

Vedic Science viz - a - viz Modern Science

Prof. C.P. Trivedi



अग्निमीळे पुरोहितं यज्ञस्य देवमृत्विजम्। होतारं रत्नधातमम्॥१॥

I invoke the *Agni*-the single unified force, he is the *Priest*, *Deva*, Sacrificer, and Reciter of the *S,*—*Yajna*, He is the treasure of jewels.

Foreword

The Vedas are oldest literary monuments of the world. As such they represent common heritage of the mankind on the earth. Prof. C.P. Trivedi has entered in this field as an environmental scientist and gone into the depth of various traditions of Indian theology. With his background of the Indian culture and modern science, he has interpreted the Vedic hymns in chronological order with depth of Vedic knowledge. The book Vedic Science viz a viz Modern Science is the effort

of his great devotion to the subject with firm scientific background. He has traced all the scientific theories of the modern Science in the Vedic hymns. Previously we have heard from the mouth of Maharshi Sri Aurobindo and Maharshi Dayanand that the Vedas are book of true Science. Prof Trivedi with his great devotion has proved the same with scientific approach. The Vedic Science is much more advanced than our present day Science. It should be brought in light in its proper way. I congratulate Prof. Trivedi for his outstanding contribution as a professor and Scientist. I hope that the scholars and the modern Scientists will take inspiration from the Book Vedic Science viz – viz Modern Science.

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Prof. C.P. Trivedi

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I. Preface

"What can be more tedious than the Veda, and yet what can be more interesting, if once we know that it is the first word spoken by the Aryan man?" These are words of F. Max Muller, who has the credit to introduce Vedas in the world. Now it is unanimously accepted that Vedas are oldest literary monuments of the world, as such they represent common heritage of the mankind on the earth. With the establishment of Royal Asiatic Society in Calcutta in the last decade of the eighteenth century, Vedas found third way to the eastern world. Most of the scholars like Max Müller, Wilson, and Griffith etc have followed Great scholiast S̥āyan's commentary. By twentieth century several translations of Vedas followed each other in English, French and German. It has drawn the attention of the various disciplines, the philologists, lexicons, Philosophy and Science. It has been considered that S̥āyan's commentary deals only with theology as practised in India. Accordingly, the scholars have tried to interpret the Vedas. Although, the western scholars have done a great job for Indian culture and history, but were having their own limitations regarding Indian culture. They have interpreted the available records in their own way with their western knowledge in the background, and no one has deal the subject in terms of science. Although, some scholars have tried to trace the science in the Vedas, but the base of the scientific aspects of the Vedas remain untouched.

Prof. C.P. Trivedi has entered in this field as an environmental scientist and gone into the depth of various traditions of Indian theology. With this background of the Indian culture and modern science, he has interpreted the Vedic hymns in chronological order with depth of Vedic knowledge. The book **Vedic Science viz a viz Modern Science** is the effort of his devotion to the subject with firm scientific background.

As a scientist, first he has searched the key for interpretation of the Vedic language, with scientific terminology of the Vedic

deities. Accordingly he has traced all the modern scientific theories and the principles in the Vedic metaphors. Prof. Trivedi has pointed out that Vedic knowledge has been revealed in metaphors and riddles, and is fully in accordance with the modern science. Going ahead, he has traced some untouched problems of the modern science. The origin of life and consciousness is one such problem on which the scientists are working day and night. Prof. Trivedi with his deep insight has traced the scientific theory, regarding the origin of life and consciousness in terms of modern biology. If it is accepted, and Prof. Trivedi work ahead, then after the work of Great SËyaþËcËËrya, and Max Mñller, it will be a work of similar nature in the series.

The living-beings exhibit their functions of life cycle under the cosmic principles. During life the three energies shows their impact in orderly sequence, under cosmic principles and remain unaffected, it has been indicated by त्रयः केशिनं ऋतुया वि चक्षते Three with long tresses show in ordered season

त्रयः केशिनं ऋतुया वि चक्षते संवत्सरे वर्षत एक एषाम्।

विश्वमेको अग्निं चष्टे शचीभिर्वाजिरेकस्य ददृशे न रूपम्॥४४॥

Three with long tresses show in ordered season. One of them sheareth when the year is ended. One with his powers the universe regardeth: of one the sweep is seen, but his figure. y g. 1-164-44

. The synthesis and disintegration in the living cell body is controlled by the **electromagnetic bond energy**, during the life it synthesizes the cellular body and the same bond energy disintegrates the body after death.

One with his powers the universe regardeth:

One regardeth from all sides, it is the **chemical energy** of the food, which enhance the metabolic reactions in the body and protect the body from all sides during the life time.

Of one the sweep is seen, but his figure.

The life energy-consciousness appears with birth and disappears with end of life cycle.

The life energy- consciousness in the body shows motion but his figure is not seen.

The three energies shows their impact in orderly sequence

under cosmic principles, it has been indicated.

The knowledge incorporated in the Vedic hymns reflect that the Vedic *ṛ-īs* are head of the Institutions of higher studies, they have compiled the interdisciplinary knowledge in the metaphors, just like teacher teach to his students and examine them with asking answers of the riddles.

All *ṛ-īs* have traced the origin and evolution of the creation from the fundamental energy or we can say from single unified force as suggested by some scientists, with scientific principles in the beginning of the hymns, and gone into the depth of their subject concern gradually with metaphors and praise prayers by invoking the deities simultaneously.

Before going deep in to the book, we should have a look on the Vedic knowledge of the creation and its similarity with our modern knowledge of the creation.

The origin and evolution of the creation has been traced from the fundamental energy. How the creation came in to the existence? Who has created it? It is the quest of the human mind from very beginning of the civilisation on the earth. It has been explained that the creation has a beginning, and it has developed at its own under space, time and the environmental conditions, through a gradual process of evolution, from a fundamental energy with energy transformation. *Puru-a sÊkta*, ṽ g.10-90

The height of the Vedic knowledge has been reflected in the origin of the Solar system, for which, the scientists have launched the Geneva Experiment - 'The Large Hydron Colloider Machine'. Prof. Trivedi has quoted a hymn, which has the answer of the origin of the solar system. On the same line, he has quoted a hymn, it reflect the contemporary problem of nuclear threat, and nuclear device to safeguard from the nuclear weapons. It requires a serious attention, that the Vedic hymns should be analysed properly by the scientists.

Photosynthesis² The transformation of electromagnetic energy into the chemical energy is the most exciting discovery in the history of life on the earth, synonym to our modern knowledge. The

whole process has been described in the wedding hymn ÿ g.10-85: under “wedding of SÊryÊ’s daughter Aryaman” It has been indicated through a riddle ÿ g. 1-164-7

इह ब्रवीतु य ईमङ्ग वेदास्य वामस्य निहितं पदं वेः।

शीर्ष्णः क्षीरं दुहते गवो अस्य वृद्धिं वसाना उदुक् पदापुः॥

Let him who truly knows (here) tell the set down track of this pleasant bird; the kine extract milk from his head; clothing themselves in a wrap, they drunk water with the foot ÿ g. 1-164-7

The pleasant bird is sun, from where the kine extract milk from his head. It indicates about the visible solar rays (VIBGYOR), which are coming on the earth’s surface from the head of the sun. These rays have been trapped by the plants for the **photosynthesis**; they act as milk-food (*k-Îra*) through nourishment for the living-beings. Hence the visible rays of the sun have been compared with the milk and plant as kine. The absorption of water by the green plants has been indicated through the drinking of water with the foot, the foot represents root system ÿ g.1-164-7

The photosynthesis is a process, during which the green plants synthesize glucose as food material from the atmospheric carbon di oxide and water in the presence of chlorophyll and light. During this process the transformation of the light energy in to the chemical energy is there, which is the source of life and food for the living organisms. Today it is also a fact that all the complex organic substances are the products of the glucose metabolism in side the cell. It is a unique event in the history of origin of life on the earth. It is the only source of the chemical energy and carbon skeleton of the living beings on the earth.

The process of the photosynthesis has been described through the metaphor of the marriage ceremony in the wedding hymns of the ÿ gveda and Atharvaveda.

The marriage is an important event in the life of a human-being. Through the marriage a young girl under go a transformation. She enters in to a new house as a wife with her husband so as to produce off-springs. In the same way transformation of the light energy in to the chemical energy through photosynthesis lead it to

produce glucose and the products of the glucose are just like its off-springs. Through the ceremonial process and the wedding hymns of the marriage, the whole process of the photosynthesis has been described in a symbolic fashion metaphorically. It is synonym to our modern knowledge. As we know today, through the achievements of the modern science in the field of Biophysics.

In actual sense war and battle are symbolic metaphors to express the molecular reactions, to express the actions and interactions.

The *Indra* represents electricity and demons means obstacle, it has been indicated that black spots on the sun's surface are the obstacles in the luminosity of the sun, due to the charge of the *Indra*-electrostatic energy with the formation of electromagnetic energy the black spots have been destroyed. It has been expressed symbolically to indicate the sun spots. The existence of the sun spots on the sun's surface in *Rohita sĒkta* of the Atharvaveda have been indicated by white sons of black mother symbolically due to the solar flares coming out from the sun spots with the formation of electromagnetic energy.

The battle described between the *Arya and the black demons-DasyĒ* is a symbolic expression for the removal of the obstacle during the natural phenomena. The *Arya* means well cultured- good system and the black demon represent the obstacle during the reaction.

The essence of the creation has been described as the four horned buffalo, where four horns are symbolic expression for the four dimensional structure of the atom, where the three fundamental particles- electron, proton, neutron generates the magnetic energy, due to the spinning of the vibratory electrons around the nucleus. It is the base or essence of the creation. The essence has been termed as *Gh, ta*-clarified butter, it means the essence of the buffalo milk is ghee, in the same fashion the four dimensional structure of the Atom has the essence of the creation.

The structure of the DNA has been expressed through the buffalo, which has four horns four bases with two head- two strips and three legs represents triplet code of three bases known as

genetic code ý g. 4-58

In the funeral hymns it has been said that *Yama's* two brindled dogs with four eyes watch the path of man. *The Yama* represents chromosome with the information of life and death. It consist of DNA, the two strips of the DNA have been expressed symbolically through two dogs and the four eyes represents four bases of the DNA, which record the deeds of a person concern in its language code of base sequence. It has been expressed by saying that *Yama's* two brindled dogs with four eyes watch the path of man, which will have repercussions in the future birth. It means it is an indication towards the fact that DNA and its language code is immortal ý g.10-10

Prof. Trivedi has used freedom of judgement with scientific background without any prejudice, it can explore new facts about the Indian culture and a guideline for humanity, as he has discussed in the last chapter about the aim of life on the earth. The Vedas, are the book of Science, accordingly, the Author has dedicated the work to the Scientists, indicating the fact that the Vedas, are not only the literary fancy, the scientists can grasp the words, and metaphors, in a better way, in their proper perspective.

Prof. Trivedi has done a Great job, with full devotion. I bow to our ancient *Path finders*.

Manoj shrivastava

II. A Word from the Author

The modern civilization on the earth is very much influenced by the achievements of the modern science in the different fields. It is a common faith that such a development of the science on the earth has enlightened the people on the earth first time. Accordingly the common people are dwelling in between the Modern Science and Spiritualism and the Religion.

They are unaware about the Aim of life on the earth. It is the main cause of the unrest and violence on the earth. The earth has faced the similar situation earlier too, it has been reflected in the hymn of 4th book a speech of a seer in the council of world scholars has been given, where, to safeguard the earth from probable nuclear threat has been indicated, the meeting was ended without conclusion, accordingly the seer has expressed these words.

Un satisfied, with speech devoid of vigour, scanty and frivolous and inconclusive,

Where-fore do they address thee here, O Agni? Let these who have no weapons suffer sorrow.¹⁴

The speaker was unsatisfied with the attitude of the councillors, they could not draw any conclusion, and all were divided on the issue of peace on the earth. The threat of nuclear war has been reflected in his speech. Accordingly, he has addressed *Agni? Let these who have no weapons suffer sorrow*. It indicates that some countries may have developed safety device from nuclear threat, those who have no weapons of safety, they are likely to suffer.

In this reference, we may search for the protective nuclear device, to safeguard our-selves from nuclear threat, as indicated in the speech. The contemporary Vedic civilization with their achievements has enlightened the common people so as to guide them in the day to day life.

The Vedic seers with their skill and labour have preserved their knowledge of the creation in the Vedic hymns, so as to transfer it for the succeeding generations for the welfare of the society, with

their great skill it has reached to us without break. It is our humble duty to interpret them in their proper way for the welfare of the society.

To interpret the Vedic hymns has been a great puzzle for the scholars. It is due the fact that the scholars were not acquainted with the Vedic scientific terminology and height of the Vedic science. The Vedic science in the Vedic hymns has its beginning, with discovery of single unified force of the creation. The same has been recognised in the modern science. . The insight in to these scriptures was to trace the mystery of origin of life on the earth. I have got the success in the scientific interpretation of Vedic language and I was very much surprise to trace all the modern principles and theories of creation in the Vedic texts. The Vedic hymns have been compiled by different *ṛ̥ṣ̥-is*. The Vedic books are supposed to be the family books of the *ṛ̥ṣ̥-is*. Looking to the depth of knowledge in the Vedic hymns it seems that the *ṛ̥ṣ̥-is* of the hymns are the subject expert and head of the contemporary institutes of knowledge.

They have compiled the knowledge in the Vedic hymns keeping in view the students of their institutes. The metaphoric knowledge of the Vedic hymns moves around the basic truth and cosmic principles of the creation. The different subject experts have used their skill and wisdom with interdisciplinary approach, with different metaphors.

The *ṛ̥ṣ̥-is* in the beginning of Vedic hymns have traced origin and evolution of the creation in a symbolic way from the fundamental energy. It is an essential part of the teaching to start the subject from its original source and gradually enter into the depth of the subject. Accordingly, the way of expression and knowledge is the same but with different metaphors, which lead to the depth of subject concern with praise prayers in the background, where words indicate the phenomenon at micro level. All *ṛ̥ṣ̥-is* have used the same terminology of the deities with different metaphoric expressions, indicating the origin of solar system and sun as the main source of energy. The metaphors will look like 'headless and footless', without the concern knowledge with reference to the

context. They have indicated the origin of the creation and nature from the fundamental energy. The generation of charged particles is the first step. Accordingly the solar system, from nebula came into the existence. The earth became the centre for the origin of life. The formation of the atmospheric layers, generation of ions in the ionosphere and formation of ozone layer in the atmosphere are the essential factor for the origin of life.

The white visible-light with seven rays and formation of atom have constituted the base of creation. The generation of the magnetic energy in the atom and electromagnetic bond energy is the main cause of creation. The major elements of the creation are Carbon, Hydrogen and Oxygen. They have been termed, as *MÈtri,va*, *PavmÈn*, and *Indu* respectively. The Raka is term for Nitrogen. The nature feed the creation just like mother, under the nature and the natural forces.

The white visible light with Red wavelength has got the entry into the earth's atmosphere. With time carbon dioxide and water with the help of *Bh, gu* converted the Red wavelength of light into the chemical-energy. The *A, vins*- nucleotide pairs of DNA stimulated the process of evolution. The DNA with four bases is a universal genetic material. It is the base of living-beings with generation of life energy in the primitive prokaryotic cell.

They have summarise the thoughts, with focus on the single unified force as the creator, the atom is the building block of the creation, the DNA with four base is the building block of the living-beings, the life energy, the chemical energy of photosynthesis, the electromagnetic bond energy, with impact of VÈc- thought energy are playing, their role under the cosmic principles.

These thoughts have been woven in the metaphors, so as to teach the students to acquaint them with phenomena and reactions in the nature at micro level. Just like a teacher teach to his students and examine them with asking answers of the riddles. It is the theme of the hymns, which move forward gradually into the depth of the subject concern.

As reflected in the book four *ṛi Vamdeo son of Gotam* belongs to school of Biology, where he has traced the origin and evolution of the creation with reference to the origin of life and consciousness, and gone into the depth of biology, exploring the *ṛbhu* as celestial race.

Similarly the *ṛi Dirghtamas* belongs to the school of cosmic science. He has traced the origin and evolution of the creation with reference to the solar system and seasonal variation in the system, and how the system is working. He has described it in the book one from hymns 150 to 175.

The scientific facts, which have been revealed in the Vedic hymns, are in tune with the modern science at present. The higher Vedic knowledge, just like, the consciousness, the role of thought energy in life, the words and pictures are thought stimulators, they stimulate the language of DNA. These facts are waiting for the establishment in the modern science. Hence to interpret Vedic hymns one must have interdisciplinary approach with knowledge of the creation system.

Today with the discovery of electro- weak force by Abdus Salam, Sheldon Glashaw and Steven Weinsberg, three of the five forces in nature (electricity, magnetism and weak – interaction force) have been unified. The fourth force, the strong interaction force that binds the nucleus inside the atom is expected to be unified, as it is claimed today by some scientists.

The successful experiment on Bell's theorem in 1972 by Clauser, Freedman, David Böehm, and Alain Aspect in 1985, science discovered a synchronistic non- locality, where at the base of matter "non – local" causes operate and similar particles at a space like distance or some how "instantaneously interconnected" without the connection of any signal like light or electromagnetic waves.

Now the scientists have realized the notion of 'Holistic paradigm' in the light of recent quantum theory, which leads to unbroken wholeness of the universe. The same echo is coming from the Vedic science, where the one unified force has been imagined metaphorically as *Yak-a*.

महद् युक्षं भुवनस्य मध्ये तपसि क्रान्तं सलिलस्य पृष्ठे।

तस्मिञ्छ्रयन्ते य उ के च देवा वृक्षस्य स्कन्धः परित इव शाखाः॥

A great monster' (yak-a) in the midst of the creation (bhuvana) strode? (krĒnta) in penace on the back of the sea- in it are set(cri) whatever gods there are like the branches of a tree roundabout the trunk Atharvaveda 10-7-38

It has been indicated through the metaphor of the tree that all the components of the nature have evolved from the fundamental energy, and all are linked with him like the branches of a tree. He is in the middle of the creation. It indicates symbolically that all the components of the creation and nature are interconnected with fundamental energy, he is in the middle of the centre just like a *Yak-a*.

Now we have realized that the building block of the materialistic substances is atom, in the same fashion the building block of the living-beings is cell.

. The charged particles with their opposite charges bind together to produce atoms, atoms consists of subatomic units-electron, proton and neutron. The electrons are extremely light having cloud like density of mass energy with a negative electric charge, protons are much larger in mass than electron and have a positive charge, neutron have a mass energy equal to that of proton and are electrically neutral. Although other types of sub atomic particles have also been identified, but the properties of atoms and their ability to react chemically can be explained on the basis of these three elementary particles, which constitute the base of the whole nature.

In an atom positively charged protons and neutrons constitute the nucleus, around which vibrating clouds of negatively charged electrons move in elliptical orbits, due to the vibratory movements and spin of electrons, magnetic energy is generated. The magnetic energy, with the electrostatic force of the nucleus produces the electromagnetic energy, which binds the atoms of similar nature. The atoms of different elements can produce diatomic molecules, even poly atomic complex molecules and chains of thousand of atoms like RNA and DNA may have produced. Which are the

products of chemical interactions of the outermost electrons, to yield chemical bond or a covalent bond, when two atoms share electrons or ionic bond, when electrons are transferred from the atom to atom. It is the electromagnetic energy, which initiate the formation of bonds. Through these bonds the electromagnetic energy has maintained its continuity in atoms, molecules, substances and living-beings. It has been explained metaphorically through both the father and both the son.

