

Origin of the Life and the Universe-from the Vedic Era to Modern Scientific Investigation

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Though the topic is common, here I would like to reveal very important facts which are not hitherto discussed in details. The people who lived on this earth for thousands of years wanted to know the origin of the life and the universe. The basic concepts represented by those people are going to be discussed in this attempt.

We believe that the Vedic hymns composed by seers and sages from about 3000 BC, were sung under divine inspiration.

The PurusaSūkta is the 90th sukta in 10th Mandala of the Rigveda. Later, it is seen in the VajasaneyiSamhitā of the ŚuklaYajur Veda, the TaittiriyaĀranyaka of the KrisnaYajur Veda, the Sāma Veda, and the Atharva Veda, with some modifications and redactions.

The Purusa in the title of the PurusaSūkta refers to the ParamaPurusa, Purusottama, Nārāyana, in his form as the VirātPurusa. He was the source of all creation. It describes this form of his, as having countless heads, eyes, legs, manifested everywhere, and beyond the scope of any limited method of comprehension. All creation is but a fourth part of him. The rest is un-manifested.

The presiding deity of the *mantra* is Purusa, a collective personality which pervades whole of the universe. Purusa is pure consciousness and the other part is called Prakriti, which forms the visible world.

Early Vedic man wondered how the world was created. He was inspired by the intricate mysteries of nature, yet was not afraid as in other civilizations. He set out to explore making synthesis, reasonable analysis. Vedas hold rich knowledge, regarding astronomy, physiology, medicine, mathematics etc., Rishi's explanations are reasonable and objective.

Vedic religion did not have a concept of a Supreme God who was the creator of the universe and who is immanent and yet transcends his creation. Isam, Isvar, Paramātma, Maheswara, Parameswara, Prabhū, Bhagavān etc. denoting a Supreme Being do not occur in the early part of Rig Veda.

PurusaSūkta in its original form as it appears in the Rig Veda does not call Purusa by any other name other than Purusa. All other appellation as to who this Purusa is the imagination and inklings of the later interpreters. If there was another person in the Rig Veda who could be equated with this Purusa, it would have been obviously done assuming it as the work of one single seer. The word "Purusa" in its most literal sense means Man. In that sense

it is translated into Sanskrit as Cosmic Man. Purusa is not really human, anything that has consciousness or personality is Purusa. Thus we are not talking about just human beings but about the totality of created beings with personality in the whole universe, in all the cosmic dimensions. While this Supreme Being is a Person, he has a body. The whole cosmos is his body which includes both animate and inanimate. There are an infinite number of dimensions to the cosmos and He is in everything and everywhere.

So, why does this Purusa have thousands of feet, hands, and eyes? This Supreme Person is Omnipresent, Omniscient and Omnipotent. And then we see that the Purusa extends beyond ten fingers. sāyana interprets it as "beyond human limitations." The ten fingers here are the digits, the ten fingers of the human hands. They are the basis of count, of all mathematics, of all the logic and science built on measurable. But this Purusa is beyond the measurable material realms and beyond even human logic and understanding. In a sense the whole cosmos must be considered as the body of the Person. Just as body has several parts, the creation is diverse. But there are dimensions beyond this material body of cosmos. The totality is the Purusa – body, mind and spirit and beyond – beyond into the unknown.

Purusa portrays a Lord of the Universe which is depicted only in the Hebrew theology as Adam Kadamon – the Primordial Man. In the Genesis, the first book of the Bible, God said, "Let us make man in our own image". The first earthly man was created on the model of a cosmic Purusa.

In the fifth verse explained a *yajna* which is described as the creation of the manifest fallen world by the gods. This is typically a Vedic Sacrifice procedure associated with the creation including the *yantra* and *mantra*. It is a clear portion of extreme poetic freedom that went too far astray so that it lost its meaning and does not make sense – if not even contradictory. Commentators had a tough time in explaining it away. The idea they took was that this is really not a physical sacrifice but imagined sacrifice – mental sacrifice. So it does not give too much emphasis on the *yantra* and *mantra*.

