounding elements, which are imperishable.

Sriman Naaraayana; Symbolic Presentation for Sustenance of Life in Water

The ancient Indian sage scientists have presented the different environmental powers as *Devataas*. Among all the powers, Brahma, Vishnu and Shiva are accepted as the main cause of creation, maintenance and destruction of the universal activities. Brahma is regarded as the power of creation, Vishnu stands as the *Prakruti*-the nature and Shiva (other name *Rudra*-furious) as the spirit of destruction.

The meaning of word ‘Vishnu’ is all pervading, as the nature has proliferated everywhere. The nature is a joint presentation of matter and energy. If Vishnu is the matter; his consort Sri Lakshmi is the energy-the fostering power of the nature (as food). The dual, significantly represent the interchangeable matter and energy in nature (Padhy 2022).

Bhagawan Vishnu has one thousand names (presented as ‘Vishnu Sahasra Naama’ in book form). Out of these one name is ‘Naaraayana’. Interestingly this name is presented in Manusmriti in a scientific form as follows:

“The water (s) is (are) called *Naaraah*, (for) the water, indeed, the off-spring of *Nara* (the other name of Supreme Soul and Water originated from Him); as they were His residence (*Aayana*). He (the Supreme Soul) hence is named as *Naaraayana* (Manu AD 1/VE 10)”.

The above narration can be explained scientifically; the representative life procreates, Naaraayana first appeared (took his abode) in water. As representative of *Nara* (God)-the Supreme Soul; human beings have named themselves as ‘Nara’ and water in named as ‘*Neera*’ in Sanskrit. In Hindu mythological presentation Naaraayana takes abode on the coiled snake named ‘Ananta’ in the deep cosmic ocean named ‘Khira Saagar’ (milk sea). His sleeping posture is called ‘*Anantasayana*’-with a meaning endless sleep. The meaning of *Ananta* (*Na-Annta*) is endless which indicates the flowing time of the universe. Time passes away silently like the movement of a snake.

In the eleventh chapter of Gita it is narrated that, after witnessing the supreme, effulgent, primal and infinite cosmic body (*Visvarupa*) of Sri Krishna, Arjuna asked him (11/31)- “Tell me who you are with a form so terrible?” The answer was-*Kaalosmi*: I am inflamed *Kaala*, the eternal time-spirit. No one knows when the time started and when it will end. Time is not limited between beginning and end, it is a continuous flow being beginning less and endless (*Mahakaala*). The whole presentation of Manusmriti focus over one point that life was first appeared in water medium (sea) and no time can be fixed for this event.

In an eye-catching mythological icon (Fig.1), Naaraayana as an innocent kid, is sucking his own toe, resting upon a Banyan (*Ficus benghalensis*) leaf in the midst of the cosmic ocean at the time of dissolution (described in the epic Matsyapurana, Padhy et al. 1996). This expression is symbolic as the floating of a baby on a leaf seems impossible. A little modification of the icon (by the author) with addition of captions, makes it more meaningful from scientific point of view, suggesting the autotrophic nature of plant system as self synthesizing and self sustenance (Mohapatro et al. 2001; Padhy et al. 1996). The whole system is a full-fledged expression of the photosynthetic knowledge of ancient Indians, represented in a mythical form and strengthens the idea that life first appeared in sea water, discussed later.

Coordinated View of Bhagavad Gita

In Gita (AD 7/VE 4-6) Sri Krishna has presented two natures of a living system. They are (1) *Aparaa Prakriti* (lower nature) and (2) *Paraa Prakriti*

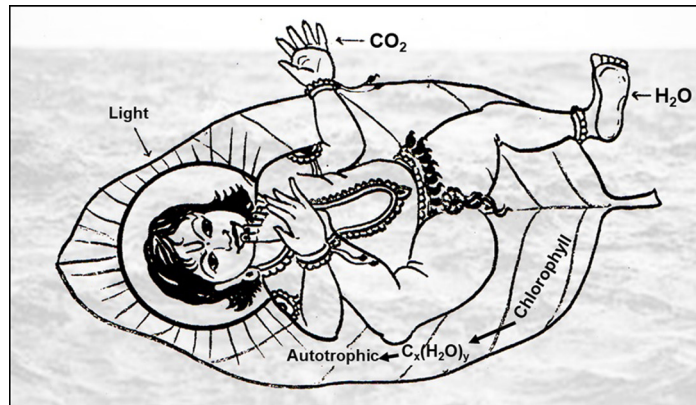


Fig. 1. Vedic age biochemical concept of life

(higher nature). It is declared that the conjugation of these two natures is responsible for the origin of life.