उतैषां पितोत वा पुत्र एषामुतैषां ज्ये उत वा कनिः।

एको ह देवो मनसि प्रविष्टः प्रथमो जातः स उ गर्भेऽ अन्तः॥

Both their father are also their son; both the chief are also the meanest (Kani—ha) of them; the one god, who has entered in to the mind, born the first, and he within the womb Ath. 10-8-28

It has been expressed that the fundamental life energy-consciousness has generated first in the atoms and in the womb. It has been termed as first born, than the fundamental energy proliferate along with the electrostatic energy of the nucleus as electromagnetic bond energy. They together have been termed as both the father and their son metaphorically. The electromagnetic energy is present in the universe and at the micro level in the atom and the cell. Hence it has been termed as chief as well as minute (*kani—ha*).

Now we know the fact that the electromagnetic energy bond energy is responsible for the synthesis and degradation of the matter in the nature.

The living-beings exhibit their functions of life cycle under the cosmic principles. During life the three energies, shows their impact in orderly sequence under cosmic principles and remain unaffected, it has been indicated by त्रयः केशिन ऋतुथा वि चक्षते Three with long tresses show in ordered season

त्रयः केशिन ऋतुथा वि चक्षते संवत्सरे वपत एक एषाम्।

विश्वमेको अग्नि चष्टे शचीभिर्घ्राजिरेकस्य ददृशे न रूपम्॥४४॥

Three with long tresses show in ordered season. One of them sheareth when the year is ended. One with his powers the universe

regardeth: of one the sweep is seen, but his figure. y g. 1-164-44

. The synthesis and disintegration in the living cell body is controlled by the **electromagnetic bond energy**, during the life it synthesizes the cellular body and the same disintegrate the body after death.

One with his powers the universe regardeth:

One regardeth from all sides, it is the **chemical energy** of the food, which enhance the metabolic reactions in the body and protect the body from all sides during the life time.

Of one the sweep is seen, but his figure.

The life energy-consciousness appears with birth and disappears with end of life cycle.

The life energy- consciousness in the body shows motion but his figure is not seen.

The three energies shows their impact in orderly sequence under cosmic principles, it has been indicated.

The experiences of the seers have been compiled in the Vedas, looking to the probable ecological, natural disaster, or nuclear threat. Where, the y gveda is the first, and other Vedas have taken their shape with time.

Accordingly with my knowledge of the modern science I have devoted my services for the interpretation of the Vedic hymns. The Vedic knowledge is vis-à-vis modern science and more advance than the modern science. We can extract much more for the global cooperation and world peace as indicated in the *Vasudhaiv Kutumbakam*- the whole world is our family. It can guide the common people about the aim of life and their duty on the earth, towards the conservation of the nature, and the existence of life on the earth. The available records till today, shows that the earth is only planet in the cosmos, which has life on its surface.

The European scholars have done a great service of India with extensive work on the Indian culture and ancient Vedic texts. It has established India as the centre of world heritage, but they were unable to interpret the language of the Vedic hymns and the pictographic script of Indus Valley seals. It has generated a quest to decipher the Vedic language. The seeds of quest were sown in my

early child hood, when I have decided at my own to take science as a subject at school, but simultaneously visiting the temple of lord Mahakal at Ujjain with my mother regularly. It was a contradictory in respect of science and a matter of joke for my fellow students. It has generated a quest first time to search the scientific facts behind India's cultural heritage. With time, with lord Mahakal's blessings I have entered in to the field of science as an Environmental scientist, and gone in to the depth of various religious scriptures and Vedic texts

The Vedic texts and Indus Valley seals represent contemporary civilization and their knowledge of creation. It reflects that Vedic hymns have been compiled after the contemporary discovery of the single unified force. The same has been explained metaphorically.

During the long period of 28 years of research in the field I have been assisted by many Institutes, teachers, friends, colleagues and my kith and kin. I feel obliged to them, with my little knowledge and worldly limitations, I have tried my best to interpret the symbols. If there is any mistake or short coming in the book. I feel personally sorry for them.

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1. Interpretation of Vedic Language

The major obstacle in the decipherment of the Harappa and Mohenjo-daro seals is undecipherable Vedic language code. The key of the Vedic language code is in the modern science and on the same line the Indus Valley seals can be deciphered. The Decipherment of the Indus Valley Vedic culture seals can throw a new light on the Indus Valley Vedic culture. The phonetic vibrations of the Vedic hymns in the background of the pictographic symbols explore the knowledge hidden in the symbols. The Vedas have been considered as the oldest literary record of human civilization on the earth. As such they represent common heritage of human society on the earth. The interpretation of the Vedic hymns has been the great puzzle for the scholars. The authentic tradition of understanding the Vedic samhitas can be discerned to have been available at least as far back as the Nirukta of Yāska. The Yāska holds a prominent position among the commentators. He has given his commentary in *Nirukta*, he has used *Nighanṭu* for explanation of the words. The ṛgvedic deities have been described in the *SarvĀnukramaṅgī* of Kātyāyana, It is an index to the ṛgvedic mantras, *Nīlīmāṅjarī* another commentary provides an idea about the social customs and tendencies of the ṛgvedic period.

The emphasis laid in *mīmāṃsā* text on the unbroken tradition of Vedic study, refers apparently only to the tradition of memorizing and reciting the Vedas. The language of the Vedas is a coded language. By the time of Yāska the Vedic hymns had become significantly unintelligible and a number of views have been formulated in relation to their interpretation. In the 5th century B.C. Panini carefully records the principles of Vedic grammar. In the 14th century Śaṅkara attempted the renaissance of the Vedic tradition, he takes it for granted that Vedic hymns are to be understood strictly in the context of Vedic ritual. In the 19th century the publication of Max Müller's translation with Śaṅkara's

commentary on the ųgveda samhitas has open a new vista as a modern attempt to understand Vedas. The resources of comparative philology, comparative mythology and religion and of comparative history have been employed by a host of scholars all over the world for more than a century to discover the true meaning of the Veda and its religion. But, the quest to understand the Vedic language remains as it is due to the ambiguity of the Vedic hymns to allow a diversity of interpretation so as to trace their significance. Nevertheless, unresolved controversies continue to exist and most of the difficult Vedic hymns have been considered unintelligible, because scholars were unable to draw any conclusion from them. There is no doubt that our understanding of the Vedic language has made a considerable progress, but there is no consensus among the scholars. There must be an organized effort for interpretation and propagation of the Vedas in its true sense with the help of modern knowledge. It is a fact that without thorough knowledge of the creation, Vedic metaphors are hard to understand. With the development of the modern science and technology, we have touched the Vedic height up to some extent. Hence in the light of modern knowledge now it is possible to understand the Vedic hymns.

No ancient or modern lexicon has interpreted the Vedic hymns in terms of science, because it was unimaginable. The modern scientific theories and the principles have been discovered only during the last two century surprisingly they have been incorporated in the Vedic hymns. It suggests that now we are more near to the Vedic knowledge. The tragedy before modern scholars is that oriental scholars are not acquainted or unaware with the principles and theories of modern science, similarly the modern scientists are not acquainted or unaware with the Vedic literature and Sanskrit, so far as there knowledge of the Vedic literature and Sanskrit is concern.

The Vedic literature is in the form of metaphors and riddles, it indicates towards the phenomena of the nature and the natural reactions going on in the nature. With the knowledge of the modern science the indications can be understood. Hence for the

interpretation of the indications one must know the Vedic terminology in its proper way, because Vedic terminology with myths of mythology is a product of long history of climatic conditions. The Vedic deities, they actually represent either the component of nature or natural phenomena. The anthropomorphic nature of the deities and their figurative description with personification is a way of expression of the thoughts about the natural phenomena. Although without reference and the knowledge of the related phenomena the metaphors are hard to understand, where words are only the coded indicators. As such with an aim to decode the Vedic metaphors a scientific terminology of the Vedic deities has been prepared to interpret the Vedic hymns and metaphors in a chronological order with depth of the Vedic knowledge. In the same manner the riddles can also be solved, where words are only coded indicators and the unexplainable metaphors explore their true meaning.

The analysis of the metaphors reveals the fact that Vedic science was much more advanced than our modern science and we can extract much more for the welfare of the society. Because if we interpret the Vedic hymns scientifically in the light of modern science up to the level where we stand at present, than in a similar sequence we will get the answer of the theories about which we are still in dark. For example at present we do not know the exact mechanism of origin of life on the earth and role of consciousness in the life, similarly we have no knowledge about the rebirth cycle, although we know about the role of DNA and biogeochemical cycles in the nature. It is worth to note that without having the clue of origin of life we can not satisfy the religious fundamentalism in the world only after tracing the origin of life on the earth. We can also trace than the aim of life on the earth under the cycle of rebirth and death as indicated in the Vedic hymns.

In the history, with the British rule in India the discovery of ancient India has taken its shape with Vedic literature in the background. It became the most consuming intellectual project to trace the history of ancient India. The Archaeologists, linguists, anthropologists, historians and philologists devoted their services to

trace the background of uncivilized slave Indian culture with an aim to rule over India. The western scholars have considered the Vedas as religious scriptures and tried to trace history of the religious thoughts of the primitive society on the earth. They became most excited with the discovery of Sanskrit and its correlation with European languages. The linguists and comparative philology has further intensified the problem. It is all due to the misinterpretation of the Vedas in wrong direction. There is no history or religion in the Vedas. On the contrary, they reveal the scientific truth of the creation for which the modern scientists are working in a systematic manner. They have no answers about many secrets of the creation. The unanswered problems can be solved with the help of Vedic knowledge and they can be tested scientifically.

With the scientific interpretation of the Vedic metaphors, the decipherment of the Indus Valley seals is possible. For which India and Indian culture were awaiting since long. It will give new dimension to the Indian culture in the world. It will also reveal the fact that once in the history Vedic culture flourished on the earth, without it such scientific work is not possible, it is also not possible that through meditation in the state of trance, such knowledge can be explored? It is this wrong notion, which has kept the Vedic texts in the category of religious scriptures. The Vedas have been preserved through a complicated and highly strenuous oral tradition. With the great skill and labour of the Vedic people, it has reached to us without break even after many thousand years. It is our humble duty as a human-being to interpret them in their proper sequence for the welfare of the society, as indicated in ĳ g.10-72-1

दे॒वानां॑ नु व॒यं जा॒ना प्र वो॑चाम वि॒प॒न्य॒या।

उ॒क्थे॑षु॒ श॒स्य॒म॒निषु॑ यः प॒श्या॒दु॒त्तरे॑ यु॒गे॥

Let us with tuneful skill proclaim these generations of the Gods, that one may see them when these hymns are chanted in a future age ĳ g.10-72 1.

Symbolic Anthropomorphic Conversation

The tragedy before modern scholars is that oriental scholars are not acquainted or unaware with the principles and theories of modern

science. Similarly is the case with modern scientists, so far as there knowledge of the Vedic literature and Sanskrit is concern.

The Vedic literature is in the form of metaphors and riddles, it indicates towards the phenomena of the nature and the natural reactions going on in the nature. With the knowledge of the modern science the indications can be understood. Hence for the interpretation of the indications one must know the Vedic terminology in its proper way, because Vedic terminology with myths of mythology is a product of long history of climatic conditions. The Vedic deities, they actually represent either the component of nature or natural phenomena. The anthropomorphic nature of the deities and their figurative description with personification is a way of expression of the thoughts about the natural phenomena at molecular level. The battle between the two forces is a symbolic expression of forces and counter forces involved in the reaction at molecular level. Although without reference and the knowledge of the related phenomena the metaphors are hard to understand, where words are only the coded indicators. As such with an aim to decode the Vedic metaphors a scientific terminology of the Vedic deities has been prepared to interpret the Vedic hymns and metaphors in a chronological order with depth of the Vedic knowledge. In the same manner the riddles can also be solved, where words are only coded indicators and the unexplainable metaphors **explore** their true meaning.

The knowledge in the metaphors has been expressed in an anthropomorphic manner through dialogue between the two or more components involved in the reaction or phenomena at molecular level. At some places the natural factor him self reveal the truth about the fact in an anthropomorphic manner. For example, it has been expressed that the creation is sustained and held up by fundamental energy.

The answer has been given that the creation is rested upon unborn's navel, wherein abide all things existing. He is in the middle of the creation just like a great monster- *Yak-a*. All are set in him like the branches of a tree. The same truth has been revealed symbolically through the mouth of fundamental energy in an

anthropomorphic manner- *with the mind's eye I (Spirit) think that I (Fundamental energy) behold them who first performed this sacrificial worship.*⁶

It is possible due to the fact that the human body represents a microcosm in side a macrocosm and the body is complete in it self.

Similarly the presence of ozone layer in the atmosphere has been revealed by the life it self in an anthropomorphic manner-

Dyaus is my Father my begetter: kinship is here. This great earth is my kin and Mother. Between the wide-spread world-halves is the birth-place: the Father laid the Daughter's germ within it. yjg. 1-164-33

The life on the earth is a puzzle. The truth has been explained through the mouth of the life in an anthropomorphic manner symbolically.” *The sun in the sky is my father, who is the cause of life, earth is my mother, who nourish me and my birth place is in between the world halves, (where ozone layer absorbs the toxic ultra violet rays).*”It means the life has its origin after the formation of the Ozone layer in the atmosphere.

In the yj bhu sÊkta the facts about origin of life has been revealed in an anthropomorphic manner by addressing the yj bhus and through conversation between different yj bhus symbolically.

The dialogue between *Indra-Marut and Agastya* yjg.1-165, symbolically it reveals the atmospheric reaction for rainfall.

The dialogue between *Indra- and Agastya* yjg.1-70, symbolically the conversation reveal the importance of electromagnetic energy in the atmospheric reactions.

The dialogue between *Agastya and Lopamudra* yjg.1-79, it indicate role of passion in life.

The dialogue between *Vi,ÿÈmitra and rivers -VipÈt and futudrĪ* yjg. 3-33, it indicates the construction of Dams for irrigation on the rivers.

The dialogue between *Indra - IndrÈĪ and V,Èkapi*, it reveals the importance of chemical energy in the life of human beings. The

Indra represent the chemical energy, when the living- body in active with ageing and metabolism seized. It means the body is unable to accept the chemical energy of food, accordingly body became dead, just like dead wood. The *Vṛkṣa* represents living-being and Indra represent Electricity in the body, the function of the body depends on the generation of electromagnetic energy in the body with metabolic reactions, hence it has been said that Indra is supreme.

Aśvā sṛṣṭa ṽg.10-34, it reveals the human psychology in life and importance of ethics in life with fate of a gambler.

The dialogue between *Paṇḍita* and *Saramā* ṽg.10-108, the conversation is symbolic, which reveal the importance of solar wind - *Saramā*, She is the messenger of *Indra* and mother of *Tvaṣṭā*—*Ṛṣi*, the cow is metaphor for the food material in the living beings, which is synthesized by the *Tvaṣṭā-DNA*, the *Paṇḍita* symbolically represent the obstacle in the formation of ions of the bases of the DNA.

Bhikṣu sṛṣṭa (*Ṛṣigirasa speaker*) ṽg.10-117, it reveals importance of generosity and fate of miser in social life.

2. The Natural Deities

I. Aditi - Nature

The natural components have been invoked as the deities and nature as goddess *Aditi*.

Aditi is the mother of a small group of Gods known as *Ādityas*, of whom *Varuṇa* as the chief. In the cosmogony hymn *Dak-a* is said to have sprung from *Aditi* and *Aditi* from *Dak-a* (y g. 10-72-4), this reciprocal relationship indicates that in the primeval condition of the creation, the fundamental charged particles constitutes the micro nature from which *Dak-a* the solar nebula came in to the existence, from nebula the solar system and the nature came in to the existence.

Aditi - (micro nature) - Nebula - Solar system - *Aditi* (infinite nature)

Aditi's eight sons are eight planets of the solar system. *Vasus* are related with the natural forces through which nature is working.

Aditi is associated with all the natural components. The natural components have been described as deities and have been invoked as God, which give a different look on these deities. But if we concentrate with deep insight on these natural deities than their connection with functions of the nature gets almost clear. There are about thirty three gods as described in the y gveda, which can be grouped in to three, belonging to the three divisions of the universe earth, atmosphere and sky.

Terrestrial deities are earth, *Agni* and *Soma*.

Atmospheric deities are *Indra*, *Ap̥̌m/nap̐̌t̐̌*, *Rudra*, *Maruts*, - Air, *Parjanya* and *Apas* - the waters.

Deities of sky, are *Dyaus*, sun and solar phenomena related with the sun, such as *Varuṇa*, *Mitra*, *Savit̐̌*, *P̐̌-an*, the A₁*vins* and the Goddesses *U-as*, *Dawn* and *Ratri*- night.

The physical features of the Vedic deities are anthropomorphic. Thus head, face eyes, arms, hands, feet and other portions of the human frame, as ascribed to them are symbolic. The figurative description is simply meant to describe their activities figuratively, otherwise their connection with nature and natural phenomena are almost clear. It is also evident from the fact that there is no description of idols and temples in ṛgveda. It means the figures are symbolic expressions of their activities, which can be easily understood if concern knowledge is there.

The deities has a beginning and are not thought to born erroneously at the same time, sometimes Vedic seers have referred the earlier deities and certain deities have been described as the off-springs of others, which indicates that the natural forces have been generated from one another. The deities became immortal by drinking soma is a symbolic expression of a chemical phenomena, which initiates the formation of the atoms and molecules of the natural components, where *Soma* is a bond energy, which bind atoms and provide them stability. The off-springs of the deities signify that the natural components and forces are interconnected, and one force may generate other. The home of the deities has been described as sky (heaven), which indicates sun and zone of ionosphere in the upper atmosphere. Each deity has been considered as supreme and mighty, which regulates the order of nature no one can thwart their ordinance. It means that natural components are independent in themselves and inevitable for the nature.

About a dozen deities have been invoked in pairs, such as *Dyava* - *prthivi* - heaven and earth, *Mitra* - *Varuṇa*, *Ap̥̌m nap̐̌t̐̌*, *Agni* - *Soma*, *Indra* - *Soma*.

Besides the pair of deities, there are a certain number of more or less definite groups of deities. They are associated with some particular God, such as *maruts* or storm - gods, *Rudras* are associated with their father *Rudra* and *Ādityas* have been mentioned in company with their mother *Aditi*. Another important group is of *Vasus*. *Indra* has been associated with *Indras*. There is also *Viśvedevas* means all Gods.

Invoking the deities in pairs and in groups- It indicates their

connections with each other, which signifies that for their functions in the nature they are dependent and associated with each other, although independently they are supreme and inevitable for functions of the nature.

The deities have been described as great, they regulate the order of nature, they hold sway over all creatures, no one can by pass their ordinance, fulfilment of desire is depends on them, they bestow prosperity to mankind.