The word *Yajna* has two meanings essentially. The first meaning is effort and the other meaning which is indirect is sacrifice.

In the following verses of the PurusaSūkta we therefore face a serious problem. Since there is no greater God than the Purusa, to whom are the sages sacrificing the Purusa? If

Purusa is giving himself as a sacrifice for the creation of the world, why is it being done by the gods? Where did these gods come from and when? From what follows the sacrifice is done by the gods and the sages where as they are later said to have evolved out of this sacrifice. All together therefore there is confusion in the thought pattern of the rest of the Upanishads. This may be most probably because we are reading it out of context and the whole of the rest of the section should have come in some other context. I suggest a few alternate contexts which will make it relevant. But the continuity of the Sūkta is severely hampered by such an interpretation.

Since the PurusaSūkta is seen in all the Vedas, it is cited as the essence of all *srutis* by Veda Vyāsa in the Mahabharata. Saunaka, Apastamba, and Bodhāyana have also written concerning the use of the PurusaSūktam.

What does the PurusaSūkta talk about?

Purusa as Brahma remained inactive, and Aniruddha Nārāyana, one of the four aspects of Nārāyana in the first tier at the base of the VisākaYūpa, asked him “Why do you do nothing?” “Because of not knowing,” Brahma replied. “Perform a *yajna*. Your senses, the *devas*, shall be the *ritviks*. Your body shall be the *havis*. Your heart, the altar. And I shall be he who enjoys the *havis* - the offering. From your body sacrificed, shall you create bodies for all living creatures, as you have done in *kalpas* before this”. Thus says the SākalyaBrāmhana.

This *yajna* was called “*sarvahut*”, the offering of all. The act of creation itself grew out of *yajna*, the rite of sacrifice. Who was worshipped at this sacrifice? It was the Purusa. Who performed it? Brahmā, the creative aspect of the Purusa. Who were the *ritvik* priests? The *devas*, who are the Purusa’s senses. Who was tied as the beast of the sacrifice? Brahmā, again. What was *barhis* (sacrificial grass), the altar of the sacrifice? All of nature. Who was the fire? The Purusa’s heart. What was sacrificed? Again, the Purusa himself, his great body that contained all of creation.

Thus in this description we have two generations of gods already in existence after the cosmos came into existence. It was after these the Purusamedha took place.

In a way, this is a message of love, that the Purusa would consume himself in the fire of creation, to create all the worlds. From this sacrifice all of creation emanated. This is central to the message of the PurusaSūkta.

vedahametamPurusammahantam
ādityavarnamtamasahparastāt |
tamevamvidvānamrutaihabhavati
naanyahpanthavidyate‘yanāya || [1]

This great Purusa, brilliant as the sun, which is beyond all darkness, I know him in my heart. Who knows the Purusa thus, attains immortality in this very birth.

I know of no other way to salvation.

The most commonly used portion of the *Sūkta* contains 24 *mantras* or stanzas. The first 18 *mantras* are designated as

the *Pūrvanārāyana*, and the rest as the *Uttaranārāyana*. Sometimes 6 more *mantras* are added. This part is called the *Vaisnavānūvāka* since it has been taken from another well-known hymn called the *Visnusūkta*, a part of the *Rig-vedaSamhita*. Though the *mantras* of the *Uttaranārāyana* and the *Vaisvavānūvāka* do not seem to have any coherence with the 16 *mantras* of the *Rig-vedaSamhita*, tradition has somehow tied them together.

The PurusaSūkta is a rather difficult text to explain in a modern way. This is primarily because of the archaic language that cannot always lend itself to interpretations based on the classical Sanskrit, and that many of the words can be taken in several different ways, both literal and symbolic.