The *Aparaa Prakriti* is divided into eight fold; Earth, Water, Fire, Air, Ether, Mind, Intellect and Egoism. The first five elements are known as *Pancha Mahaabhootas*, are perceived through five senses (Padhy 2016a). Ether / Sky-sound vibration through ear; sense of touch of air through the skin; eye cognizes light or fire; tongue experiences taste of things dissolved in water and nose contacts smell produced by earth. These five are known as instruments of knowledge (*Janyaandriyas*).

The later three-Mind (*Maanas*), Intelligence (*Buddhi*) and Ego (*Ahankaara*) form a single unit termed as *Chitta*-the mind stuff. Each has its distinguishing character, individual function (Padhy 2020).

Maanas is the mind in real sense what a common man understands. It has the rational directing power behind all actions. It is the seat of all conditions of thought imagination, dreaming, affection, desire, moods and temper. It is instrumental through which thoughts enter from the subjects. It constantly vacillates between objects.

The *Buddhi* is the seat of intelligence or the initiating capacity of the individual. It is the capacity of determination. It is the basis of knowing, willing, feeling and resolving. It is analytic in nature and dwells upon a thought that rises in a mind.

The *Ahankaara* is the individuating or arrogating principle. It is responsible for the position and identity of an individual (I am). It is the self-conscious principle. It has the function of accepting or rejecting the demands or wishes made by the

impulses.

Out of the above three, each one is only a separate department of a single functioning unit *Chitta* (totality of conscious experience) without any tendency of being separated to individual parts. The distinguishing feature of *Chitta* is awareness and capacity to know its environment. It has two fold behavior, that is (1) conscious and (2) unconscious. The individual is aware of the first behavior and record it as experience; while the second one is subconscious experience occurs without the awareness (Padhy 2016b).

The *Paraa Prakriti* is the cosmic life principle named as the *Jivatman*. It is higher nature-the life element by which this universe is upheld (Gita 7/5). Finally Sri Krishna has declared;

“Know that these two (*Paraa* and *Aparaa*) are the womb of all beings. I am the origin and dissolution of the whole universe” (Gita 7/6) (Chidbhavananda 1965).

In the introduction two questions are raised. Coincidentally the *Paraa Prakriti* is the answer for the first question-life system is a separate unit from the complex chemistry of living objects and *Aparaa Prakriti* is the complex chemical organization of a cell refers to the second question. Bhagavadgita has coordinated both of the views 5000 years ago and presented the basic theme of life (Padhy 2016a).

The concept of origin of life, as presented in Bhagavadgita is as follows:

Eight fold are my Nature,
Earth, Water, Fire, Air, Ether,
Mind, Intellect and Egoism,
are classified; *Aparaa Prakritim*.

Different from it, the life element, known as *Paraam*, superior constituent. All beings evolved from this two fold *Prakriti*, I am the origin and dissolution, of every entity (Gita: AD7/VE 4, 5, 6) (Padhy 2021).

Sri Krishna again in the Chapter 13 of *Gita-Kshetra Kshetrajna Vibhaga Yoga* has confirmed the concept of origin of life. The physical body is described as *Kshetra* (the field with basic chemical characters) and the life spirit is *Kshetrajna* (the knower of the field). Combination of these two is presented as an living system (Gita, AD 13/VE 1, 5, 6) spreaded within all beings in subtle form (Gita 13/15). The life energy is undivided but seems to be divided in beings (Gita 13/16). Basically the living cell of any being is *Kshetra* and the functional unit life force is the *Kshetrajna*.

Concept of the Origin of Life in the Text 'Vrkshaayurveda'

The treatise *Vriksaayurveda* (Science of plants and plant life) is one of the remotest work dealing with plant life in scientific manner was compiled by Paraasara (Sircar and Sarkar 1996). The text is divided into six parts (*Kaanda*). This book deals with topics; Origin of life; Ecology; Distribution of forests; Morphology; Classification and Nomenclature; Histology and Physiology of plants. The first part is named as 'Bijotpattikaanda' is again subdivided into eight chapters. In the first chapter vide verse-6 the concept of origin of life is presented as follows:-

*Aapo hi kalalam vhutwa yatt pindasthaanukam vhabett;
Tadebamm byuhomanatwatt beejatwama-dhigachhati.
Tatra siktaa Jallayi vhumirantarushmabepachiitamm;
Vasuna vyuhamaanaarthe bijiatwamm pratiipaadyate*

(Chapter-1/ Verse 6)

- Now hear me delivering these precious words as to how organic life originated.
- When water transformed into a Jelly like substance (*Kalalam*) within it was eventually formed a dense organic mass called *Pindasthaanuka*.