Only one in whom injurious traits appear is *Rudra*. The Rudra represent oxidation reaction, which is beneficial in the living-beings, and the same decompose the body after death.

The natural deities are true and have been regarded as friends and protector of honest. They punish sin and guilt. It means that the natural benefactors are for wise utilization, whenever over exploitation is there, or misuse of natural components is there, consequent imbalance in the nature causes natural catastrophe, the same is the punishment for mankind

a. Deities of the Sky

Deities of Sky are *Dyaus - Varuṇa, Mitra, SÊryÊ, SavitÊ, Pu-an*, the *A,,vins, U-as* and *Ratri*. They represent solar phenomena related with the sun. Sun has been regarded as the main energy source on the earth and has been described as the eye and the soul of creation. All the activities, which are going on in the creation have been attributed to the sun.

KÊla-time Atharvaveda 19-53, 54, ***the KÊla-time*** is the main cause of creation, time is responsible for everything. The time is calculated with sun's movement at its axis, which is known as *SÊṣ vÊsar KÊla* or year. Along with this all the planets in the solar system are moving around the sun and rotate at their axis, through their magnetic field, they influence weather and climate on the earth's surface. The duration of the day and night with rising and setting of the sun are related with solar phenomena, they are most important for living organisms. The germinating plants shows maximum growth during morning and evening hours. Hence morning and evening have been regarded as auspicious time for health purpose.

The *A,,vin* represents morning and evening, The savitra is stimulator of metabolic reactions in living-beings and the thoughts in human beings, *A,,vins* are the sign of longevity, it means if morning and evening hours are utilized properly, they can check ageing.

A,,vins- represent nucleotide pairs on the DNA, they are the regulator and controller of life, if they are working properly, they can cure diseases and they can check ageing.

. *Mitra* is the visible light of the sun, which is essential for photosynthesis and important for the creation, as such *Mitra* - light is friend of all creatures. *Mitra* has been invoked with *Varuṣa*, the *Varuṣa* is God of water, it means with the visibility of light, temperature get increases, which initiates evaporation and transpiration, which are responsible for the rainfa

MĒtari,,van - **Carbon di oxide** is said to produce in the heaven and has been brought on the earth, it indicates that the carbon atom is generated in the heaven and its next birth is on the earth, where it has produced carbon di oxide.

b. Deities of the Atmosphere

Atmospheric deities are *Indra ApĒm-napĒt*, *Rudra*, the *maruts*, *VĒyu*, *Parjanya* and *Apas* - the waters.

Electric energy - *Indra* has been described as the lord of atmospheric deities, he is regarded as twin brother of *Agni*, his physical features are anthropomorphic, his arms or weapons are the indicators of atmospheric activities. *Indra* has close connection with *Soma*, *Varuṣa*, *Sun* and *Aditi*, it signifies the universal nature of Indra-electricity..

Magnetic energy – Soma In actual sense *Indra* represents electric energy. In the Veda *Soma* has been described as a plant, as a moon and as an energy also, he is the lord of speech, plants, earth, sun and moon. It means, he is associated with them and as such they have been identified as *Soma*, it signifies magnetic energy within them, *Soma* and *Indra* together represents electromagnetic energy, which is involved in every activity of nature. As such *Indra* and *Soma* are the essential part of nature (*Aditi*).

Gravity - The *Varuṣa* lord of water, water consist of H₂O - hydrogen and oxygen. The bond energy -electromagnetic energy in

the water molecule has been indicated through *Soma* and *Indra*.

The hydrogen and oxygen are gases without mass they constitute the water molecule H_2O with gravity. Accordingly with gravity the water molecule came in to the existence. It has been expressed by *Varuṇa* as lord of water.

The atmospheric activities lightning, rainfall, thunder storm and wind flow are associated with electricity. Today it is a fact that atmospheric layers - troposphere, mesosphere, stratosphere, ionosphere and magnetosphere are interconnected through global electric circuit G E C and are influenced by each other. The activities of these layers, ultimately affects weather and climate on the earth. Symbolically the same has been indicated through the activity of *Indra*, his thunder bolt *Vajra* is his electric charge, his drink *Soma* is a magnetic energy. When electrical and magnetic disturbances are there in the atmosphere, then electricity with disturbed magnetic field brings magnetic storms and thunder storms, which creates havoc in the atmosphere and on the earth. The same has been described as energetic angry nature of *Indra*. The *Soma* has been described as *ApÊm napÊt*, which bring rains, *Parjanya* are rain clouds, which are having positive & negative charges. When these two charges colloids it causes lightning and rain, the same has been described as killing of the demon of draught- *V,tra* by *Indra*. The battle of *Indra* with *V,tra* to release the imprisoned cow is a symbolic expression for the rainfall, as rains have been described as milk, ghee or honey, which signifies the nourishing character of rainwater and the cow, is a metaphor for the rain clouds.

Water clouds - Maruts have been described with *Indra*, *Rudra* and *VÊyu*-wind. They are related with the clouds in the atmosphere. Which check the sun light, their father is *Rudra*. There are eleven *Rudra*, which have been described with air, it signifies oxygen-oxidation. When it is said that *Rudra* is having medicinal properties, he is physician of physicians. It means with oxygen he provides remedies for diseases, which is its beneficial aspect or “*iva Bhava*, till the capacity of breathing is there in the living-beings, they survive. When respiration is seized, with death, the same oxygen oxidise the dead by degradation, which is its maleficent demon like character. *Rudra* initiate oxidation reduction

reactions in the atmosphere, hence he is regarded as their father, the *Indra* - electricity and wind, when they colloid in the atmosphere, they produce thunder storm, roaring, lightning and rainfall. Hence they (*Maruts*) have been described with *Indra*. With rain fall clouds are disappear and path for sunlight became clear. The sun has been personified as *Vi-ṣu* ṽ g. 1-154 and has been identified with the activities of *Indra*. *Vi-ṣu* is the visible form of light on the earth, which is associated with all the biological and chemical reactions going on in the nature, due to the changes in temperature and light. His three steps are sky, *Antrik-a* - heaven and earth, which is a course of light from the sun to earth. It has been said that his two steps are visible and one step is invisible, it means in the *Antarik-a*, where the ozone layer absorbs the UV radiations. It is his invisible step the other two steps are sky and earth. The different forms of water have been invoked as *Apas* and *ApÈm napÈt* (ṽ gveda 2-35) here water has been identified as *Agni* and as son of water, which represents water vapours, the *Agni garbha*-embryos of water, it indicates about the electromagnetic bond energy, which binds hydrogen and oxygen atoms in a water molecule.

c. Terrestrial Deities

Terrestrial deities are *Prithivi* - Earth, *Agni* and *Soma*.

Prithivi - Earth has been invoked as the dwelling place for natural components. It provides space for nature and natural activities. *Agni* is main component on the earth. *Agni* has three birthplaces with three fold nature. The three places of birth are sky (Sun), *Antarik-a* (atmosphere) and earth.

The sky is the place of sun, which is its first birth place from there it came to *Antarik-a*.

Antarik-a, where it is trapped by earth's magnetosphere and ozone layer absorbs the toxic UV radiations. Where ionization in the ionosphere gave it second birth, from here it came on the earth's surface, where plants convert the visible light in to chemical energy. It is its third birth. The actions and inter-actions going on at these three places have given it a threefold nature. It has been expressed as *Agni* - energy is the cause of creation, it has been indicated in the very first stanza of ṽ gveda - 1-1-1.

अग्निमीळे पुरोहितं यज्ञस्य देवमृत्विजम्। होतारं स्तुधातमम्॥१॥

I call *Agni* - energy, which is priest, deity and (y tvij) the invoker of the sacrifice, the bestower of treasure.

Here sacrifice signifies the creation sacrifice - actions and interactions, which are going on in the creation, through which creation has its beginning and a source of its existence.

Soma - Magnetic energy - *Soma* is a terrestrial deity, which is being associated with *Indra*, *Agni*, *Pu-an*, *Rudra*, *Soma* are companion of *Indra* and they ride on the same car. It indicates that *Indra* is electricity and *Soma* is a magnetic energy, which together known as electromagnetic energy, accordingly they have been invoked with each other as riding on the same car.

सोमैनादित्या बलिनः सोमैर्न प्रथिवी मही।

अथो नक्षत्राणामेषामुपस्थे सोम आहितः॥ ऋ. १०.८५.२

By Soma are the Adityas strong, by Soma mighty is the earth.

This Soma in the midst of all these constellations hath his place.

In fact *Soma* signifies magnetic energy, power of the sun is in *Soma* means its magnetic spots and magnetic field, the earth is great due to the *Soma* means earth's geomagnetic field and magnetosphere. In other as in *Nak-traṇi* (astronomical bodies) *Soma* is present. It indicates that magnetism is present in all the astronomical bodies. According to modern astronomical principles every rotating astronomical body, which is moving at its axis is having its own magnetic field and magnetosphere.

A plant growing on mountains is also known as *Soma* plant, which is used in preparation of *Soma* juice. It is due to the power of stimulation in it, otherwise all plants are having *Soma*. In some hymns of Atharvaveda and in post Vedic era the moon has been also identified as *Soma*, it signifies the magnetic power of the moon. The moon is a planet of the earth and having induced magnetic field, which influence the earth's geomagnetic field and life processes on the earth, it influences nervous system of the living-beings through brain, the lunatic persons behave abnormally during full moon or dark night, due to the stimulating power of the moon, hence the moon has been termed symbolically as *Soma*, and it is said that in the human body mind is like a moon.

3. Scientific key for Vedic Hymns

Vedic deities are the source to understand the Vedic hymns. The deities, signifies either a component of nature or natural phenomena, which they represent. With a long history of Vedic culture, which may be about many thousands of years, the names of Vedic deities get transformed in to the personification and worship of nature and natural phenomena, which have been became converted in to the belief that all the objects and the nature with which man is surrounded are animate and divine. Accordingly with time the Vedic deities were being interpreted in different ways according to the fancy of the narrator. As the stories related with the

deities have been described in the anthropomorphic manner, the natural basis of the deity get lost and the anthropomorphic nature of Vedic deities has given the way for personification of the deities and description of the Vedic deities as if they have off-springs and generations. The same has given the concept that Vedic Gods have families. Heaven and earth are the parent of the Vedic Gods, accordingly the description of Vedic deities have taken the shape of myths. Hence in the present era the names of the Vedic deities are having altogether different meanings. Otherwise the names of Vedic deities originally represent different forces and components of the nature. As has been revealed from the fact that Vedic culture was having the full knowledge of the creation, and before the catastrophe, which was inevitable under natural circumstances, the Vedic seers have compiled their knowledge of the creation metaphorically in Vedic hymns. The metaphors are having the indication of the natural phenomena or a chemical reaction. The language of the Vedic hymns is coded and symbolic. The deities and meanings of the words are only to indicate the related phenomena or reaction. They have been described metaphorically as family. The figurative description of the deities is only to indicate their activities figuratively.

Every individual deity is independent and supreme as a head of the family, it means that the deity is inevitable for function of the nature and the inter relationship of the various factors is responsible for a particular phenomena of nature. It has been indicated through the agency of its family of Vedic deities, which are interrelated for a function. The interrelationship of various factors have been shown through off-springs, brother, sister, spouse, mother and father etc. This interrelationship can be understood if we are acquainted with the scientific terminology of the Vedic deities, as names of the Vedic deities represents the natural forces and natural factors, and their relation with other forces, which are working in the nature.

The functions of the Vedic deities have been expressed in an anthropomorphic manner to indicate the physical phenomena, which they represent. Thus the ancient commentator on Veda *YĒska* (Nir.7,4) speaking on the nature of Gods, remarks that what is seen of them is not anthropomorphic at all, as in the case of the sun, the earth and others. Hence the way through which Vedic seers have expressed their knowledge is personification of the deities, by

which the natural phenomena is being indicated figuratively. After the destruction of Vedic culture the natural phenomena and deities became modified into worship of Gods.

Invoking the natural deities is a peculiar feature of Vedic culture, which signifies that every thing, object or a natural phenomena with which we are surrounded are having a good or evil influence on us, as such, heaven, earth, mountains, rivers, plants, animals, and even objects made by hand such as weapons, chariot, music drums, plough, pressing stones, sacrificial post have been invoked. It is only to indicate that every thing, which is present in the nature. They have their own importance and are for wise utilization, as the Vedic seers have invoked the *manyÊ*-wrath and *shriddha*-respect also. It was having the motto that every one should feel sense of responsibility towards nature and its conservation

The basic forces of the nature are true Gods of Veda, which can be inspired with motives and passion born like man, but immortal. In fact they are representatives of the phenomena of nature. The degree of anthropomorphism of the various deities varies considerably because when the name of the God is the same as that of his natural function than the personification is not advanced, such is the case with *dyau*- sky, heaven -middle atmosphere, *Prthivi*-earth, *sÊrya*-sun, *u-a*-dawn, whose names represent the double character of the natural phenomena and of the force presiding over them. Due to which they have their existence.

The *Vedic* deities have but very few undistinguishing features, while many attributes and powers are shared by all alike. This is partly due to the fact that the department of nature, which they indicates are often much in common. The deities have common source but have different forms to denote a particular phenomena, which gradually has acquired an independent character.

It means the forces of the nature are having a common source and are interrelated. For the phenomena of nature, one particular force is responsible, which is independent in it self and inevitable for the nature.

Today, it is a fact that on the earth whatever is going on is due to the sun, which influence, weather, climate and life on the earth through its various natural forces. The same has been described as

“The sun is the soul and eye of the creation”

The Universe, which is the stage on which the actions of Vedic deities are going on, it has been regarded as three fold, which may be divided in to three domains of earth, atmosphere and heaven. Accordingly the Vedic deities have been classified, which are mainly thirty-three in number and can be divided equally eleven in each sphere. In the *BrĒhmaṣa* literature they are classified as eight terrestrial *Vasus*, aerial eleven *Rudra* and celestial twelve *Āditya*. Which are related with earth, wind and sun respectively, *SarvĒnukramaṣĪ of KĒyĒyana* deals with Vedic deities in detail, which is an index to Vedic deities. Following the triple classification of *ṛgveda* 1-139 *YĒsk* (Nir.7,5) has divided the different deities in the fifth chapter of *Nighan-#* in to the three orders of *Prthivisthana*- terrestrial (Nir.7,14-9.43) *Antarik-asthana* aerial(nir.10,1-11.50) and *Dyausthana* -celestial(12,1-46) He further explain that in the opinion of his predecessors *Nairuktah* there are only three main deities, these are *Agni* on earth, *VĒyu* in air and *sĒrya*-sun in heaven. It indicates about the importance of three main spheres of the world as reflected in *ṛg.* 10-158 May *SĒryĒ* protect us from heaven, *Vat* from air and *Agni* from the earthly regions.

The fifth chapter of *Nighan-#*, on which *YĒsk* comments contains in its enumeration of Gods a number of minor deities also so that the number of deities in different spheres became more than eleven. It is important to note that in this list of Gods *prthivi* and *Tva-ta* are common in all spheres, some Gods are common in terrestrial as well as aerial, such as *Agni* and *U-a*, *Varuṣa*, *Yama SavitĒ* in the aerial as well as in the celestial. In this manner the classification is according to the relative importance of the deities in different spheres. It indicates that the natural factors equally influence other spheres also through their actions.

The description of Gods-deities metaphorically as a warrior or as a moral ruler and accordingly the glorification of the deities enumerate them as super natural powers. This has given the way for mythological interpretations of the deities after the Vedic period. If we concentrate on the relative importance of Vedic deities other than super natural powers, then only we can interpret the names of Vedic deities.

The scientific interpretation of Vedic terminology is not to glorify the Vedic culture but for the guidance of modern scientists, who can take the guidelines from the phenomena or reaction so as to work on the untouched aspects of the creation system.

Vedic terminology starting from ṛgveda with time have taken different turn, they have been explained in *Atharvaveda* also. In *BrĒhamaṇḍa*, *Upniḥads* and *Puraṇas* they have taken a totally different turn being associated with spiritual experiences and their imagination in the form of personified super natural powers. It has given the way for narration of the myths in different shapes and forms, which became the basis of Indian mythology as we know today.

Association of Vedic terminology with myths of mythology is a product of long history of time and climatic conditions. Along with this due to the coded language of the Vedic hymns, the subject matter is complex and difficult to interpret.

Family - The phenomena of the nature have been explained through family relationship.

The whole creation is a family under the fundamental energy, from where the creation came into existence. The creation is working as a system, through transformation of energy with actions and interactions in cyclic manners (ṛg. 10-90-16). The earth, where life is present, it also represents a family, where sky is father, earth is mother *soma*- magnetic energy is brother, *Aditi*-nature is sister (ṛg. 10-191-6), accordingly every natural force and its related phenomena have been described as different families.

4. Origin and evolution of the creation

I. The quest of origin

Who is the supporter, creator? Who has seen him, when he first came into being?

The earth is a planet of the solar system. The earth is peculiar in the sense that life is present on the earth. The modern science has revealed the fact that our solar system came in to the existence from the solar nebula. The life on the earth is a natural process of evolution, but hard to understand with diversity and complexity in the nature, under the cosmic principles. In the history of civilization on the earth, the intellectuals and thinkers have tried to reveal the

secret in their own way, but the quest to know the real meaning of life on the earth remain untouched. The similar questions have been raised in the Vedas also, and their answers have been given in a similar fashion metaphorically. We have not touched that height of knowledge, hence the simple answers looks just like myths.

In the past few hundred years the development of modern science has tried to explore the mystery of life on the earth in a systematic manner through experiments and their conclusive results.

It seems that evolution of the civilization and its destruction with time is a natural process on the earth.

Now we know that the creation is a system, the great scientist Einstein has enlightened the world that the creation is working, under the laws of thermo dynamics.

In Einstein's equation $E = mc^2$ it means energy and mass can be converted in to each other, where E =Energy, m =Mass and c =Velocity of light.

Life has originated on the earth through a chemical synthetic process of evolution. The Ozone layer protects the life on the earth.

The light energy is converted in to chemical energy through photosynthesis by the green plants, which is the source of carbon skeleton of the living-beings.

The DNA with four bases is main genetic material, which is universally present in the living-beings.

The system is working under the bio-geo-chemical cycles in nature through oxidation and reduction reactions.

The time on the earth is related with the rotation of the sun at its axis.

All these conclusions of modern science have been discussed in the Vedas also.

A teacher and a subject expert professor can understand the importance of metaphors and riddles in day to day life to explain the knowledge in a simple way, so that the listener can grasp the knowledge in it. In the same fashion the Vedic texts move forward with their contemporary knowledge in the background. Accordingly any subject expert can able to grasp and touch the Vedic height of the knowledge. The interpretation of Vedic metaphor has revealed

all the modern scientific theories and cosmic principles.

Who is the supporter, creator? Who has seen him, when he first came in to being?

This is the human quest prevailing on the earth with dawn of civilization. The answer has been given that the creation is rested upon unborn's navel, wherein abide all things existing. He is in the middle of the creation just like a great monster- *Yak-a*. All are set in him like the branches of a tree.