Nonetheless, the PurusaSūkta gives us the essence of the philosophy of *Vedānta*, the Vedic tradition, as well as the *Bhagavad-gītā* and *BhāgavataPurāsa*. It incorporates the principles of meditation (*upāsana*), knowledge (*jnāna*), devotion (*bhakti*), and rituals and duties (*dharma* and *karma*). This is why it is highly regarded and extensively used today as much as thousands of years ago.

NāsadiyaSūkta

Just like any other Sūkta, what has been given here is merely the gist of its literal meaning. There are many commentaries that attribute a much deeper significance to this hymn and explain each term in great detail, but some of them use really "creative" interpretation of the words to arrive at their conclusions.

Explanations of verses

- 1) There was an instant when time began for one of the endless cycles of creation and annihilation of the cosmic worlds. Before this happened, the universe had only one reality, that is, water. The cosmic matter (combination of reality and non reality) was not yet created and a vast stretch of seemingly endless celestial water (sky with super fluidity) existed.
- 2) The seer saw in a state of transcendental consciousness: a vision of the primordial entity prior to the creation of universal matter, when there were no galaxies, stars, planets; and due to their rotations, no night and day. The living beings were yet to be produced, and therefore the very question of life and death did not arise etc.

The Nāsadiyasūkta of the Rig Veda proclaims, for the first time, intimations of the seer’s sounding the depths of being. The astounding vision of the transcendent by the relative is the apparent theme of this famous hymn. The ultimate state is here depicted as not capable of being designated either as existence or as non-existence, for there was none, then, to perceive it, before the manifestation of the heaven and the earth. There was only an indescribable stillness as it were, deep in its content and defying approach to it by anyone.

It appears that Nāsadiya is indeed speaking of void. But it is not speaking of the one hidden in the void (in indiscriminate water-continuous), who becomes, through inherent ardour and love. Some of the important physicists of the world have concluded that there is a great similarity

between ancient Hindu and modern cosmologies. Fritjof Capra, a noted physicist, writes, "This idea of a periodically expanding and contracting universe, which involves a scale of time and space of vast proportions has arisen not only in modern cosmology, but also in ancient Indian mythology. Experiencing the universe as an organic and rhythmically moving cosmos, the Hindus were able to develop evolutionary cosmologies, which came very close to our modern scientific models [2].

It is generally argued by the cosmologists that the Hindu theory of cosmogony is a Big Bang theory with a plasma type universe and this arrangement agrees well with models in modern physics. [3] Consistent with this, the Chandogya Upanisad mentions that at that time of burst of the primordial sphere, there was a loud sound [4].

The Nāsadiyasūkta of the Rigveda gives us a brief idea of what Hindus in the Vedic period thought about the origin of the Universe, which is very much in conformity with the modern concept of cosmogony.

The Chāndogya Upanisad says, "In the beginning, this was existence alone one only without a second. Some say that in the beginning this was non-existence alone.....one only, without a second. From that non-being, arose existence [5].

"But how could it be so? How could existence (being) arise from non-existence? In truth, in the beginning, there was existence alone, one only, without a second" [6].

"That willed, "may I become many, may I grow forth (expand)". This created energy (*Tejas*). That energy willed, "may I become many, may I grow forth". This created water (actually, proton or hydrogen) [7]. The Hindus believed that water preceded other material substances and water is the cause of cohesion of all the substances. This view is not far removed from what modern scientists believe today.

The Vedic religion clearly displays a description of an ordered universe in which 'ta' prevails. There are various accounts as to the evolution of the universe, some implying agency, others emanation from a pre-existing state where there is no beginning or end. Important examples are Brahmānda (the cosmic egg from which all creatures came forth [8]). The Hiranyagarbha (the golden embryo) or *ākāśapurusa*, the indestructible person, who becomes the vibrating energy that generates all life; Viśvakarman as creator (the first to come from Brahmānda, the architect of the Gods [9] and Brahma (the source of the universe, presiding over all creation, preserving like Visnu and destroying like Śiva [10]). As important was the comprehension that the universe came forth from primordial sacrifice as described in the Rig Veda [11]. Another belief is that the universe has no point of origin at all, but possibly was an emanation from a ground or source being, the latter being identified as Brahman.