- In course of time, being regulated (*Iyuhan*) by terrestrial energy (*Vasunaa*) metabolic changes induced by contact with water.
- Further, it was converted into a primordial germ call (*Aadi Bijjam*).

The above concept of Paraasara is projected in a simpler way in the text 'Garbhosaariroponisad', which states that:

Water attains a colloidal state (*Kalalibhuuta*) and subsequently becomes dense organic mass (*Pinda*).

Biochemistry behind the Spontaneous Generation of a Living Organism

In the year 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 (Wald 1954). He had the view that, the major structural organic molecules that constitutes the contemporary cell, were created abiologically before the life started. It is suggested that a variety of chemical and physical processes taking place on the earth or its surrounding atmosphere, led to the formation of simple biomolecules representing the cellular status. These biomolecules entered into a network of interactions resulting in more and more complex grouping and structures. Finally, these biomolecules formed a concrete organizational unit which expressed itself in the form of life.

Alongwith the theoretical background, it also become essential to present the analytical and experimental observations concerning the formation of organic molecules in the laboratory. The attempts to synthesize biochemical and other related organic compounds under stimulated prebiotic conditions had been fairly successful. Under different environmental conditions in the Earth's primitive state, designed in the laboratories it was proved correct (Wald 1954).

To make an organism, demands the right substances in the right proportions and in the right arrangement. The question now arises-where this may have happened? It is supposed that life first arose in the sea. The latter is enriched with the principal components of organisms and provided a medium which could dissolve molecules of the widest variety and constantly mix and circulate them. The sea gradually turned into a nutrients broth

where the molecules came together in increasing number and variety. They collided, separated, reacted with one another to produce new combinations and sometimes aggregated into new multimolecular formations of increasing size and complexity. To form an organism, molecules must enter into intricate designs and connections; they must eventually form a self-repairing, self-constructing dynamic machine. In course of time the first living system came into existence with all these background of Biochemistry.

CONCLUSION

Life is defined as any system capable of performing functions, such as eating, metabolizing, excreting, breathing, moving, growing, reproducing and responding to external stimuli. The most popular definitions of life involves: homeostasis; is composed of cells; has a definite lifecycle; can grow; showcases metabolism; responds to stimuli; adopt to environment; reproduce and evolve. Biologically life is a characteristic of a living organism that distinguishes the later from a dead organism, or a non-living thing. The origin of life is presented as a result of a supernatural event (internet source).

Whatever the views presented earlier in Manusmriti and Bhagavad Gita focus over the theme; Life is a supernatural manifestation. The modern science explains the biochemistry of life, but silent about the metaphysical aspect. Paraasara's view is very precise and upto point.

To understand the concept on origin of life, it is necessary to be aware of the Biological characters of living system as narrated above. Coincidentally Srikrishna had presented the basic characters of living beings (Gita, AD 10/VE 4, 5) as follows:

“(1) *Buddhi* (intellect) (2) *Jnaanam* (wisdom), (3) *Asammohah* (non-illusion), (4) *Kshamaa* (forgiveness) (5) *Satyam* (truth) (6) *Damah* (self-restraint) (7) *Samah* (calmness) (8) *Sukham* (happiness) (9) *Dukham* (pain) (10) *Bhavah* (birth) (11) *Abhavah* (non-existence, death) (12) *Bhayam* (fear) (13) *Abhayam* (fearlessness) (14) *Ahimsa* (non-injury) (15) *Samataa* (equanimity) (16) *Tustin* (contentment) (17) *Tapah* (Austerity) (18) *Daanam* (Charity) (19) *Yasah* (fame) and (2) *Ayasah* (Obolquy).

A comparison of Srikrishna's view and modern science will certainly provide better scope to comprehend the life process and its origin. The

above referred twenty living characters, which are natural (divine originated) are not of the animals/ human beings only, rather the plant world express such behavior. Even the minute possible organism, the bacterium is not free from aspects like intelligence, egoism, power of cognition and capacity for perception of subtle elements.

The character variation among the beings is responsible for diversity in the biological world. The characters presented by Sri Krishna exists in different forms with different intensities in different organisms of the biodiversity; may be completely suppressed in one case or extraordinarily expressed in another organism, with diversified manifestations and evolution.

RECOMMENDATIONS

The perspective guidance of Manusmriti and Bhagavad Gita regarding the origin of life and living characters will certainly uplift the human society in right direction.

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