It is an indication towards the fundamental primaval energy. The same has been invoked in first hymn of *ṛg*. 1-1-1

अग्निमीळे पुरोहितं यज्ञस्य देवमृत्विजम्। होतारं रत्नधातमम्॥१॥

I invoke the Agni- (fundamental energy) who is the priest, Deva (fundamental particles), sacrificer, and reciter of the S,—i, Yajsa, which is the treasure of jewels. ṛg.1-1-1

The fundamental charged particles

गायत्रस्य सुमिधस्तिस्त्र आहुस्ततो मुह्य प्र रिरिचे महित्वा॥

GĒyatrĭ hath, they say, three bands for kindling: hence it excels in majesty and vigour. A. 9-10-3

It has been explained that the three charged particles, electron, proton and neutron are the source of atom and due to it they excels in majesty and vigour.

The electrostatic energy has been generated after magnetic energy, it has been expressed metaphorically.

तस्या इन्द्रो वत्स आसीद् गायत्र्यभिधान्यभ्रमूर्धः

Of her the Indra-electricity was young vatsa (Son) and GĒyatrĭ the halter, cloud the udder (milk). A. 8.10.5

The role of magnetic energy in the nature has been explained in an anthropomorphic manner in the pre-cosmic condition. That in the beginning after the magnetic energy, electric energy has been generated first just like a young son and there after the charged particles have their origin. They have the potentiality to feed the creation just like the milk feed an infant.

Energy transformation

It has been indicated that the creation came in to the existence

through energy transformation and the fundamental energy remains constant in all conditions.

The full from the full he bends up (ud-ac); the full is poured with the full; also that may we know today, whence that is poured out. Ath. 10-8-29.¹

This beautiful one (F) (is) un ageing, an immortal in the house of a mortal; for whom she (was) made, he lies; he who made (her) grew old. Ath. 10-8-26.²

The creation has been evolved from the fundamental energy under space, time and the environmental conditions. The fundamental energy is unborn, un-ageing, as an immortal it resides in the house of mortals. It has been expressed that the synthesised components of the nature like atom and cells are complete in them selves and as a mortal they under go deterioration with ageing. In the atom and the cell the fundamental energy resides as immortal. It has been indicated that with the reproductive capacity of the cells, the life energy became young through cell division and the old cells under go ageing.

The role of the fundamental energy and synthesis of the natural components in the creation has been explained. It has been indicated that all the natural components have been synthesized from the fundamental energy but the fundamental energy remain constant in all condition. The natural components are complete in them selves.

The electromagnetic energy

It has been expressed metaphorically that electromagnetic energy is present every where.

Both their father are also their son; both the chief are also the meanest (Kani—ha) of them; the one god, who has entered in to the mind, born the first, and he within the womb. Ath. 10-8-28.³

१. पूर्णात् पूर्णमुदचति पूर्णं पूर्णेन सिच्यते। उतो तद्व्य विद्याम् यतस्तत् परिषिच्यते ॥ २९ ॥

२. इयं कल्याण्यंशुजरा मर्त्यस्यामृता गृहे। यस्मै कृता शये स यश्चकार जजार सः ॥ २६ ॥

३. उत्तैर्षा पितोत वा पुत्र एषामुत्तैर्षा ज्ये उत वा कनिः।

एको ह देवो मनसि प्रविष्टः प्रथमो जातः स उ गर्भेऽ अन्तः॥

It has been expressed that the fundamental life energy-consciousness has generated first in the atoms and in the womb. It has been termed as first born, than the fundamental energy proliferate along with the electrostatic energy of the nucleus as electromagnetic bond energy. They together have been termed as both the father and their son. The electromagnetic energy is present in the universe and at the micro level in the atom and the cell. Hence it has been termed as chief as well as minute (*kani—ha*)

अस्य वामस्य॑ पलितस्य॒ होतृस्तस्य॒ भ्राता॑ मध्यमो अस्त्यशः॑।

तृतीयो भ्राता॑ घृतपृष्ठो अस्यात्रापश्यं॑ विस्पतिं सप्तपुत्रम्॥१॥

The sun is the soul and eye of the creation, its importance in the solar system has been expressed symbolically.

Of this pleasant (vama) hoary invoker- of him the brother is the midmost (a,,na); his third brother is Ghee backed (Gh,ta-p,—ha); there I saw the seven sons of chief of the world Rg. 1-164-1

The first riddle gives the idea about creation that the supreme fundamental energy, which has been invoked in the creation sacrifice, guarded by him (sun), his middle brother is *Asnaha*- air and the third brother is *Gh,ta p,—ha*- organic matter. Here I have seen seven sons of the *Vi,,vapatim*-The chief of the world. Rg.1-164-1

It has been indicated that guarded by the supreme is the sun in the heaven, his brother in the middle is air and his third brother is on the earth *Gh,ta p,—ha* the seven sons are seven rays of the sun, who feed the creation on the earth through photosynthesis., Accordingly it has been indicated that sun is the main source of energy on the earth, the middle atmosphere is the second centre, who feed the creation through ionosphere processes, his third brother *Gh,ta p,—ha*, who feed the creation on the earth through the organic matter synthesized through photosynthesis, the whole play on the earth is due to the conversion of light energy in to the chemical energy through photosynthesis, hence the seven rays have been termed as seven sons of the *Vi,,vapatim*-the lord of the world. In this way the Vedic seers have drawn the attention towards the three main centre of the creation, sky (sun), air- atmosphere and

plants on the earth.

सप्त यूजन्ति स्थमेकचक्रमेको अश्वो वहति सप्तनामा।
त्रिनाभिं चक्रमजरमनर्वं यत्रेमा विश्वा भुवनाधि तस्युः॥२॥

Seven harness (yuj) a one wheeled chariot; one horse, having seven names, draw (vah) it; of three naves (is) the wheel un-wasting, un-assailed where on stand all these existence. ĳ g. 1-164-2

The seven harness of one wheeled chariot are seven planets of the solar system, the solar system has been termed as one wheeled chariot. One horse having seven names is sun, which has seven visible rays and is responsible for the working of the solar system. The three naves are the sun in the sky, who feed the creation through its nuclear reactions at its surface. The second nave of the creation is the middle atmosphere, where, magnetosphere processes feed the creation through ionisation. Its third nave is on the earth, where plants nourish the living-beings at its surface through the photosynthesis in the nature. On these three naves (centres) the creation has its existence these three centres are working without rest.

दुमं स्थमधि ये सप्त तस्युः सप्तचक्रं सप्त वृहन्त्यश्वाः।
सप्त स्वसारो अभि सं नूवन्ते यत्र गवां निहिता सप्त नामाः॥३॥

The seven they stand on these chariot- seven horses draw it, seven wheeled; seven sisters utter songs of praise together, in whom the names of the seven cows are treasured. ĳ g. 1-164-3

The solar system has been termed as a chariot, where seven planets of the solar system drive the solar system through their movement around the sun as horse, the planets are rotating at their axis, due to this they have magnetic field and the magnetosphere around them, which is responsible for the movement of the solar system, hence they have been termed as seven wheels of the chariot. The seven sisters are seven visible rays, who feed the living beings like a cow on the earth, through the photo-synthesis, due to this the world of living-beings has come in to the existence through evolution. It has been indicated that in the living beings the seven rays have been treasured through food chain, they interact with each other.

The source of Cosmic World

FORTH from the ocean sprang the wave of sweetness: together with, the stalk it turned to Am, ta.

That which is holy oil's mysterious title: but the Gods' tongue is truly Am, ta's centre. ÿ g. 4-58-1

It has been expressed that from the ocean of universe the solar winds are the wave of sweetness. It has the stalk of fundamental charged particles. They turned in to *Am, ta* for the creation with formation of the atom.

In the same fashion the essence of the creation has been described as the four horned buffalo, where four horns are symbolic expression for the three fundamental particles and generation of energy in the atom.

The essence has been termed as *Gh, ta*-clarified butter, it means the essence of the buffalo milk is Ghee. Similarly the four dimensional structure of the atom has the essence of the creation.

In the atom due to the spinning of the electrons around the nucleus the magnetic energy generates. The magnetic energy in association with the electrostatic energy of the nucleus produces electromagnetic bond energy. It has been expressed as the centre of *Am, ta* for the creation. The nucleus of the atom around which electrons move in the orbits and the magnetic energy generates, the nucleus has been termed as tongue.

The world of living-beings

Further the structure of the DNA De oxy ribose Nucleic Acid has been indicated through the four horned buffalo, which has four horns four bases with two head- two strips and three legs represents triplet code of three bases known as genetic code, and seven hands indicate seven bonds (two double bond and a triple bond) in between triplet nucleotide pair ÿ g.4-58.

Universal nature of DNA

The genetic material DNA is present universally in all the living beings. It has been expressed as shaper of all the creatures. It has all the information of life. The universal nature of DNA has been expressed in this manner.

त्वष्टा रूपाणि हि प्रभुः पशून्विश्वान्समानुजे तेषां नः स्फुटिमा यंज॥१॥

Tva—È the lord hath made all forms and all the cattle of the field:

Cause them to multiply for us. ÿ g.1-188-9

The DNA has been termed as *Tva—È*, who is shaper of all creatures with multiplication, hence it has been termed as omni form (*Vi, varupa*), it means the DNA is present in all the living beings.

For Tva—È he who knows each sacred song, brought thee to life, pre eminent o'er all the things that are.

It has been expressed that Tva—È² DNA is a supreme genetic material, which the source of life and it bears the information of life and death.

Origin of Life

Life has originated on the earth through a chemical synthetic process of evolution, and the Ozone layer protects the life on the earth.

Photosynthesis The light energy is converted in to chemical energy through photosynthesis by the green plants, which is the source of carbon skeleton of the living-beings.

Let him who truly knows (here) tell the set down track of this pleasant bird; the kine extract milk from his head; clothing themselves in a wrap, they drunk water with the foot.} . ÿ g. 1-164-7

The pleasant bird is sun, from where the kine extract milk from his head. It indicates about the visible solar rays (VIBGYOR), which are coming on the earth's surface from the head of the sun. These rays have been trapped by the plants for the **photosynthesis**; they act as milk-food (*k—İra*) through nourishment for the living-beings. Hence the visible rays of the sun have been compared with the milk and plant as kine. The absorption of water by the green plants has been indicated through the drinking of water with the foot, the foot represents root system ÿ g.1-164-7

इह ब्रवीतु य ईमङ्ग वेदास्य वामस्य निहितं पदं वेः।

शीर्ष्णः क्षीरं दुहते गावो अस्य वृद्धी वसाना उदकं पदापुः॥

Bio-geo-chemical cycle

The system is working under the bio-geo-chemical cycles in nature through oxidation and reduction reactions.

यज्ञेन॑ यज्ञम॑यजन्त दे॒वास्तानि॑ धर्मा॑णि प्रथ॒मान्या॑सन्।
ते ह॒ नाकं॑ महि॒मानं॑ सचन्त॒ यत्र॑ पूर्वे॑ सा॒ध्याः सन्ति॑ दे॒वाः।

Gods sacrificing sacrificed the victim: these were the earliest ordinances. The mighty ones attained height of heaven, there where the SEdhyas, Gods of old, are dwelling. y g. 10-90-16

The *Yajna*-sacrifice means action and interactions, here it has been said that from actions and interactions again actions and interactions get generated, where according to the cosmic law-*Dharma*, *Deva* - fundamental particles are the first, with their activity they get reached to the height of matter and the fundamental particles- *Deva*. It means the fundamental particles are the first in the series of actions and interactions. Through their activity they are converted into the matter and again reach to their original old state of *Deva* - fundamental particle through reversible reaction. It is an indication towards the natural cycles, through which the natural components have been synthesized and disintegrate in the reversible direction.

The oxidation and reduction reactions have been termed as two mother of the creation.

Two Mother of the Creation-

Oxidation and Reduction have been described metaphorically as the two mother of the creation, where one is related with the synthesis and the other is related with the disintegration, they move in succession one after the other without end. They maintain the balance in the system.

तन्त्रमेके॑ युव॒ती विरु॑पे अ॒भ्याक्राम॑ वयतुः षण्म॑यूखम्।

प्रा॒न्या तन्तू॑स्तिरते॑ धृ॒त्ते अ॒न्या नाप॑ वृ॒ज्जाते॑ न गमा॑तो अन्त॑म् ॥४२॥

A certain pair of maidens, of diverse form, weaves, betaking them-selves to it, the six-pegged web; the one draws forth the threads tantu, the other sets [them]; they wrest not off (apa-v,j), they go not to an end.

² Atharva, 10-7-42

ते सूनवः॑ स्वर्षसः॑ सुदंस॑सो म॒ही ज॑जृ॒मतरा॑ पूर्वचि॒त्तये॑।

स्थातु॑श्च स॒त्यं ज॑ग॒तश्च॑ धर्मा॑णि पु॒त्रस्य॑ पाथः॒ पुदम॑द्व॒ याविनः॑॥३॥

These sons of yours (y̐bhus) well skilled in work of wondrous power brought forth to life the two great mothers first of all. To keep the truth of all that stands and all that moves, ye guard the station of your sons who knows know guile. - y̐ g. 1-CLIX-3.

It has been indicated that during the evolution of life on the earth, the y̐bhu (Cell) has acquired life through their skill of work. "They brought forth to life the two great mothers first of all" it means they have developed two reactions oxidation and reduction, they acts as two mother for the functions of the nature. They are the symbol of truth, it means through them the nature is working as a system. Hence they have been termed as two mothers, who regulates and feed the system through their by products

The time on the earth is related with the rotation of the sun at its axis.

. Time-KÈla - The wheel of order

Twelve are the fellies, and the wheel single; three are the naves. What man hath understood it?

Therein are set together spokes three hundred and sixty, which in nowise can be loosened.

y̐ g. 1-164-48

The importance of the Time-KÈla has been explained through the SÈṣ vatsara KÈla- year, it has twelve months with three hundred sixty days. It is related with the rotation of the sun at its axis with three centres - Sky, atmosphere and earth

This KÈla- time is rolling round the heaven. It is the wheel of order.

Origin of Life

We know today that life has originated on the earth through a chemical synthetic process of evolution, the life originate from pre existing cell s only, and the Ozone layer protects the life on the earth. But what is consciousness? It has not been explained so far, Vedic knowledge is also on the same line, but one step ahead, they have indicated the origin of consciousness also.

Origin of life- the Prokaryotic Cell- y̐bhu

. अयं देवाय जन्मने स्तोमो विप्रैभिरासया। अकारि रत्नधातमः॥

1. For the celestial Race this song of praise which gives wealth

lavishly. ÿ g.1-20-1

The celestial race-cell, the *ÿ bhu-cell* has been praised as the divine class or race of the *ÿ bhus*, due to the fact that once the *ÿ bhu-cell* has developed, it has maintained its continuity through cell division. The three sons of *Sudhanvan*-developing coaservates, who is said to have been descendant of *Œngirasa* -Viscous sap. They were named severally *ÿ bhu*-eldest-mature Cell- *Vibhvan-vigorous*, and *VĒja* is youngest (Young new Cell). They are collectively called as *ÿ bhus* from the name of *ÿ bhu* due to their skilful good work for the living-beings, as they are the only source of organic matter on the earth. Hence they have been termed as celestial race, which is the source of organic matter without check.

The *ÿ bhu* represents a mature cell, once it ha been synthesized in the nature, it maintains its continuity through the cell division, accordingly at the cellular level all the living organisms exhibits same functions in the nature. Hence the *ÿ bhu* has been described as the celestial race.

य इन्द्राय वचोयुजां तत्क्षड्दर्शनसा हरीं। शमीभिर्यज्ञमाशत॥२

2. *They who for Indra, with their mind formed horses harnessed by a word. Attained by works to sacrifice*

Colloidal system-How the *ÿ bhu-cell* initially came in to the existence? It has been indicated symbolically through mind, and the **horses harnessed by word** to take part in the creation sacrifice. In this way the appearance of the coaservate drops as closed primitive system with colloidal charged particles has been explained.

The formation of the charged particles in a hydrophilic colloidal system has been indicated by **Horses harnessed**. Where the *Indra* ² electrical charge is the first, who has appeared with its +ive and –ive charges, this phenomena is just like the words appear from mind and spread rapidly, in the same fashion the charged particles exhibit movements with generation of vibrating sound, the sound can be grasped by the electrostatic energy of the charged particles just like phonoatomic effect. It has generated the series of actions and interactions as a part of creation sacrifice.

Accordingly with movements of the charged particles and actions and inter actions in a closed system a primary cell body has

taken its shape in early primitive condition.

Life on the Earth Ozone layer

Now, ye people, take knowledge, he will speak a great mystery (?BrĒhamaṣa); that is neither on the earth, nor in the sky, where by the plants breathe. Ath. 1-32-1

It has been said that he will speak a great mystery about the plant breathing-respiration. That is not on the earth, nor in the sky. Where by the plants breathe.

In the atmosphere is the station of them, as of those sitting wearied; the station of this that exists (bhĒt): that the pious know or they do not. Ath 1-32-2

The truth has been revealed by an indication about the presence of the ozone layer in the mid atmosphere by saying that atmosphere is the station of them, who are sitting wearied and station of this that exists, it means life is present on the earth due to the Ozone layer and the magnetosphere in the atmosphere, The atmosphere is the place of ozone layer in the atmosphere, which absorbs ultraviolet rays, due to which the earth has cordial atmosphere for life. *Athrvaveda 1-32-2*,

Global warming is a modern threat for existence of life on the earth. It seems that the earth may have faced this situation earlier too as indicated in the *Atharvaveda* in a lucid manner Ath.10-8-39-41

Age of the Vedic Culture

As regard the age of the Veda and Vedic culture is there, it has been regarded that Vedic hymns have been formulated around 2000 to 4000 years B.C. The Archaeologists, Historians and Astronomers have different views regarding the age of Vedic hymns and they have no consensus over it. Looking to the depth of the Vedic knowledge in the light of modern science, it seems that the Vedic culture may have flourished on the earth before the ice age and 'Green house Effect' and consequent Global warming had forced them to compile their knowledge in Vedic hymns.

As per the Hamburg Institute of Meteorology of Max Planck Society, Germany under a project on **Climap** has reported that identical to “Green house Effect” and consequent Global warming

had occurred about 18000 years ago and a consequent ice age was there and North America, Europe and Siberia were covered with thick snow cover in between Siberia and Alaska a Land bridge was formed through which people were migrated.(German News Sept. 89, Page 25).

How to understand the Vedic language of metaphors and riddles?

All the conclusions of modern science have been discussed in the Vedas in detail. The above conclusions about the creation are in the background of the Vedic hymns.

A teacher and a professor can understand the importance of metaphors and riddles in day to day life to explain the knowledge in a simple way, so that the listener can grasp the knowledge in it. In the same fashion the Vedic texts move forward with their contemporary knowledge in the background. Accordingly, only a subject expert and scientist can grasp and touch the height of the Vedic knowledge. The interpretation of Vedic metaphor revealed all the modern scientific theories and the cosmic principles. It has been explained in detail in an anthropomorphic manner symbolically that how the natural forces are working at molecular level.

The same quest is the subject matter of Indus Valley seals and tablets. How creation came in to the existence, and the role of DNA in various shapes at cellular level in the living beings has been expressed through the pictographs and figures on the tablets. *The Puru-a SÊkta* and 'Holy oil's Mysterious title' are in the background.