In truth, the Indian religion accepts the fact that the origin of the cosmos could not be known, but the conditions of ordered life could be extremely well known. Cosmology presents the terms for achieving that understanding

cosmology, as in the arena of opportunity-while remaining agnostic about detail, as in the so called "Hymn of creation" [12]

The ancient Hindus conceived of an expanding universe. The very word for universe in Sanskrit language is "Brahmānda" meaning 'the expanding sphere'. The word 'Brahma' is derived from the root 'bṛh' which means 'to expand or enlarge'.

The Nāsadiyasūkta consisting of seven verses is the realization of a Vedic seer. It describes the state of the primordial reality at the time of creation of the material universe, that is, the visible and the invisible matter of nature. With the ever existent, non-material, super-fluid, and dynamic reality of *ākāśa* (sky) as the most basic substratum of the universe, the significance of the spiritual experience of the seer, who would have composed these verses, becomes clearer.

The hymn has attracted a large body of literature of commentaries both in Indian and in Western philology.

It begins by paradoxically stating "not the non-existent existed, nor did the existent exist then" (*nāśatāsīt nānasātāsīt tadānīm*), paralleled in verse 2 by "then not death existed, nor the immortal" (*nāmṛtyūrāsīt amṛtānātārhi*). But already in verse 2 mention is made that there was "breathing without breath, of its own nature, that one" *ānītavātāmsvadhāyātātēkam*. In verse 3, being unfolds, "from great heat (*tapas*) was born that one" (*tāpasaptātmahinājāyātāēkam*). Verse 4 mentions desire (*kāma*) as the primal seed, and the first poet-seers (*kavayas*) who "found the bond of being within non-being with their heart's thought".

It is a "cosmology" hymn, which seeks to explain the origin of creation. Briefly, it describes the chaos that preceded creation, when there was neither death nor immortality. From this chaos, the "One", animated by its own impulse, breathed and came into existence. From the unfathomable depths of water, from the darkness of the cosmic void, emerged this spirit, animated by desire.

It goes on to say how the wise seers are able to perceive the kinship between being and non-being (that are separated merely by a thin line) by searching their heart for wisdom. They see the seminal powers that create the mighty, fertile forces. They see the impulse above the line and strength below.

It ends with a rather startling refrain. "After all, who really knows what happened and who can presume to tell it? What is the origin of creation? For, even the Gods themselves are younger than it. He whether he created it or did not, He who surveys it all from the highest heaven, He knows - or maybe even he does not!"

This end-refrain, where it leaves open the possibility that even the Supreme being may be ignorant of the mystery of creation, makes it rather unique among the creation songs.

AggaññaSutta

The AggaññaSutta has been delivered in order to indicate the origin and evolution of society. A critical study of it reveals that in addition to evolution of society there are many other evolutionary aspects expressed here. There are many philosophical theories such as evolution of beings, Psychological evolution, evolution of food, evolution of the world etc. expounded as Buddhist philosophical thought. Herein attention is devoted to Buddhist view of human evolution.

The radiant bodies that came from Ābhassara world are similar to molecules such as bacteria or they can be considered as one celled tiny creatures. They can float on the water and can fly in the sky. So the *sutta* reveals the fact that, that those kinds of primitive types of beings arrived on the earth on the very first.

Origin of the Universe and life with reference to Aggaññasutta and other discourses

AggaññaSutta in the Pātikavagga in the Dīghanikāya which belongs to the *Suttapiṭaka* can be taken as a summary of the entire process of the Universe. A scientific approach could be found in this *Sutta* related to the origin and existence of the universe. This great *sutta* provides ground for the origin of important subject areas such as Cosmogony, Cosmology, biology, Bio-chemistry, Botany, Geology, Anthropology, Political Science and the emergence of cultural systems.

Hence, *Aggaññasutta* should be quoted as an important *sutta* which should be studied by the authorities of each subject area aforementioned. Western scholars who have studied *Aggaññasutta* have appreciated the *sutta* as a valuable issue. Professor Rhys Davis says that this *sutta* provides information relevant to the origin and the expansion of socio-economic, political and religious organizations and that it is a thought provoking revelation [13]. Professor V.P. Varma has introduced *Aggaññasutta* as one of the revolutionized revelations in the world that explains the origin of the earth and the life on the earth refusing the designer Theory of Almighty creator of the Universe as professed by the Brahmin society of India [14].

The description of scientific evolution of the earth and life is not that much complete but it is described completely in Buddhism. This *sutta* which is one of the great sermons of the Buddha in the Dīghanikāya is very important in solving the unsolved puzzle of scientists who have conducted research on the origin of the earth and the life. There is information that scientists have come closer to the facts which are expressed by the Buddha in relation to the

First era :- “*tenasamayenahotiandhakaroandakaratomisā...*”

Second era :- “*digassaaddhunāacchayenaayamlokoVivattati...*”

Third era :- “*ekodakībhūtamkhopanavasetthāandhakaroandhakāratomisā, na chandimasuriyāpaññāyati...*”

Fourth era :- “*rasa pathaviudakasmīnsamatāni.*”

Fifth era :- “*vivattamanelokeyebhuyyenasattāābhassarakāyāchavitvā itthathamāgacchanti...*”

Post fifth era :- “*digassaaddhuno ..chandimasuriyāPaññāyati. nakkhattatāarakarupani paññāyati*”

In the stark darkness, where the sun, the moon and stars are absent, birth of life took place in this world. At that time there was a chemical soup on the earth. It was like well

evolution of the earth and the life. It is high time to inquire into the philosophical teaching of the Buddha scientifically and argumentatively but not in blind faith. Though the Buddha did His mental research without using any external equipment it is hundred percent correct. It is recommended that this can be used to conduct studies, observations and examinations in a scientific angle about the content of Buddhism related to this topic. Without being partial, there is freedom to inquire anything, according to one's own wish as it is described in the *KālāmaSutta* in *AnguttaraNikāya*.

There are instances where the information found in the researches conducted by the scientists is very closely comparable to what the Lord Buddha has said in *Aggaññasutta*. If those scientists had had the opportunity of knowing the *Aggaññasutta*, definitely it would have been very useful for their research studies. *Aggaññasutta* very clearly depicts the information of the universe authoritatively and reasonably as a scientific philosophy. The origin of the Universe, the earth, the life, and the human socio-organization and all other important sections has evolved in an ascending manner. The following paragraph explains information of the birth of chemical earth (*rasa pathavi*) which appear in the *Aggaññasutta*.

“And to those beings, Vase□□ha, sooner or later after a long time, chemical earth with its chemical concentration was spread out in the primordial hydrosphere. Even as a scum forms on the surface of boiled milk that is cooling, so the earth appeared like this. It became endowed with colour, with odour, with taste; even as well-made ghee or pure butter, so was its colour; even as the flawless (immaculate) honey of the bee, so sweet was it (*“athakhotesamVasetthosattānamkadācīkaraahachidigassaa ddhunoacchayena rasa pathavimudakasmīnsamatānim, seyyathāpināmapāyāso.*

Tathassanibbāyamānassauparisantānakamhotievamevakho sāpāturahosi. SāhosiVannasampannāgandhasampannā rasa

sampannāseyyathāpināmasappisampannamvānavanītam, evamvannāhosi.

Seyyathāpināmakhuddhamadhumanelakamevamassadāhos i...”)[15]

In examining each fact mentioned in this part of *sutta*, it is clear that it contains more scientific information than facts presented by organic chemical scientists, earth scientists or biologists who conducted research on the origin of the earth.

cooked milk rice (*pāyāsa*), butter (*sappi*), ghee (*navanītam*), hive of bees (*anelakamkhuddhamadhu*). It was colourful,

smelling and tasty
(*sāhosivannasampannāgandhasampannā rasa sampannā*).