To express the higher knowledge at molecular level, which is hard to explain in an ordinary way is a difficult task. The Vedic language is a symbolic language, where metaphors have been used with a contemporary social and prevailing higher knowledge of the creation in the background. Under the cosmic principles, the Vedic civilization came to an end with ecological disaster. On the new journey of the development, the people were having only traditions and Vedic hymns, which they have preserved with oral recitation from generation to generation for succeeding generation to come on the earth.

Let us with tuneful skill proclaim these generations of the Gods, that one may see them when these hymns are chanted in a future

age. yg. 10-72 1.

5. How the creation came in to the existence?

With the scientific interpretation of the Vedic metaphors, the decipherment of the Indus Valley seals is possible. For which India and Indian culture were awaiting since long. It will give new dimension to the Indian culture in the world. It will also reveal the fact that once in the history Vedic culture flourished on the earth, without it such scientific work is not possible, it is also not possible that through meditation in the state of trance, such knowledge can

be explored? It is this wrong notion, which has kept the Vedic texts in the category of religious scriptures. The Vedas have been preserved through a complicated and highly strenuous oral tradition. With the great skill and labour of the Vedic people, it has reached to us without break even after many thousand years. It is our humble duty as a human being to interpret them in their proper sequence for the welfare of the society, as indicated in Rg.10-72-1

दे॒वानां॑ नु व॒यं जा॒ना प्र॒ वौचाम॑ वि॒प॒न्यया॑।
उ॒क्थे॑षु॒ श॒स्यम॑निषु॒ यः प॑श्चा॒दुत्त॑रे युगे॥

Let us with tuneful skill proclaim these generations of the Gods, that one may see them when these hymns are chanted in a future age. yg.10-72 1.

The single unified force

The modern Science has explored the secret of creation gradually with modification of their past experiences. In this reference Einstein conceived of a grand unified theory (GUT) of all the five forces of nature. Today with the discovery of electro- weak force by Abdus Salam, Sheldon Glashaw and Steven Weinsberg, three of the five forces in nature (electricity, magnetism and weak – interaction force) have been unified. The fourth force, the strong interaction force that binds the nucleus inside the atom is expected to be unified, as it is claimed today by some scientists. The final stumbling block remains with gravity. For quantising gravity as Stephen Hawking puts it. The scientists have to reach a state of singularity beyond space and time when this one force existed without disintegration.

The successful experiment on Bell's theorem in 1972 by Clauser, Freedman, David Böhm, and Alain Aspect in 1985, science discovered a synchronistic non- locality, where at the base of matter “non – local” causes operate and similar particles at a space like distance or some how “instantaneously interconnected” without the connection of any signal like light or electromagnetic waves.

The discovery of a ‘Holistic paradigm’ in science replacing the old dualistic paradigm has opened a new chapter to think over origin of cosmos.

David Böehm wrote on this great finding. “The essential new quality implied by quantum theory is non – locality. This leads to

the radically new notion of the unbroken wholeness of the universe.” (Foundation of Physics, 5, 1975, P 94)

Now the scientists have realized the notion of ‘Holistic paradigm’ in the light of recent quantum theory, which leads to unbroken wholeness of the universe. The same echo is coming from the Vedic science, where the one unified force has been imagined metaphorically as *Yak-a*.

The fundamental energy has been described as supporter, regulator and supporter of the creation, from whom the creation came in to the existence. He regulates the creation through oxidation and reduction reactions in the nature A. 10-7-42,43,44, as a golden embryo, he is omnipotent and omnipresent, he sustain heaven and earth, he stood in the midst of creation as *Yak-a*, all are set in him like the branches of a tree.

महद् यक्षं भुवनस्य मध्ये तपसि क्रान्तं संलिलस्य पृष्ठे।

तस्मिञ्छयन्ते य उ के च देवा वृक्षस्य स्कन्धः परित इव शाखाः॥

A great monster (yak-a) in the midst of the creation (bhuvana) strode? (kr̥nta) in penance on the back of the sea- in it are set(cri) whatever gods there are like the branches of a tree roundabout the trunk Atharvaveda 10-7-38

It has been indicated through the metaphor of the tree that all the components of the nature have evolved from the fundamental energy, and all are linked with him like the branches of a tree. He is in the middle of the creation. It indicates symbolically that all the components of the creation and nature are interconnected with fundamental energy in the centre.

It has been indicated on the seal figure - 1 (fig. 6.3 tablet Harappa. H95-2523)



A tree growing from a low platform, this sinuous tree with short leaves, Terracotta tablet, Harappa H95-2523.

Figure - I

The pictographic symbols indicate the evolution of the creation symbolically from the fundamental energy

A great monster (yak-a) in the midst of the creation (bhËvana) strode? (krËnta) in penance on the back of the sea- in it are set(cri) whatever gods there are like the branches of a tree roundabout the trunk A. 10-7-38

It has been indicated through the metaphor of the tree that all the components of the nature have been evolved from the fundamental energy. All are linked with him like the branches of a tree. He is in the middle of the creation. It indicates that all the components of the creation and nature are interconnected with the fundamental energy.

In this reference the modern Geneva experiment - The Large Hadron Collider machine, shows the curiosity and quest to know the secret of creation, has not an end but a beginning to explore the nature of cosmos and its origin in terms of science.

In this connection it is worth to trace the secret in the Vedas, where we find similar quest to know the secret of creation. The place, where the modern researches about the origin of cosmos have

reached in uncertainty, the same is the beginning point of the Vedic science of cosmos. Prior to the origin of cosmos, when neither time nor space was created, in this precosmic condition there was only one force, which began to disintegrate from infinite to finite with its back ground in the infinite cosmos, accordingly the creation came in to the existence under space-time relation ship. This one force is one-eternal fundamental energy. The same has been indicated, with origin of the 'Solar System' symbolically.

Origin of the Cosmos

Pre-cosmic condition

The origin of the creation has been traced from non- existent (*asata*), It represents the pre cosmic stage prevailing prior to the origin of the universe. At that time only deep darkness was there. The primordial calm and quiet condition of the single fundamental energy, which has a potentiality of existence, it has been expressed symbolically.

नासदासीन्नो सदासीत्तदानीं नासीद्रजो नो व्योमा परो यत्।
किमावरीवः कुह कस्य शर्मन्नम्भः किमासीद्बहनं गभीरम्॥१॥

Then was not non-existent nor existent: there was no realm of air, no sky beyond. What covered in and where? And what gave shelter? Was water there, unfathomed depth of water? ङ g. 10-129-1

न मृत्युरासीदमृतं न तर्हि न रात्र्या अह्नि आसीत्प्रकेतः।
आनीदवातं स्वधया तदेकं तस्माद्धन्यन्न परः किं चनासि॥२॥

Death was not then, nor was there aught immortal: no sign was there, the day's and night's divider.

That One Thing, breathless, breathed by its own nature: a part from it was nothing what so ever. ङ g. 10-129-2

Prior to the origin of cosmos, when neither time nor space was created, it has been expressed *then was not non-existent nor existent*: in this precosmic condition, there was only one force, which began to disintegrate from infinite to finite with its back ground in the infinite cosmos. It has been expressed symbolically through breathless, breathed by its own nature. Accordingly, the forces of nature came in to function with generation of heat energy.

The heat energy is the pioneer energy, which has generated the

fundamental particles of the nature. It has been expressed through the words 'great power of warmth' in the precosmic condition, where neither time nor space was born, at that time only deep darkness was there ÿ g. 10-129-3

तम॑ आसीत्तम॑सा गूळ॑हम॑ग्रेऽप्र॑केतं स॑लिलं सर्व॑मा इ॒दम्।
तुच्छे॑नाभ्व॑र्पितं यदासीत्तप॑सस्तन्महि॑नाजाय॑तैकम्॥३॥

Darkness there was: at first concealed in darkness this all was in discriminated chaos.

All that existed then was void and form- less: by the great power of Warmth was born that Unit. ÿ g. 10-129-3

How the cosmos came in to function? It has been expressed symbolically by the origin of the desire in the beginning, *Desire the primal seed and germ of Spirit.*

No body can claim to be the witness of the origin of the cosmos, but the facts can be visualized hypothetically only, the source of the finite cosmos is in the infinite, the infinite is fundamental energy and finite is the visible cosmic world, which we can be visualize hypothetically with insight in the heart. The relation of the visible cosmic world with infinite fundamental energy has been expressed by the existent's kinship in the non-existent-fundamental energy within precosmic condition. It has been expressed by saying that *Sages who searched with their heart's thought discovered the existent's kinship in the non-existent. ÿ g. 10-129-4*

काम॑स्तदग्रे॒ सम॑वर्त॑ताधि॒ मन॑सो रे॒तः प्रथ॑मं यदासीत्।
स॒तो ब॒भ्रुम॑सी॒ति नि॑र्विन्द॒द्दृदि॒ प्रती॑ष्या॒ कव॑र्यो॒ मनी॑षा॥४॥

There after rose Desire in the beginning, Desire the primal seed and germ of Spirit.

Sages who searched with their heart's thought discovered the existent's kinship in the non-existent. ÿ g. 10-129-4

ति॒र॒श्ची॒नो वि॒ततो॑ र॒श्मिरे॑षाम॒धः स्वि॒दासी॑ऽदुपरि॒ स्विदा॑सी॒त्।
रे॒तो॒धा आ॑सन्महि॒मानं॑ आसन्त्स्व॒धा अ॒वस्ता॑त्प्रय॒तिः प॒रस्ता॑त्॥५॥

Transversely was their severing line extended: what was above it then? and what below it?

There were begetters: there were mighty forces, free action here and energy up yonder. ÿ g. 10-129-5

It has been expressed that with generation of heat energy, it has spread in all directions with free action and generation of mighty forces (*electricity, magnetism and weak - interaction force*) here within view and above it fundamental energy came in to force. It

has generated a series of actions and interactions with fundamental particles just like begetters. Accordingly the cosmic world came in to existence.

In the conclusion of the hypothesis it has been expressed that the proposed hypothesis about primordial condition of the beginning, no body can claim to see it, on the basis of the knowledge of the creation the hypothesis has been proposed for the future generation and age.

Further it has been proclaimed that

को अद्धा वेद क इह प्र वीचत्कुत आजता कुत इयं विसृष्टिः।
अर्वाग्देवा अस्य विसर्जनेनाथा को वेद यत आबभूव॥६॥

Who verily knows and who can here declare it, whence it was born and whence comes this creation?

The Gods are later than this world's production. Who knows then whence it first came into being? 6

इयं विसृष्टिर्यत आबभूव यदि वा द्ये यदि वा न।
यो अस्याध्यक्षः परमे व्योमन्सो अङ्ग वेद यदि वा न वेद॥७॥

He, the first origin of this creation, whether he formed it all or did not form it, Whose eye controls this world in highest heaven, he verily knows it, or perhaps he knows not. y g.10-129-7

Today with the discovery of electro- weak force by Abdus Salam, Sheldon Glashaw and Steven Weinsberg, three of the five forces in nature (electricity, magnetism and weak - interaction force) have been unified. The fourth force, the strong interaction force that binds the nucleus inside the atom is expected to be unified, as it is claimed by some scientists. How this unified force can be explained? It has been explained symbolically in y g. 10 - 130.

Origin of the solar system and nature

- How the solar system and nature came in to function with origin of the cosmic world has been explained symbolically. In the beginning of the hymn, it has been expressed that the hypothesis about the origin of the creation, which has been expressed in the hymn is for the future generation of the living-beings, when these hymns will be chanted in the future.

दे॒वानां॑ नु व॒यं जा॒ना प्र वो॑चाम वि॒प॒न्यया॑।
उ॒क्थे॑षु श॒स्यमा॑निषु यः प॒श्यादु॑त्तरे युगे॥

*Let us with tuneful skill proclaim these generations of the Gods,
that one may see them when these hymns are chanted in a future
age ÿ g.10-72 1*

ब्र॒ह्म॑ण॒स्पति॑रेता सं क॒र्मा॑र॒इवा॑धमत् । दे॒वानां॑ पू॒र्व्ये युगे॑ऽस॒त् स॒र्दजा॑यत् ॥

*These BrĒhmaṣpati produced with blast and smelting, like a
smith, Existence in an earlier age of Gods, from Non-existence
sprang. 2.*

The creation has been evolved from a fundamental energy. How the fundamental energy has generated the cosmic world and how the solar system with nature came in to the existence. It has been expressed symbolically that *BrĒhmaṣpati*-fundamental energy has produced the cosmic world with blast and smelting just like a smith. It has been expressed that Just like a blacksmith blows up his fire and melts metal in the same fashion the non-existent - fundamental energy sprang up in to the existence with condensation of the heat energy in to the fundamental particles of the *Aditi*-micro nature, with this the non existent(precosmic calm and quiet condition) sprang in to being.

दे॒वानां॑ युगे प्रथ॒मेऽस॒त् स॒र्दजा॑यत् ।
तदा॑शा॒ अन्व॑जायन्त॒ तदु॑त्तानप॒दस्परि॑ ॥

*Existence, in the earlier age of Gods, from Non existence sprang.
There after were the regions born. This sprang from the productive
power ÿ g. 10-72-3*

It has been explained that: *BrĒhmaṣpati*- fundamental energy has generated the fundamental particles first, after this the regions-space came in to existence.

भू॒र्ज॑ज्ञ उ॒त्तान॑प॒दो भुव॑ आशा॑ अजायन्त । अ॒दि॒ते॒र्दक्षो॑ अजायत॒ दक्षा॑द्व॒दिति॑ः परि॑ ॥

*Earth sprang from the productive power; the regions from the
earth were born.*

Dak-a was born of Aditi and Aditi was Dak-a's Child. ÿ g.10-72-4

The earth is a planet of solar system, it has been indicated that due to the productive power of the charged particles of the nature

earth came in to the existence. Accordingly we visualize the regions from the surface of the earth. The reciprocal relationship of *Aditi-Dak-ha-Aditi*- indicates the origin of the nebula from primordial condition of nature with generation of the charged particles, accordingly from nebula the solar system and the infinite nature came in to the existence.

अदितिर्ब्रजनिष्ट दक्ष या दुहिता तव ।

तां देवा अन्वजायन्त भद्रा अमृतबन्धवः ॥

For Aditi, O Dak-a, she who is thy daughter was brought forth. After her were the blessed Gods born sharers of immortal life. 5

In an anthropomorphic manner symbolically addressing to *Dak-a*-nebula, it has been indicated that from nebula the *Aditi*- infinite nature came in to function with the natural forces. The natural forces *electricity, magnetism and weak- interaction force* have been indicated as sharer of immortal life with infinite nature.

It has been explained that with the formation of the fundamental particles *Aditi*-micro nature came in to the existence then in succession arose the earth, the spaces, *Aditi* with *Dak-a*; and after *Aditi* the Gods (natural forces) were born. The natural forces then brought the sun forward. There were eight sons of *Aditi* but eighth, *MÈrtaꣳÇa* she cast away; she brought him to be born and to die.

It is a symbolic expression for the evolution of the solar system and the *Aditi*-infinite nature. The reciprocal interrelationship of the *Aditi -Dak-a -Aditi* reveals the fact that in the initial stage of the evolution *Aditi* -micro nature with the fundamental charged particles came in to the existence. From *Aditi*-micro nature the *Dak-a*- Nebula came in to the existence, from *Dak-a*-Nebula the solar system came in to the existence. Accordingly with time *Aditi*-infinite nature came in to the existence with functions of natural forces.

Aditi represent Nature and our solar system is part of Nature, accordingly how the solar system came in to existence. It has been indicated through the eight sons of *Aditi* symbolically. The eight sons of *Aditi* are eight planets of our solar system out of which, she cast away *MÈrtaꣳÇa* to be born and to die, it means among the planets of the solar system out of eight one Sun is different. It has

been explained by saying that the Gods-Devas- fundamental particles then brought forward the Sun. The formation of the atoms and the nuclear reactions on the surface of sun with the release of solar winds has been indicated through the clouds.

यद्देवा अदः सलिले सुसंरब्धा अतिष्ठत ।

अत्रा वो नृत्यतामिव तीव्रो रेगुरपायत ॥

When ye, O Gods, in yonder deep close clasping one another stood. Thence, as of dancers, from your feet a thickening cloud of dust arose. 6

Symbolically addressing to the charged particles in the anthropomorphic manner formation of the atom has been indicated.

यद्देवा यतयो यथा भुवनान्यपिन्वत ।

अत्रा समुद्र आ गूळहमा सूर्यमजभर्तन ॥

When, O ye like Yatis, ye caused all existing things to grow, Then ye brought SÊrya forward who was lying hidden in the sea. 7

Symbolically addressing to the charged particles in an anthropomorphic manner, it has been indicated that the charged particles are building block of the creation. The charged particles are responsible for the synthesis of all existing things. They brought forward the sun as source of energy in the ocean of cosmic world of the solar system.

अष्टौ पुत्रासो अदितेये जातास्तन्व स्पृरि । देवाँ उप प्रैत्सप्तभिः परां मार्ताण्डमास्यत् ॥

Eight are the Sons of Aditi who from her body sprang to life. With seven she went to meet the God: she cast MÊrtaÇa far away. 8

The eight sons of Aditi is a symbolic expression for the eight planets of the solar system including earth, where on the earth nature exhibit its function under cyclic reactions with sun as the source of charged particles and energy. It has been expressed by saying that she cast MÊrtaÇa-sun far away. Today we know that our solar system has more than seven planets including Hershal, Neptune and Pluto. It seems probable that the Vedic seers have given importance to the seven planets, which influence life and climate on the earth at a length. As such in the Indian Astrology, the importance has been given to seven planets and with these the Rahu and Ketu have been considered as shadow planets. It is in the general practise in Indian Astrology.

सप्तभिः पुत्रैरदितिस्तु प्रैत्पूव्यं युगम् । प्रजायै मृत्यवे त्वत्पुनर्मार्ताण्डमाभरत् ॥

So with her seven Sons Aditi went forth to meet the earlier age.

*She brought MÈrtaḥÇa thitherward to spring to life and die again
ÿg. 10-72-9*

The nature is complete in it self, its functions are under the control of Bio-Geo-Chemical cycles. It has been indicated symbolically by saying that the *Aditi*-nature went forth to meet the earlier age with her seven sons- planets. It means the natural charged particles under go cyclic chain reactions, where they reach to their starting point, from where the cycle has been started.

S,—iYajña - Creation Sacrifice

The structure and function of the creation has been indicated symbolically. It has been expressed that 101 elements in the nature are just like 101 ministers, they have stretched the creation, just like a spider's web in the nature. It is due to the cyclic chain reactions in the nature. Accordingly, the food chains and food webs in the nature have been expressed in a symbolic fashion.