It is very important to note that it has taken a very long time to happen these actions on a very large hydrosphere. Though the years have not been certainly expressed, the word “after a long time” (*ciramdīghamaddhānam*) is explained millions or billions of years. Physicists, cosmologists and geologists say that the origin of the earth took place 15000 or 20000 million years ago. The length of time has been counted according to various facts. But as mentioned in the *sutta*, the time to form the earth is longer than the time mentioned by the scientists. If the future research reveals the process of formation of the earth it will say that the process has taken place for the millions and billions of years (extremely long period of time).

Accordingly it is clear from the *sutta* (*Aggaññasutta*) that the formation of the chemical earth was a result of a steady and gradual process. J.B.S.Holedao says that prior to the appearance of life on the earth there had been a simple liquid solution containing carbon on the surface of the earth. He named it as the primordial soup. The molecules that contained in the soup have gradually become a complex state. There were the particles in it after mixing and they became adhesive chemical on the earth. Then the biological features have appeared in this primordial soup.

J.C. Bernal of the University of London also says that organic mixtures have maturely formed on the surface of the earth or in the lakes and reservoirs. On the primordial earth a collection of organic chemicals has been formed. And then the formation of the big and small molecules has taken place and after that the beginning of life process has occurred. Apart from these various researches on bio chemistry, says the sun which is 9, 30,000 (Nine hundred thirty thousand) miles away from the earth, has done a great service to create a chemical mixture on the surface of the earth.

The period between these processes is also very important. We clearly know that it takes time to harvest after planting a seed. According to scientists of cytology the cells (The word ‘cell’ is being used to describe the smallest unit of a living organism) which are the basic substances of bearing life also takes time to form themselves. In the development of cells they are seriously affected by the environment. The result of this is the nature of the cells, colour of the cells, and quality of them underwent into changes. So also all the corresponding things which are mentioned in the *sutta* (*Aggaññasutta*) faced to the same situation. It is explained like this.

“Vasethā, one of beings of greedy disposition, asked what this soup is. And he tasted the “*rasa pathavi*” (beings linking with primordial chemical earth at the first time). He thus tasting, becomes suffused with the “*rasa pathavi*”, and craving entered into his mind. And other beings, following his example, tasted the “*rasa pathavi*”. They thus, tasting, became suffused with the chemical earth, then the craving entered into them. Then those beings began to feast on the chemical earth, breaking off lumps of it with their hands (The beings divided the primordial earth soup-The process

of replication). And in doing thereof, the self-luminance of those beings faded away. While their self-luminance faded away, the moon and the sun became visible. Then the stars and constellations became manifest, the months and the half-months, the seasons and the years. Thus, Vasetha, the world evolved again.”

(“*athakhovasetthāaññatarosattololajātiko, ‘ambhokimevamvidambhavissatī’ tīrasampathavimanguliyās āyi. tassarasampathavimanguliyāsāyatoachchādesi, tanhāch assaokkkami. aññe ‘pikhovasetthāsattātassasattassaditthānu gatimāpajjānārasampathavimanguliyāsāyinsu. nesamras ampathavimanguliyāsāyatamachchādesi, tanhācatesamokka mi*”).-*Aggaññasutta*.

How was the being?

The scientist of bio energy still fails to find out where the life has come from? But the Buddha has explained that the life has come from “*Ābassarakāya*” far away place of the universe. According to this *Aggaññasuttasix* features can be found related to those living beings (*satta*), who came to this world.

1. “*Manomayā*” - they are made of mind. Non-physical body.
2. “*Pitibhakkhā*” - feeding on rapture (delight).
3. “*Sayampabhā*” - self luminous.
4. “*antalikkhacarā*” - traveling in the space.
5. “*subhatthāino*” - can be easily nourished.
6. “*Cirandīghamadhānamtīthanti*”- capability of living for a long time.

(*hotikho so vasetthosamayo yam kadāchikarahachidīghassaaddhunoachchayeneayamlokosa mvattati. samvattamānelokeyebhuyenasattābhassarāsamv attanikāhonti. tetatthahontimanomayāpitībhakkhasayampabhāantalikkhacharāsubhatthāyinochiramdīghamaddhānamtī thanti.*

hotikho so vasetthosamayo yam kadāchikarahachidīghassaaddhunoachchayeneayamlokoviv attati. vivattamanelokeyebhuyenasattābhassarakāyāchavit vātīthattamāgachchanti. te ‘dhahontimanomayāpitībhakkhā sayampabhāantalikkhacharāsubhatthāyinochiramdīghamad dhānamtīthanti)-D.N.*Aggaññasutta*.

Those beings were reckoned just as beings only (*sattāsattātevasamkhamgachchanti*) Most of the scientists have examined the origin of life with the help of Biochemistry and Organic Chemistry. As a result of these investigations they have found out that these various objects have come from the other world, and also the scientists have found out asteroids and meteors fell on the earth long time ago. Therefore, it is to be noted here that the scientists also have a doubt related to this topic. Sometimes, they say that the life also has come from the other world. But there are unresolved questions related to the arrival of the life from far beyond the universe as and also to why did they come here? When did it happen and what was the nature of those beings?

The Buddhism gives light to find answers to these questions to a certain extent. Once, the Lord Buddha said that the origin or end of this world or beings is difficult to find (“*anamaggo yambhikkhavesamsāropubbākotinapaññāyati*”

- *samyuttanikāya-Anamataggasutta*). In our sutta (*Aggaññasutta*) it is explained that the beings came from *Abassarakāya* and developed for a long time up to this position. All the beings that came from *Abassarakāya* had a radiant body, without physical body. They came here during its opening period (*vivatta kappā*) and evolved for a very long period until they develop into different kinds of shape, categories as human, animals and birds etc. And then again with the destruction of the earth (*samvatta kappā*) all beings will move to *abhassarakāya* (*abhassarasamvattanikāhonti*) and become radiant bodies. This information gives us very important message that the beings are always living somewhere in this universe and this life will come to an end with the great emancipation.

Lord Buddha presented a model of cosmology wherein the universe expands and contracts over extremely long period of time, this description has been found by some to be consistent with the expanding universe model and Big Bang theory of Sir Fred Hoyle (The Big Bang theory proposes that the universe was once extremely compact, dense, and hot. Some original event, a cosmic explosion called the Big Bang, occurred about 13.7 billion years ago).

Modern science

In Biology (there are two main branches of Biology as Zoology and Botany) it is discussed that the beings are made up of cells. This is the Biological base for any living being. As you all know, a cell is made up of three main parts. The most important component is the nucleus. Then the second important part is the protoplasm, which is made of combining jelly like matter. The third part is the outer membrane (the perimeter). The nucleus is made up of chromosomes (a chromosome is a part of a cell in an animal or plant. it contains genes which determine what characteristic the animal or plant will have). The number of chromosomes in a nucleus is different from species to species. The chromosomes are made of genes. In genes we find DNA and RNA. In other word, it is the chemical content of the nucleus.

Biological approach

The radiant bodies that came from *Abhassara* world are similar to molecules such as bacteria or they can be considered as one celled tiny creatures. They can float on the water and can fly in the sky. So the *sutta* reveals the fact that, that those kinds of primitive types of beings arrived to the earth on the very first. In Biology (there are two main branches of Biology as Zoology and Botany) it is discussed that the beings are made up of cells. This is the Biological base for any living being. As you all know, a cell is made up of three main parts. The most important component is the nucleus. Then the second important part is the protoplasm, which is made of combining jelly like matter. The third part is the outer membrane (the perimeter). The nucleus is made up of chromosomes (a chromosome is a part of a cell in an animal or plant. it contains genes which determine what characteristic the animal or plant will have). The number of chromosomes in a nucleus is different from species to species. The chromosomes are made of genes. In genes we find DNA (Deoxyribonucleic Acid-DNA is an acid in the chromosomes in the centre of the cells of living things. DNA determines the particular structure and function

of every cell and is responsible for characteristics being passed on from parents to their children) and RNA (Ribonucleic Acid-RNA is an acid in the chromosomes of the cells of living things which plays an important part in passing information about protein structure between different cells.). In other word, it is the chemical content of the nucleus.