*The sacrifice drawn out with threads on every side, stretched by
a hundred sacred ministers and one,*

यो यज्ञो विश्वतस्तनुभिस्तत एकशतं देवकर्मभिरायतः।

इमे वयन्ति पितरो य आययुः प्र वयाप वयेत्यासते तते॥१॥

*This do these Fathers weave who hitherward and cry, Weave
forth, weave back ÿg. 10-130-1*

It has been expressed that the creation sacrifice is just like a spider's web, it has threads on every side stretched by the hundred sacred ministers and one. The food chains and food webs in the creation-system have been indicated ÿg.10-130

पुमौ एनं तनुत उत्कृण्ति पुमान्वि तले अधि नाके अस्मिन्।

इमे मयूखा उप सेदुरु सदः सामानि चक्रुस्तसराण्योतवे॥२॥

*The Man extends it and Man unbinds it: even to this vault of
heaven hath he out spun it. These pegs are fastened to the seat of
worship: they made the Sama-hymns their weaving shuttles. ÿg. 10-
130-1*

It has been expressed that the *Puru-a*- unborn fundamental energy is in the picture for the synthesis and disintegration in the nature. The Bio-Geo-chemical cycles in the nature have been indicated through the pegs and the *Soma* -synthesised materials, they are acting just like the weaving shuttles.

The Man bind it and Man unbind it- through it the importance of the bond energy for the synthesis and disintegration of the synthesised substances and the components has been indicated. The Man- represents *Puru-a*-fundamental energy. Now we know the fact that for the synthesis and disintegration of the matter in the nature, the bond energy is responsible. The bond energy is a sort of magnetic energy, it has been indicated by the *Puru-a* metaphorically.

कासीत्प्रमा प्रतिमा किं निदानमाज्यं किमासीत्परिधिः क आसीत्।

छन्दः किमासीत्त्रिउगं किमुक्थं यदेवा देवमयजन्त विश्वे। ३

What were the rule, the order and the model? What were the wooden fender and the butter?

What was the hymn, the chant, the recitation, when the God all Deities paid worship?

The questions have been raised regarding the model of the creation, how it has got the place, when the charged particles have generated the world.

अग्नेर्गायत्र्यभक्तसयुगवोष्णिहया सविता सं बभूव।

अनुष्टुभा सोम उक्थैर्महस्वान्बृहस्पतेर्वृहती वार्चमावत्॥४॥

Closely was Gāyatri conjoined with Agni, and closely Savitā combined with U-niha, brilliant with Ukthas, Soma joined Anustup: B,haspati's voice by B,hati was aided.

The formation of the charged particles with condensation of heat energy has been indicated by saying *Gāyatri* conjoined with *Agni*-heat and *Savitā* - stimulator has stimulate it with change in temperature pressure gradient, accordingly with the movements of the charged particles around the *B,haspati*- nucleus, *Soma* - magnetic energy has been generated.

The answer has been given metaphorically that creation is just like a song of fundamental energy, where *Gāyatri* represent charged particles with energy, *U-niha* represent heat, which warm up brilliantly with *Ukthas*, *Soma*-magnetic energy is just like *AnĒstup* and *B,haspati*-nucleus of the atom sing the song with *B,hati*.

विराणिमत्रावरुणयोरभिप्रीतिर्द्रस्य त्रिष्टुबिह भागो अह्नः।

विश्वान्देवाङ्गात्या विवेश तेन चाक्लप्र ऋषयो मनुष्याः॥५॥

Viraj adhered to Varuṣa and Mitra: here Tristup day by day was Indra's portion.

Jagati entered all the Gods together: so by this knowledge men were raised to ĩ-is

It has been indicated that with the formation of atom *Viraj*-fundamental energy adhered to *Varuḥa* and *Mitra*. With *Varuḥa* and *Mitra*, it has been indicated that with formation of the atom, the rays of light-received gravity, and then *tristup* day by day was *Indra's* portion. It means with time the magnetic energy with *Indra* - electrostatic energy of the nucleus has generated the electromagnetic energy in the atom. Accordingly, the charged particles-*Tristup* has found the place in the atom for their existence, and in turn the *Indra -bond energy* became the part of the atom.

The formation of the atom is the main cause of the creation, the atom- *Varuḥa* and *Mitra*, has the *Tristup*- the three charged particles, and in turn the charged particles together have find their place in the ions of the atom, molecules- *Jagati*, and accordingly, the human species has evolved from the molecules. It has been indicated by, "the men-fundamental energy has been raised to the stage of ĩ-is ". The ĩ-i is a symbolic expression for the human-being.

चाक्लृप्रे तेन ऋषयो मनुष्या यज्ञे जाते पितरो नः पुराणे।
पश्यन्मन्ये मनसा चक्षसा तान् य इमं यज्ञमयजन्त पूर्वे। १६॥

So by these knowledge men were raised to ĩ-is, when ancient sacrifice sprang up, our Fathers.

With the mind's eye I (Spirit) think that I (Fundamental energy) behold them who first performed this sacrificial worship.6.

Through the knowledge of the creation it has been explained that Men- were raised to ĩ-is, when ancient sacrifice sprang up, our Fathers. The father is a symbolic expression for the charged particles, with the actions and interactions of the charged particles in the series the creation has its beginning. In the sacrificial worship-series of actions and inter actions, the charged particles are the first. Hence the charged particles have been termed as fore fathers metaphorically to indicate the series of the actions and interactions; it is just like the series of the generations. Accordingly the living-beings have been evolved (men), the living-beings-men were raised to ĩ-is intellectual human species. Hence it has been expressed that with my mind's eye I behold them (charged

particles), who the charged particles, which have first performed the sacrificial worship.

It means the truth behind the creation can be searched and can be verified within one's own self. Hence the seer has expressed through his spirit-consciousness (Fundamental energy) in an anthropomorphic fashion that *with the mind's eye I (Spirit) think that I (Fundamental energy) behold them who first performed this sacrificial worship*.⁶ It means, after realising the truth behind the creation, a human-being can speak in this fashion after self realization, just like the revelation of Gita from the mouth of lord *Kri-na* in Srimad bhagvat Gita focussing the self in the centre.

It is possible due to the fact that the human body represents a microcosm in side a macrocosm, and the body is complete in it self. Where, in the body one can realize the presence of the self in the body, through self realization-yogic practise of meditation.

The supporter of the creation

सहस्रोमाः सहस्रन्दस आवृतः सहस्रमा ऋषयः सप्त दैव्याः।
पूर्वेषां पन्थामनुदृश्य धीरा अन्वालेभिरे रथ्यो न रश्मीन्॥७॥

The Seven God like *y-is*, they who were versed in rituals and meters, it is a metaphoric expression for the seven solar rays of the sun light and the seven planets, they are well versed in rituals and meters of the creation system. They operate and regulate the system through their electromagnetic waves and the infrared rays with sun in the centre.

Viewing the path of those of old, the sages have taken up the reins like chariot-drivers y g. 10-130-7

The seven rays and the seven planets are just like the chariot driver of the solar system. They follow the path of their old ancestors, and in succession the evolution proceed further.

It has been indicated that the life of the living-beings are regulated by the hereditary characters of their old ancestors, the sages (thought energy) of the past birth acts as reins like chariot-drivers.

These are the supporters of the creation, under which the creation is working as a system.

Conclusion - Single unified force

In a symbolic fashion the questions have been raised regarding the origin and evolution of the creation, with a curiosity to know the principles under which the creation is working.

The answers have been given metaphorically with a conclusive remark. The Vi.,vakarma has produced the earth and heaven with mighty power.

कासीत्प्रमा प्रतिमा किं निदानमाज्यं किमासीत्परिधिः क आसीत्।

छन्दः किमासीत्प्रउगं किमुक्थं यदेवा देवमयजन्त विश्वे। ३

What were the rule, the order and the model? What were the wooden fender and the butter?

What were the hymn, the chant, the recitation, when the God all Deities paid worship? y g.10-130-3

किं स्विदासीदधिष्ठानमारम्भणं कतुमत्स्विदासीत्।

यतो भूमिं जनयन्विश्वकर्मा वि द्यामौर्णोन्महिना विश्वचक्षाः॥२॥

What was the place whereon he took his station? What was it that supported him? How was it?

Whence Vi.,vakarma seeing all, producing earth with mighty power disclosed the heavens.y g. 10-81-2

The questions have been raised in different ways regarding the creation symbolically, and their answers have been given symbolically about the place and the support, when Vi.,vakarma-the creator has produced the mighty earth.

विश्वतश्चक्षुरुत विश्वतोमुखो विश्वतोबाहुरुत विश्वतस्पात्।

सं बाहुभ्यां धमति सं पवत्रैर्वावाभूमीं जनयन्देव एकः॥३॥

He who hath eyes on all sides, round about him, a mouth on all sides, arms and feet on all sides.

He the Sole God, producing earth and heaven, weldeth them, with his arms as wings, together.y g.10-81-3

Metaphorically, the omnipotent nature of the fundamental energy has been expressed, the bond energy of the atoms has been expressed, that it is just like his arm as wings, which bind the atoms.

किं स्विद्धनं क उ स वृक्ष आसु यतो द्यावापृथिवी निष्ठतुक्षुः।

मनीषिणो मनसा पृच्छतेदु तद्यद्व्यतिष्ठद्भुवनानि धारयन्॥४॥

What was the tree, what was wood in sooth produced it, from

which they fashioned out the earth and heaven?

*Ye thoughtful men enquire within your spirit whereon he stood
when he established all things ĩ g.10-81-4*

The answer of this question has been given that *the Vi,,vakarma* has produced the earth and heaven with mighty power. We can grasp the answer in modern terminology that with transformation of the fundamental energy first in the series charged particle have been generated, with condensation of heat energy in them. There after change in temperature pressure gradient has stimulated the process. At a particular stage with cooling, the charged particles have generated the atom, with spinning movements of the electrons around the nucleus, and generation of the magnetic energy in side the atom. The magnetic energy of the atom is synonym to the fundamental energy, hence it has been said that the charged particles, and fundamental energy have found the station. It has supported the creation, and the same is the building block of the creation. It has been expressed metaphorically that fundamental energy - *Vi,,vakarma* has eyes on all sides round about him, a mouth on all sides, arms and feet on all sides, indicating the omniform and omnipotent nature of the fundamental energy in the creation.

It has been expressed that fundamental energy is the single unified force, which has generated the earth and heaven. The magnetic energy in the atom with *Indra* - electrostatic energy of the nucleus has generated the electromagnetic bond energy.

The electromagnetic bond energy is the shaper of the creation with bond energy. It has been expressed metaphorically *He weldeth them, with his arms as wings, together, the Sole God, producing earth and heaven.*

The formation of the atom is the main factor in the evolution of the creation, and accordingly, the human species has been evolved. It has been indicated by the men - the fundamental energy, has been raised to the stage of ĩ-*is*, with formation of the atom and evolution. The ĩ-*is* is a symbolic expression for the human species.

सहस्रोमाः सहस्रन्दस आवृतः सहस्रमा ऋषयः सप्त दैव्याः।

पूर्वैषां पश्चादनुदृश्य धीरा अन्वालेभिरे स्थ्योऽ न रश्मीन्॥७॥

They who were versed in ritual and metre, in hymns and rules, were the Seven God like ÿ-is.

Viewing the path of those of old, the sages have taken up the reins like chariot-drivers ÿ g. 10-130-7

The Seven God like ÿ-is, they who were versed in rituals and meters, it is a metaphoric expression for the seven solar rays of the sun light and the seven planets, they are well versed in rituals and meters of the creation system. They operate and regulate the system through their electromagnetic waves and the infrared rays with sun in the centre.

The Seven God like ÿ-is, they who were versed in rituals and meters, it is a metaphoric expression for the seven solar rays of the sun light and the seven planets, they are well versed in rituals and meters of the creation system. They operate and regulate the system through their electromagnetic waves and the infrared rays with sun in the centre.

Viewing the path of those of old, the sages have taken up the reins like chariot-drivers ÿ g. 10-130-7

It has been indicated that the life of the living-being is regulated by the hereditary characters of old ancestors, the sages (thought energy) of the past birth acts as reins like chariot-drivers.

How the seven planets influence life and climate on the earth, it has not been established fact in modern science, similarly about the cycle of the rebirth and death there is no scientific work has been done so far.

The old ancestor is a metaphor for the hereditary characters, they regulate the life cycle, through the hereditary characters, and deeds of an individual of his past birth, regulates the life like a chariot driver. On the earth, the first cell and the genetic material chromosome have maintained their continuity through multiplication and reproduction. It has been indicated by the old ancestor and the sages metaphorically represent the past deeds of an individual, which control the life of an individual just like chariot driver control the horse through reins.

The creation is a complex network system just like a spider's

web in the nature. Accordingly the origin and evolution of the creation has been described symbolically, it is very difficult to grasp the conclusions drawn by the seers in the Vedic hymns. Hence it has been expressed in the final conclusion.

तमिद्गर्भं प्रथमं दधृ आपो यत्र देवाः समगच्छन्त विश्वे।
अजस्य नाभावध्येकमर्पितं यस्मिन्विश्वानि भुवनानि तस्थुः॥६॥

The waters they received that germ primeval wherein the Gods were gathered all together. The creation is rested set upon the Unborn's navel, where in abide all things existing ÿ g. 10-82-6, accordingly to search the truth behind the creation, the self enquiry of the truth has been suggested with a warning. By saying, *Ye thoughtful men enquire within your spirit whereon he stood when he established all things* ÿ g.10-81-4

न तं विदाथु य इमा ज्ञानान्यहुष्माकुमन्तरं बभूव।
नीहरेण प्रावृता जल्व्या वासुतृष उक्थशासश्चरन्ति॥७॥

Ye will not find him who produced these creatures: another thing hath risen up among you.

Enwrap in misty cloud, with lips that stammer, hymn-chanters wander and are discontented ÿ g. 10-82-7

It has been indicated that due to the individual consciousness a self-ego has arisen among you, which has enveloped the self in misty clouds, only with chanting the hymns you could not search the truth.

Summary of the Creation

The Hiraṇyagarbha SÊktay g.10-121, has been depicted on the seal symbolically, which explain the origin and evolution of the creation, and the building blocks of the creation system.

The Unicorn, it is a metaphoric representation of fundamental energy in the cosmos, the single horn indicate the evolution of the creation from an single ancestor, the incense burner below the neck is symbol of light and energy, it indicates sun as the source of energy.

The evolution of the creation has been depicted in the series, indicating the formation of Nebula, from it the charged particles with atom came into the existence. **The atom** constitutes the

building block of the creation. The atoms have synthesized the molecules of DNA, and the **chromosome**. The atom and the molecule of the DNA are the building blocks of the territories, and the communities of the living-beings. **The power house** of the living-beings has been indicated by the arch with knob like structures, around the deity, which indicate the oxidative coupling chain reactions in the mitochondria.



Figure - II Unicorn sealing and pictographs on one side,

a. Square molded tablet from Harappa: with impressions on both faces. The obverse sealing has five script signs, and shows a finely carved unicorn facing a ritual offering stand.

Material terracotta

Dimension 2.0 x 1.89 cm thickness Harappa Museum. H95-2485



The Unicorn indicates, the fundamental energy, the incense burner indicates, sun as the source of light and energy.

हिरण्यगर्भः समवर्तताग्रे भूतस्य जातः पतिरेक आसीत्।

स दाधार पृथिवीं द्यामुतेमां कस्यै देवाय हविषां विधेम॥१॥

In the beginning rose Hiraṇyagarbha, born only Lord of all created beings.

He fixed and holdeth on this earth and heaven. What God shall we adore with our oblation? y g. 10-121-1



Nebula

The pictograph indicates the formation of the **Nebula** in the early primitive condition, with generation of energy in the centre. It has given birth to the solar system. The generation of energy in the centre of the nebula, atom, and the cell, constitute the base of the creation, hence, the fundamental energy has been termed as *Hiraṇyagarbh*, the Lord of the created beings. It has been indicated.

य आत्मदा बलदा यस्य विश्वं उपासते प्रशिषास्य देवाः।
यस्य छायामृतं यस्य मृत्युः कस्मै देवाय हविषा विधेम॥२॥

Giver of vital breath, of power and vigour, he whose commandments all the Gods acknowledge:

The Lord of death, whose shade is life immortal, What God shall we adore with our oblation? 2



The pictograph indicates the three charged particles (electron, proton and neutron), and generation of **atom**, the building block of the creation.

The magnetic energy generates in the atom, due to the vibratory movements of the electrons around the nucleus, the magnetic energy of the atom, and electrostatic energy of the nucleus produces electromagnetic bond energy. Accordingly, the molecules, matter and the substances of high molecular weight are synthesized from the atoms. Accordingly, the living-beings, with vital breath came into the existence, the synthesis and degradation in the living-beings is controlled by the electromagnetic bond energy, through oxidation and reduction reactions. Hence, the fundamental energy has been termed as Lord of vital breath and death.

यः प्राणतो निमिषतो महित्वैक इद्राजा जगतो बभूव।
य ईशे अस्य द्विपदश्चतुष्पदः कस्मै देवाय हविषा विधेम॥३॥

Who by his grandeur hath become Sole Ruler of all the moving world, that breathes and slumber;

He who is Lord of men and Lord of cattle, What God shall we adore with our oblation? 3



The pictograph indicates the synthesis of the molecules of DNA and **chromosome** from the atoms. It is the base of the biological world.

The high molecular weight molecules of the DNA have been synthesized from the atoms, the DNA, have synthesized the chromosomes, they under go crossing over, accordingly, from the DNA with recombination, the biological world came into the existence with evolution. Hence, the fundamental energy has been termed as the Ruler of all the living-beings.

यस्येमे हिमवन्तो महित्वा यस्य समुद्रं रसया सहाहुः।
यस्येमाः प्रदिशो यस्य बाहू कस्मै देवाय हविषा विधेम॥४॥

His, through his might, are these snow-covered mountains, and men call sea and RasĒ his possession:

His arms are these, his are these heavenly regions. What God shall we adore with our oblation? 4



The blocks in the pictograph indicate the development of the territories, and the regions on the earth, where the building blocks are the atoms and the molecules. It has been indicated by the snow-covered mountains, the sea, and the heavenly regions.

येन द्यौरुग्रा पृथिवी च दृढा येन स्वः स्तभितं येन नाकः।
यो अन्तरिक्षे रजसो विमानः कस्मै देवाय हविषा विधेम॥५॥

By him the heavens are strong and earth is steadfast, by him light's realm and sky-vault are supported:

By him the regions in the mid-air were measured. What God shall we adore with our oblation? 5

The earth is mighty, due to the earth's geomagnetic field, the atmospheric layers in the mid air, are due the magnetosphere processes in the magnetosphere of the earth, hence, it has been expressed that the earth and heaven are strong, due to him, and atmospheric layers in the mid air are due to him.

यं क्रन्दसी अर्वसा तस्तभाने अभ्यैक्षतां मनसा रेजमाने।
यत्राष्टि सूर उदितो विभाति कस्मै देवाय हविषा विधेम॥६॥

To him, supported by his help, two armies embattled look while trembling in their spirit,

When over them the risen Sun is shining. What God shall we adore our oblation? 6



The second block in the seal, indicate the development of the communities of the living-beings symbolically. They came into the existence from the molecules of DNA. Accordingly, the living-beings, with vital breath came into the existence with evolution, the synthesis and degradation in the living-beings is controlled by the electromagnetic bond energy, through oxidation and reduction reactions. These two reactions, oxidation and reduction operate in succession, without end in cyclic manner. They control the synthesis and degradation with respiration as food, during the life;

they disintegrate the body after death. They have been termed metaphorically as two-army of the fundamental energy.