Biology, Biochemistry and Botany have discovered that this type of cell can have the life. So, there is an opportunity to conclude that the beings mentioned in *Aggaññasutta* are mostly similar to those bacteria or cells (plasma).

Primordial Soup theory is similar to the Buddhist theory

Aleksander Ivanovich Oparin developed one of the first modern theories about the origin of life on the earth. The theory which in 1924 made Oparin famous concerns abiogenesis, the spontaneous generation of life from non-living chemical substances. He believed that conditions on primitive earth were different to those of the present. Oparin suggested that the ancient seas were like a 'primeval soup' which contained many organic compounds. These were created when sunlight, a virtually limitless source of energy, reacted with chemicals in the water. These organic compounds formed the basis of life.

The primordial soup is proved by a Sri Lankan Scientist.

Dr. Cyril Ponnampereuma, an eminent researcher at the university of Maryland, whose career focused on explorations into the origin of life and the "primordial soup" that contained the precursors of life. He set up variations of Miller and Urey's original experiment.

The classic experiment was conducted in 1953 by Dr. Urey and Miller. They assumed the early atmosphere was rich in hydrogen, as that is the most abundant element in the universe. And so they mixed methane and ammonia, which contain hydrogen atoms, with molecular hydrogen and water vapor in a flask. They introduced a continuous electric spark, to provide the energy that might have come from lightning. Out of the resulting chemical reactions came a residue of more complex molecule, including some amino acids. These molecules collected in the water in a lower flask, which simulated the early oceans, and suggested what might have been the hypothetical primordial soup in which living molecules came together.

Having changed the proportion of the elements from the original Urey and Miller slightly, Dr. Ponnampereuma and his team sent first high-energy electrons, then ultraviolet light through the mixture, attempting to recreate the original condition of the earth before life. They succeeded in creating large amount of adenosine triphosphate (ATP), an amino acid that fuels cells. In later experiments with the same concoction of primordial soup, the team was able to create the nucleotides that make up nucleic acid-the building blocks of DNA and RNA.

Life came from outside is proved by a Sri Lankan scientist

Dr. Chandra Wickramasinghe – professor of Applied Mathematic and Astronomy, School of Mathematics, Cardiff University, UK, asserted:

“Life did not start here on the earth but in space”. The theory known as Panspermia – the science that teaches earth and other planets in the universe may have been seeded for life by micro-organism carrying comets. Life did not start in a primordial soup spontaneously here on the earth as believed earlier but it is started 4000 million years ago on comets and travelled through space to the earth. He played a key role in establishing a connection between Astronomy and Biology. His work in 1980’s showed for the first time that cosmic dust had properties that resembled the properties of living material and their degradation products. The concept of life being a cosmic phenomenon is supported by Space Science, Geology and Biology. In this context life on the earth resulted from the introduction of bacteria from comets, and the subsequent evolution of life required the continuing input of genes from comets. Viable bacteria are of cosmic origin. They were present already in the material from which the solar system condensed and their number was then topped up substantially by replication in cometary material. Thus the impact of cometary material would have brought them to the earth. This idea of life being a cosmic phenomenon is fully in tune with the Buddhist teaching.

Conclusion

According to this critical study it is clear that the life on this earth was originated with the help of chemical evolution and new arrival of beings from outside world. Aerial beings settled on this earth in the environmental background of the earth. Then they were spread in each parts of this world. Beings are living in this universe for thousands of years. They are moving to other places due to their karmic force.

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