Their actions and interactions in the living-beings, have been indicated by when trembling in spirit, they look like embattled.

यत्राष्टि सूर उदितो विभाति, **the sun-rise**, just like sun rises in the morning, and set in the evening, in the same fashion, the living-beings appear with life, and move towards their death with end of life. It has been indicated by rising sun metaphorically.

Hence the fundamental energy has been termed as Lord of vital breath and death. **How the fundamental energy feed the living-beings? It has been indicated on the reverse of the seal.**



Figure - III

b. Reverse cat. No 25

Material terracotta

Dimension 2.0 x 1.89 cm thickness Harappa Museum. H95-2485

Meadow and Kenoyer 1997

b. A deity under pipal arch, it indicates that all the components of the creation are interlinked with the fundamental energy, just like the branches of a tree. He is in the middle of the creation.

The arch around the deity is a symbolic expression of single unified force in the centre, and the arch is an electron microscopic structure of mitochondrial cristae, on the inner surface layer of cristae, oxysomes, also known as elementary particles are present. The oxysomes are stalked knob like structure. They are the centre of electron transport chain, and oxidative phosphorylation with generation of ATP- Adenosine Tri Phosphate. The oxidative electron coupling factor is located in the oxysomes. **It is the power house of the cell and the living-beings.**

आपो ह यद्बृहतीर्विश्वमायुनार्धं दधाना ज्ञनयन्तीरग्निम्।

ततो देवानां समवर्ततासुरेकः कस्मै देवाय हविषा विधेम॥७॥

*What time the mighty waters came, containing the universal germ,
producing Agni,*

*Thence sprang the Gods' one spirit into being. What God shall we
adore our oblation? 7*

A question has been asked that at which time the universal germ of
life appear with mighty waters, and production of energy? Then
the natural forces set in full function as one spirit into being.

यश्चिदापो महिना पर्यपश्यद्वक्षं दर्शना जनयन्तीर्यज्ञम्।

यो देवेष्वर्धं देव एक आसीत्कस्मै देवाय हविषा विधेम॥८॥

*He in his might surveyed the floods containing productive force and
generating Worship.*

*He is the God of Gods, and none beside him. What God shall we
adore our oblation? 8*

The answer has been given, He in his might surveyed the floods
containing productive force, and generating sacrifice.

It has been depicted on the seal by the symbolic figure of the deity
in the middle of the arch, just like surveying the cosmic floods, and
looking towards the arch to generate the sacrifice. The knobbed
arrow like structure on the arch in series, they represent the
elementary particles on the surface of the inner layer of the cristae
of the mitochondria, where oxidative phosphorylation, generates
the productive power ATP- Adenosine Tri Phosphate, through the
series of ETC electron transport chain, in the mitochondria. The
oxidative electron coupling factor is located in the oxysomes-
elementary particles. **It is the power house of the cell and the
living-beings.**

The sun-rise is symbol of life, and energy, in the same way, the
oxidative phosphorylation is the source of energy in the living-
beings. It has been depicted on the seal, through the arch with
similar structures in the series.

A stylized branch that has three “leaves” projects from top of the
head of men, it indicates the food of respiration-glucose
symbolically.

Each end of the arch terminates in a tight swirl, it indicate the
actions and interactions of oxidation and reduction chain reactions
in a cyclic manner.

The oxidation and reductions operate in succession, without end in cyclic-manner. They control the synthesis and degradation in the nature, under cosmic principles. It has been indicated symbolically by generating sacrifice जुनयन्तीर्युजम्

to him, supported by his help, two armies, and **termination of arch in tight swirl on the seal.**

मा नो हिंसीज्जनिता यः पृथिव्या यो वा दिवं सत्यधर्मा जुजान।
यश्चापश्चन्द्रा बृहतीर्जुजान् कस्मै देवाय हविषा विधेम॥९॥

Ne'er may he harm us who is earth's Begetter, nor he whose laws are sure, the heavens' creator,

He who brought forth the great and lucid waters, What God shall we adore our oblation? 9

It has been expressed that the fundamental energy, has generated the earth and heaven, and brought the lucid life supporting waters, under the cosmic principles.

प्रजापते न त्वदेतान्यन्यो विश्वा ज्ञातानि परि ता बभूव।
यत्कामास्ते जुहुमस्तन्नो अस्तु वयं स्याम पतयो रयीणाम्॥१०॥

PrajĒpati! Thou only comprehended all these created things, and none beside thee.

Grant us our heart's desire when we invoke thee: may we have store of riches in possession.

It has been expressed that *PrajĒpati!* The Lord of beings has created all, who have existence.

In the beginning of the hymn, the fundamental energy has been designated as *Hiraṇyagarbh* and in the last *PrajĒpati!* It is due to the generation of fundamental energy in the womb-centre of the nebula, atom, and the cell, it constitute the base of the creation, and **consciousness**, hence, the fundamental energy has been termed as *Hiraṇyagarbh*, ĩ g.10-121-1

The fundamental energy, control synthesis and degradation in the nature, through his two armies, the oxidation and reduction.

The fundamental energy support the life, through the generation of chemical energy in the mitochondria, hence, the chemical energy has been termed as *PrajĒpati*-the Lord of beings.

6. The Origin of Creation

In the *Puruṣa Sūtra*, it has been expressed that the creation came to the existence, under the laws of thermodynamics.

a. Modern Concept of Energy

The whole universe is filled with energy, there is only energy, at some places energy get condensed in as electrons, protons and neutrons, which bind together to produce atoms, and atoms in turn bound in to the molecules that produce substances, to whom we can touch, feel and call it as mass energy. In Einstein's equation

$E = mc^2$ it means energy and mass can be converted in to each other, where E =Energy, m=Mass and c =Velocity of light.

Our universe is a vast ocean of energy, where energy under goes transformation, which follows the laws of thermodynamics. Which state that energy is unborn and eternal, but energy can be converted from one form to another form with a successive loss of energy at every transfer. The energy can be defined as capacity to do work. The energy at rest is known as potential energy and the energy at work is known as kinetic energy, within this framework all other forms of energy such as magnetic, electric, gravitational, heat and metabolic energy are working in the universe under the laws of thermodynamics, the laws of thermodynamics also state, when there is an increase it must be balanced by a decrease somewhere else. It means from the energy point of view whole universe is a single unit we are only a small part of the same.

b. Creation sacrifice- *S, —i-Yajña*

The Vedic *yajña* is a term for the actions and interactions, the whole creation is a *S,—i-Yajña*, where actions and interactions are going on in series. The Vedic seers have indicated it in the first hymn of the Rig-Veda through the metaphor of *Yajña* y g. 1-1-1

अग्निमीळे पुरोहितं यज्ञस्य देवमृत्विजम्। होतारं रत्नधातमम्॥१॥

I invoke the Agni- (fundamental energy) who is the priest, Deva (fundamental particles), sacrificer, and reciter of the S,—i, Yajña, which is the treasure of jewels.

I invoke fundamental energy, he is the priest as controller of the creation sacrifice-*yajña*, he is *the Deva*-fundamental particles of the *yajña*. He is sacrificer, it means he add fuel in the creation for *yajña*-actions and interactions, he is the reciter- who chant the hymns during the *yajña*, it means he is the source of actions in the creation and he is treasure of jewels. It means the fundamental energy is the source of every thing, which is going on and present in the creation.

How the creation has been evolved? It has been indicated in the *Puru-a sĒkta*, where the fundamental energy has been imagined metaphorically in the form of a *Puru-a*, with innumerable head, eyes and feet, he pervades the earth and the world and even above and in ten finger wide space, it indicates that the fundamental energy-*Puru-a* is present every where.

c. Laws of Thermodynamics

The *Puru-a SĒkta* is most important hymn of the whole Vedic literature, which symbolically reveals the secret of the creation in only sixteen-stanza. In the *Puru-a sĒkta* - fundamental energy has been described as the personal life giving principle, as well as the original source of the creation, from where the evolution of the creation has been traced, with the Laws of Thermodynamics (y g. 10-90-1 to 4),

सहस्रशीर्षा पुरुषः सहस्राक्षः सहस्रपात्।

स भूमिर्विश्रतो वृत्वात्यतिष्ठद्दशङ्गुलम्॥

A thousand heads hath Puru-a, a thousand eyes,

A thousand feet on every side pervading earth he fills a space ten finger wide y g. 10-90-1

The fundamental energy has been metaphorically imagined in

the form of a *Puru-a* The *Puru-a*-fundamental energy has been imagined symbolically with innumerable head, eyes and feet, who pervade the earth and even above it, *he fills a space ten finger wide*, it means in the heart region. It indicates that the fundamental energy is universally present every where.

पुरुष एवेदं सर्वं यद्धूतं यच्च भाव्यम्।
उतामृतत्वस्येशानो यदन्ननातिरोहति॥२॥

*This Puru-a is all that yet hath been and that is to be;
The lord of immortality, which waxes greater still by food*

ÿ g. 10-90-2

It has been indicated here that the fundamental energy is eternal but undergo transformation, through which it increases, which is its food symbolically. The lord of immortality, it means it remains constant in all state and imperishable.

एतावानस्य महिमातो ज्यायाश्च पूरुषः

पादोऽस्य विश्वा भूतानि त्रिपादस्यामृतं दिवि॥

So mighty is his greatness; yea greater than this is Puru-a. All creatures are one-fourth of him, three-fourths eternal life in heaven ÿ g.10-90-3

Here, it has been said that the cosmos is like a vast ocean of fundamental energy, the visible world is only one-fourth part of him and the rest three-fourth part of it is in the heaven above the visible world.

त्रिपादूर्ध्व उटैत्पुरुषः पादोऽस्येहाभवत्पुनः।

ततो विष्वङ् व्यक्रामत्साशनानशने अभि॥

With three-fourths Puru-a went up: one fourth of him again was here. Thence he strode out to every side over what eats not and what eats ÿ g. 10-90-4

Here, it has been said that the three-fourth part of the fundamental energy is invisible in the heaven, only its one-fourth part is under going transformation again and again. It spreads on every side as animate and inanimate creation.

d. Formation of the Nebula

Under the laws of thermodynamics how the process of the creation has been initiated? It has been indicated through the formation of the nebula in the early stages of the development in a symbolic fashion.

ततो विराडजायत विराजो अधि पूर्यः।

स जातो अत्यरिच्यत पश्चाद्भूमिर्था पुरः॥५॥

From him VirEj was born; again Puru-a from VirEj was born.

As soon as he was born he spread eastward and westward o'er the earth y g.10-90.5

From the *Puru-a*, *VirEj*-infinite universe was born, from that again *Puru-a* was born, the reciprocal inter-relationship has a deep meaning, which is a indication towards the generation of the magnetic energy due to the spinning of the charged particles and the astronomical bodies.

TasmEd VirE-ajEyata- It means in the precosmic conditions only *Puru-a*- fundamental energy was there. From him *VirEj* was born, it means infinite universe with the charged particles came in to the existence, which produce the nebula in the earlier stage of the creation.

VirEjo adhi Puru-aI- again from the *VirEj*, *Puru-a*-fundamental energy was born. It means due to the spinning movement of the charged particles, *Puru-a* (fundamental energy) was generated in the nebula and the gaseous clouds.

Sa jEto aty aricyata- he spreads in all the direction. It means due to the spinning movements of the charged particles in the Nebula, the gaseous clouds have been formed. The gaseous clouds have spread in all the directions. It is an indication towards the modern Big-bang theory.

Pa,cEd bhEmim atho puraI- after it the earth and *purah*, it means the earth and the planets have came in to the existence after this.

a. Electron theory

यत्पुरुषेण हविषा देवा यज्ञमर्त्नवत।

वसुन्तोऽस्यासीदाज्यं' ग्रीष्मद्विधमः श्रद्धविः॥६॥

When God's prepared the sacrifice with Puru-a as their offering,
Its oil was spring, the holy gift was autumn; summer was the wood
y g.10-90-6

Yat Puru-eṣā havi-Ē it means with the stimulation from the Puru-a- fundamental energy the Deva- charged particles performed the sacrifice- series of actions and interactions.

DevĒ yajṁam atanvata-The process of the Yajṁa--actions and interactions was spread over by the Deva- fundamental charged particles.

Vasanto asyasid aḥyam - for the series of actions and interactions, the spring season is like Ghee-,

Gri-ma idhmaḥ, sarad dhavi - the summer-hot season act as fuel and autumn-cold season act as **Havi-** stimulator. It indicates about the importance of the temperature pressure gradient for the creation, under which synthesis and disintegration is going on in the nature in a cyclic manner.

f. Atomic structure

तं यज्ञं बर्हिषि प्रोक्षन् पुरुषं जातमग्रतः।
तेन देवा अयजन्त साध्या ऋषयश्च ये॥७॥

They balmed as victim on the grass Puru-a born in earliest time,
With him the Deities and all SĒdhyas and y-is sacrificed y g.10-90-7
Tam yajṁam- In this great sacrifice of the creation

Barhi-i prauk-an puru-am jĒam agrataḥ - The fundamental energy, which was generated in the earlier stage act as the platform, with it the charged particles have performed the sacrifice, it means formation of the atom has been indicated, where positively charged proton and neutral neutron form the nucleus and around it negatively charged electrons move in elliptical orbits. Due to the spinning movements of the electrons around the nucleus magnetic energy generates. It has been indicated in a symbolic fashion through the **barhi-i-** platform is the nucleus and **prauk-an-** is an expression for the generation of magnetic energy in the atom. The energy generated earlier in the atom as Puru-a- fundamental energy has been expressed.

Tena devÈ ayajanta sÈdhyÈ ÿ-aya,, ca ye-- than the *Deva* - fundamental charged particles undergo the series of actions and interactions from them *SÈdhyas*-matter and the *ÿ-is* have been generated, which acted accordingly. *SÈdhyas* is a symbolic expression for the ingredients of the creation and *ÿ-is-* is a symbolic expression for the living-beings.

g. Components of the creation

तस्माद्यज्ञात्सर्वहुतं सम्भृतं पृषदाज्यम्।
पृशूँस्तच्चक्रे वायव्यानारण्या ग्राम्याश्च ये॥८॥

From that great general sacrifice the dripping fat was gathered up.

He formed the creatures of the air, and animals both wild and tame ÿ g.10-90-8

TasmÈd yajÈ sarvahuta sambh,tam prsadÈjyam- It means from that great sacrifice-actions and interactions, the complex substances like *curd and Ghee* have been synthesized. The *curd* is a symbolic expression for the condensation and gathering of the materialistic substances. The *Ghee* is the symbolic expression for the complex substances of the living-beings.

h. Life cycles of the living-beings

PasÈn tÈn cakre vÈyavyÈn, araẏyÈn gramya,, ca ye - and then in the series the animal cycle of the air, forest and the village were born.

It has been indicated symbolically that all the complex substances of the nature and the life cycles of the creatures have came in to the existence due to the chain reactions.

In the primitive conditions formation of the nebula was there with the interactions of energy and generation of the charged particles, due to the movements of charged particles, magnetic energy gets generated. The charged particles with their opposite charges bind together to produce atoms, atoms consists of subatomic units-electron, proton and neutron. Electrons are extremely light having cloud like density of mass energy with a negative electric charge, protons are much larger in mass than electron and have a positive charge, neutron have a mass energy

equal to that of proton and are electrically neutral. Although other types of sub atomic particles have also been identified, but the properties of atoms and their ability to react chemically can be explained on the basis of these three elementary particles, which constitute the base of the whole nature.

In a atom positively charged protons and neutrons constitute the nucleus, around which vibrating clouds of negatively charged electrons move in elliptical orbits, due to the vibratory movements and spin of electrons, magnetic energy get generated. The magnetic energy with the electrostatic force of nucleus produces electromagnetic energy, which binds the atoms of similar nature. The atoms of different elements can produce diatomic molecules, even poly atomic complex molecules and chains of thousand of atoms like RNA and DNA may have produced. Which are the products of chemical interactions of the outermost electrons to yield chemical bond or a covalent bond, when two atoms share electrons or ionic bond, when electrons are transferred from the atom to atom. It is the electromagnetic energy, which initiate the formation of bonds. Through these bonds the electromagnetic energy has maintained its continuity in atoms, molecules, substances and living-beings. It has been explained metaphorically through both the father and both the son.

उतैषां पितोत वा पुत्र एषामुतैषां ज्ये उत वा कनिः।

एको ह देवो मनसि प्रविष्टः प्रथमो जातः स उ गर्भेऽ अन्तः॥

Both their father are also their son; both the chief are also the meanest (Kani—ha) of them; the one god, who has entered in to the mind, born the first, and he within the womb Ath. 10-8-28

It has been expressed that the fundamental life energy-consciousness has generated first in the atoms and in the womb. It has been termed as first born, than the fundamental energy proliferate along with the electrostatic energy of the nucleus as electromagnetic bond energy. They together have been termed as both the father and their son metaphorically. The electromagnetic energy is present in the universe and at the micro level in the atom and the cell. Hence it has been termed as chief as well as minute

(kani—ha)

तस्माद्यज्ञात् सर्वहुत ऋचुः सामानि जज्ञिरे।
छन्दाःसि जज्ञिरे तस्माद्यजुस्तस्मादजायत॥९॥

From that great general sacrifice ÿcas and SÈma hymns were born.

There from were spells and charms produced; the Yajus had its birth from it ÿ g.10-90-9

***TasmÈd yajꣳat sarvahuta ÿ caì , sÈmÈni jajꣳire tasmÈd
Yajus tasmÈd ajÈyata.***

From that great series of actions and interactions, the atom, molecules, matter, and the living-beings have evolved, accordingly, the ÿcas, SÈma hymn and the chants, the meter and Yajus were born. It means the source of knowledge about the language and yajus-sacrificial formulas are due to him.

तस्मादश्वा अजायन्त ये के चौभयादतः।
गावो ह जज्ञिरे तस्मात्तस्माज्जाता अजावयः॥१०॥

From it were horses born, from it all cattle with two rows of teeth:

From it were generated kine, from it the goats and sheep were born ÿ g.10-90-10

TasmÈd a,ꣳÈ ajÈyanta, ye ke cha ubhayÈdataì - From that great sacrifice arose horse and all cattle such as have two rows of teeth.

gÈvo ha jajꣳire tasmÈt; tasmÈj jÈÈÈ ajÈvayaì - From him gavo and ajavayah were born.

It means all types of higher animals have been evolved from him. In the Vedas five types of animals *Paꣳca Jana* have been recognised horse, cow, goat, man and plants.

The stress on the *GÈvo* and *AjÈ-vayah* separately is an indication towards the nourishment of the living creatures, where *GÈvo*- cow, who feed the human beings through milk and *AjÈ-avayah*, it is a indication towards unborn plant pigment chlorophyll as protector, which is present in the plant cell as de-novo with cell division. Due to the presence of chlorophyll the plants are primary food producer, and they feed the animals. It means *AjÈ* means unborn and *avayah* is a derivative of *Avi* (protector of plants- chlorophyll).

It can be confirmed from Atharva-veda-

अविर्वै नाम देवतर्तेनास्ते परीवृता। तस्या रूपेणेमे वृक्षा हरिस्ता हरितस्रजः॥ ३ १॥

Avirve nam devtartenaste parivrata,

Tasya ropeneme vraksha harita hariesrazah

Atharva-veda 10-8-31

The deity *Avi* by name sits enveloper with right; by her form these trees (are) green, green-garlanded. The presence of chlorophyll has been indicated as protector of the plants.

i. Human society

Tracing the evolution of the creation from the *Puru-a* - fundamental energy, it has been indicated that the human-beings have also evolved from the same. Accordingly the importance of the persons in the society, according to the quality has been indicated metaphorically.

यत्पुरुषं व्यदधुः कतिधा व्यकल्पयन्।

मुखं किमस्यासीत् किं बाहू किमूरु पादा उच्येते॥११॥

When they divided the Puru-a how many portions did they make?

What do they call his mouth, his arms? What do they call his thighs and feet ? g.10-90-11

Yat Puru-am vyadadhu, katidhE vi akalpayan? How the *Puru-a*- the fundamental energy has been imagined in the society?

Mukham kim asya Kim bEhu- What is his mouth, the arms.

Kim EÊ pEda ucyete – from where his thigh and feet have been produced.

ब्राह्मणोऽस्य मुखमासीद् बाहू राजन्यः कृतः।

ऊरू तदस्य यद्वैश्यः पुद्गयाः शूद्रो अजायत॥१२॥

He BrEhamin was his mouth, of both his arms was the Rajanya made.

His thigh became the Vai,ya, from his feet Sudra was produce ? g.10-90-12

BrEhmao' asya mukham asid, BrEhamin are like his mouth,

Bahu rajaniah krtah; K-atriya is like his arms.

EÊ tad asya yad vai,ya; Vai,ya is like his thigh,

PadbhyÈm fudro ajÈyata, from his feet *fudra* is born.

The answer has been given that ***PadbhyÈm fudro ajÈyata*** - that from his feet *fudra*- the persons are born without knowledge, which indicates that all are initially born as ignorant of knowledge. With the development of the physical body, with their mental ability and the quality, they acts in the society as *Vai,,ya*, who support the society through business, they are like thigh of the *Puru-a*, the warrior class who protects the society with physical strength, they are like his arms, and the intellectuals, who give guidance to the society through knowledge, they are like his mouth.

It is important to note that only the birth of the *fudra* from the feet has been indicated, otherwise it has been said that *BrÈhmin* became like his mouth, *K-atriya* became like his arms and *Vai,,ya* became like his thigh. It means all are born like *Sudra* with birth,

j. Human body as microcosm

The human body is a microcosm inside a macrocosm- it has been indicated through the reciprocal interrelationship of the human body and the universe.

चन्द्रमा मनसो जातश्चक्षुः सूर्यो अजायत।
श्रोत्राद्वायुश्च प्राणश्च मुखादग्निर्जायत॥१३॥

The Moon was gendered from his mind and from his eye the sun had birth;

Indra and Agni from his mouth were born, and VÈyu from his breath
j g.10-90-13

In the human-beings, the mind is like a moon, from the eyes -the sun had birth, it means the man has the vision through the eyes to see the sun, the *Indra (Electricity)* and *Agni* - Heat energy are born from the mouth of the *Puru-a*, through which the man has life. In the man breathing is like the breath of the fundamental energy- *Puru-a*.

It means through these organs of the human body, the man has relationship with the universe.

नाभ्यां आसीदुत्तरिक्षः शीर्ष्णो द्यौः सर्ववर्त्तत।
पृथ्वां भूमिर्दिशः श्रोत्रात्तथा लोकाँऽअकल्पयन्॥१४॥

Forth from his navel came mid air; the sky was fashioned from his head;

Earth from his feet, and from his ear the regions. Thus they formed the world ि g. 10-90-14

Comparing the universe with the man, it has been said that the mid air is the naval centre of the creation, which nourish the creation through the ionosphere--processes, the sky has been designated as his head, from where the sun protects the creation from all side. The earth has been compared with his feet, the ear has been compared with the regions, through which man has the sense of direction.

It means the universe has the connection with the human body through the mid air, sky and the earth, where ear give the sense of direction, thus they have indicated the co relation of the human body with the universe through reciprocal interrelationship.

k. Cosmic Principles

The creation is working as a system under the cosmic principles. These principles have been given symbolically in the last.

सप्तस्यासन् परिधयस्त्रिः सप्त समिधः कृताः।
देवा यद्यज्ञं तन्वाना अबध्नन्पुरुषं पशुम्॥

Seven fencing -sticks had he, thrice seven layers have been prepared, When the Gods, offering sacrifice, bound, as their victim, Puru-a ि g. 10-90-15

It has been expressed that the process of creation has been initiated. When the fundamental particles are bind in the atom, due to the spinning of the electrons around the nucleus electro-magnetic energy generates, in this way the fundamental energy (*Puru-a*) has bound in side the atoms, it binds the atoms and accordingly the creation came in to the existence. For the functions of the creation seven sticks (seven planets), twenty-one fuel are in operation, these twenty-one fuel represents twelve months, six seasons and the three weather (Hot, cold and the rainy season). Through them the creation is working as a system, it has three centres -sky, atmosphere and the earth as indicated by the three layers. In this way a picture of the creation system has been expressed symbolically.

यज्ञेन॑ यज्ञम॑यजन्त दे॒वास्तानि॑ धर्मा॑णि प्रथ॒मान्या॑सन्।
ते ह॒ नाकं॑ महि॒मानः॑ सचन्त॒ यत्र॑ पूर्वे॒साध्याः॑ सन्ति॑ दे॒वाः।

Gods sacrificing sacrificed the victim: these were the earliest ordinances. The mighty ones attained height of heaven, there where the SÈdhyas, Gods of old, are dwelling ÿ g. 10-90-16

The *Yajña*-sacrifice means action and interactions, here it has been said that from actions and interactions again actions and interactions get generated, where according to the cosmic law-*Dharma*, *Deva* - fundamental particles are the first, with their activity they get reached to the height of matter and the fundamental particles- *Deva*. It means the fundamental particles are the first in the series of actions and interactions. Through their activity they are converted into the matter and again reach to their original old state of *Deva* - fundamental particle through reversible reaction. It is an indication towards the natural cycles, through which the natural components have been synthesized and disintegrate in the reversible direction.

The *Puru-a sÊkta* is considered as latest among the ÿ gvedic hymns, it reveals the climax of the Vedic culture. It has the credit for the evolution of the spiritualistic way of life after the *Vedic* culture and *BrÊhma* period, when the meaning of *Yajña*, is misinterpreted as only ritual.

Part II
Vedic Biology & Genetics

7. Photo-synthesis
Wedding of Sôryâ's Daughter-Aryaman

The photosynthesis is a process, during which the green plants synthesize glucose as food material from the atmospheric carbon dioxide and water in the presence of chlorophyll and light. During this process the transformation of the light energy into the chemical energy is there, which is the source of life and food for the living organisms. Today it is also a fact that all the complex organic substances are the products of the glucose metabolism inside the cell. It is a unique event in the history of origin of life on the earth. It is the only source of the chemical energy and carbon skeleton of the living-beings on the earth.

The process of the photosynthesis has been described through the metaphor of the marriage ceremony in the wedding hymns of the *ṛgveda* 10-85 having 47 verses and Atharvaveda book 14 divided it into two *anuvêka*, the first with 64 verses and second with 75 verses. Both have same contents, but Atharvaveda has more details.

The marriage is an important event in the life of a human-being. Through the marriage a young girl undergoes a transformation. She

enters in to a new house as a wife with her husband so as to produce off-springs. After marriage, she became the member of her husband's family.

In the same fashion light energy under go transformation through photosynthesis into the chemical energy, it never returns to its parental source sun, and enter into a cell body as a new house for its dwelling with synthesis of organic carbon (glucose) through photosynthesis.

The photosynthesis lead it to produce glucose and the products of the glucose are just like its off-springs. Through the ceremonial process and the wedding hymns of the marriage, the whole process of the photosynthesis has been described in a symbolic fashion metaphorically. It is synonym to our modern knowledge. As we know today, through the achievements of the modern science in the field of Biophysics.

In the nature evolution of the living-beings is due to the DNA-genetic modification with mutation and evolution through hybridisation. The development of the carbon skeleton is due to the chlorophyll through photosynthesis, which is the source of food (Glucose) for the living- beings.

In this way the synthesis of the physical cell body has been described, how it proceeds towards further evolution, it has been indicated symbolically through Ecological succession in the nature
ÿ g.1-161

The Photosynthesis has been indicated metaphorically through a riddle.

Photosynthesis- Let him who truly knows (here) tell the set down track of this pleasant bird; the kine extract milk from his head; clothing themselves in a wrap, they drunk water with the foot ÿ g. 1-164-7

The pleasant bird is sun, from where the kine extract milk from his head. It indicates about the visible solar rays (VIBGYOR), which are coming on the earth's surface from the head of the sun. These rays are trapped by the plants for the photosynthesis, which acts as milk-food (*k-hir*) through nourishment for the living-beings hence the visible rays of the sun have been compared with the milk

and plant as kine. The absorption of the water by the green plant has been indicated symbolically through the drinking of water with the foot y g.1-164-7 Due to the photosynthesis the life-consciousness has its existence on the earth. The carbon skeleton of the living-beings and its organic evolution is directly related with the photosynthesis. The Vedic knowledge on the photosynthesis can enlighten us in a new perspective.

We can interpret the symbolic expression about the process of photosynthesis in the wedding hymn, if we are acquainted with the Vedic terminology.

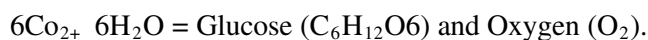
The wheel of the sun is *sūryā*'s bridal car. *Nārēśaś* is the short blue wavelength of light and *Aryaman*-the long red wavelength of light. *Bhag* is the photosynthetic pigment, *Avin* is nucleotide pair of DNA, *Savitā* is stimulator, who stimulate the light rays through change in temperature pressure gradient as well as it represents enzymes, who stimulate biochemical reactions. *Aryaman* is bride (long red wavelength of light); *Bhag* is the pigment of the cell, in the cell the long red wavelength of light is going to enter as a wife. The *Soma* is bride seeker, he first accept the light energy.

During the transformation of the light energy, it under go purification through release of the extra energy, as soon as it enters in to the system. The high energetic rays are toxic, which have been expressed through witchcraft's infection and harsh, sharp barbed poison, when its energy gets lower down it became blue- red than it enter in to the third step. When it approaches finally for the transformation, it releases its excess energy in the three stages. Hence the light energy has been termed as thrice purified (*Apala*) at the meta-triplet state of the exited electrons. Importance of the water molecule has been expressed through the water for bathing for bride.

After the transformation, as soon as the chemical energy is produced. It is said that *Bhag* has grasped thy hand and *Savitā* has grasped thy hand, it means the pigments and the enzymes have accepted it and her husband is glucose, *Tva-ā* (DNA) has given garment for the beauty, it means synthesis of protein, through which it acquires different forms and shapes in the living-beings and in the fossil fuels. It is its immortal character.

It has been expressed by saying *becoming obedient (anuvrata) to thy husband; gird thyself in order to immortality*. It means after transformation of the light energy into the chemical energy, the chemical energy became immortal in association with organic carbon. They move in the ecosystem through oxidation and reduction reactions in a cyclic manner, it has been indicated by “*these two move one after the other by magic these two sporting young ones*” *Ath. XIV-1-23, 24*

During the process *Indra, Agni* (Electromagnetic energy), heaven and earth, *Mātari, van* (CO₂), *Mitra* (light), *Varuṇa* (gravity), *Maruts* (Water clouds) *Bhag* (the pigment), *A, vin* (morning- evening), nucleotide pair of DNA and *B, haspati* (nucleus). These are the factors, which control the photosynthesis. Indication towards the reduction of the carbon di oxide has been given through ten intermediate products as ten sons and glucose as an eleventh man. The *Bhag* has fashioned the four feet, these are the four steps during the process of photosynthesis, which involve the carbon di oxide CO₂, water and the synthesis of glucose with release of oxygen O₂



Bhag has fashioned the four frames- pieces, and the *Tva-Ē* adorned the straps, it indicates about the formation of the DNA base pairs with four bases (Adenine=Thymine, Guanine=Cytosine, Thymine=Adenine and Cytosine=Guanine.). “On the God made road (natural path) this bridal car is well flowered,” it means it is a self-sufficient system, where the transcription and translation are the two pillars on her natural path. The same has been expressed as a maiden and -two pillars. In the end of the wedding hymn it has been expressed that all Gods (the natural forces) have united us of one accord by heart, *ApĒh* (water), *Mātari, van* (CO₂), *DhĒta* (sun) and *SarasvatĪ* (Vac - energy) may unite us. Here it has been indicated that during the process of the photosynthesis Water, carbon di oxide and sun-rays are important, which has given the way for the union (glucose), where carbon di oxide is converted in to the glucose with chemical energy within it.

Through the wedding, it has been indicated that the glucose

with the chemical energy within it is the primary source of the carbon skeleton, and the evolution of the living-beings on the earth. The functions going on in the nature during the evolution, and the formation of the complex food webs and food chains, have been indicated symbolically in an anthropomorphic manner. According to the relative importance of the component in a particular stage, they have been addressed symbolically. The obstacles and the factors, which influence the process have been indicated also in a symbolic fashion through the family relationship of the glucose and the chemical energy with their importance in the nature, through the role of a husband and the wife as a social family member metaphorically. During the journey of the assimilated carbon in the nature, the various nitrogenous and carbon products have been termed as their off-spring metaphorically.

Importance of the Soma-magnetic energy

In the wedding hymn it has been indicated that under the cosmic principles. The *soma* is set in the sky, due to the *soma*, sun has been established in the sky, due to the *soma* the *Ādityas* are strong and earth is mighty; like wise in the midst of asterism *soma* has been placed. It has been also indicated here that *soma* is not a plant or moon but an energy, which no one ever tastes. The *soma* represents magnetic energy, According to the principles of modern Astronomy. The magnetic energy can be generated due to the movements of the electrons in side an atom and in all the Astronomical bodies, who are moving at their axis, as due to the movement at their axis, a dynamo is being developed in their centre. Due to this all the rotating astronomical bodies have their own magnetic field and the magnetosphere around them. The position and the importance of the sun, earth and other planets in the universe are due to their magnetic field and the magnetosphere. The interplanetary space is filled with the interplanetary magnetic field. Along with this due to the movements of electrons around the nucleus, the magnetic energy generates. It is associated with the electrostatic energy of the nucleus and produces the bond energy, it bind the atoms and molecules through the bonds. In the living-beings due to the streaming movements of the protoplasm, the magnetic energy is generated, which is responsible for the origin of life. Hence it has been expressed that *soma* (magnetic energy) is present every where. Accordingly in the wedding hymn first of all

soma has been appreciated. It has been said that *soma* is the bride seeker. It is due to the presence of *soma*- magnetic energy in the living cells, which is also the house in which the sun's light energy is going to enter for the transformation. The presence of magnetosphere around the planets has been indicated by *Guarded by covering-arrangements* symbolically Atharvaveda XIV.1.1-5

Guarded by covering-arrangements, defended by watchmen (?? bÈrhata), O Soma, thou standest hearing the pressing-stones; no earthly one partakes of thee.

सत्येनोत्तभिता भूमिः सूर्येणोत्तभिता द्यौः।
ऋतेनादित्यास्तिष्ठन्ति दिवि सोमो अर्धि श्रितः॥ १॥

By truth is the earth established (ut-stabh); by the sun is the sky established; by righteousness the Âdityas stand; Soma is set (,rita) upon the sky.

सोमैनादित्या बलिनः सोमैः पृथिवी मही।
अथो नक्षत्राणामेषामुपस्थे सोम आर्हितः ॥ २॥

2. *By Soma are the Âdityas strong; by Soma is the earth great; likewise in the lap of these asterisms is Soma placed (a-dha).*

सोमं मन्यते पपिवान् यत् सपिषन्त्योषधिम।
सोमं यं ब्राह्मणो विदुर्न तस्याश्नाति पार्थिवः ॥ ३॥

3. *One thinks himself to have drunk Soma when they crush up an herb; what Soma the priests (brÈhmaṇa know, of that no earthly man partakes.*

यत् त्वासोम प्रपिबन्ति तत् आ प्यायसे पुनः।
वायुः सोमस्य रक्षिता सर्मानां मास आकृतिः॥ ४॥

4. *When, O Soma, they drink thee (up), then thou fillest thyself up again ; VÈyu is Soma's defender ; the month is norm (Èk, ti) of the years (sÈma).*

हे सोम; जब लोग सोम - भांग पीते है, तब तुम प्रफुल्लित होते हो। वायु सोम का रक्षक है, और माह इसकी आकृति।

आच्छद्विधानैर्गुपितो बाह्वैः सोम रक्षितः।
ग्राव्यामिच्छुण्वन् तिष्ठसि न ते अश्नाति पार्थिवः॥ ५॥

5. *Guarded by covering-arrangements, defended by watchmen (?? barhata), O Soma, thou standest hearing the pressing-stones;*

no earthly one partakes of thee.

Journey of the solar rays

After describing the importance of the *soma*, the journey of the solar rays from the sun to the earth's surface has been indicated through *raibhi* and *Gātha*.

When, the *SÊryÊ* daughter went to her husband, here the wheel of the sun is its bridal-car. The solar flares have been described as *the SÊryÊ's* excellent garment, as and when the solar wind passes through the sky. The high energetic solar wind waves make noise. The movement of the solar particles looks like that as if they are dancing. It has been expressed through *raibhi* and *Gātha* metaphorically.

Long and short wavelength of light

The *Nārśams* is her younger sister. She represents a short blue wavelength of light ÿ g. 10- 85-6.Ath.XIV-1-17.The *Aryaman* is long red wavelength of light. She has been expressed as husband finder bride symbolically.

अर्यमणं यजामहे सुवचुं षतिवेदनम्।

उर्वारुकमिव बन्धनात् प्रेतो मुञ्चामि नामतः॥ १७॥

The sun's wheel is its bridal car on which the sun is coming to give his daughter to her husband. The seven visible rays are the seven sisters, the *Nār, aŠ s* is younger sister. It means the short blue wavelength of light .The *Aryaman* is long red wavelength of light, the *Aryaman* is important for conversion of the light energy into the chemical energy. The husband's house is a cell, where she is going to enter as a wife to unite with her husband (CO₂), so as to form a union with her husband (glucose). It is the source of off-springs (products). The house where she is going to produce progeny is guarded by *the Soma* -magnetic energy, *Mitra* - light, *Varuṣa* - gravity and *the Indra* - electrostatic energy. *Tva—Ê* help her to produce *Vi, varupa-* (The various forms of the living-beings) ÿ g.10.85, (*Atharva-veda 14-1 and 2*).

Chlorophyll

Importance of the chlorophyll has been discussed under the name of *Avi*-protector and *Parṣa maṣi* in the *Atharva-veda*., In the

ṛgveda its presence has been indicated under the name of *Bh, gu*.

The deity, *Avi* by name, sits enveloped with right; by her form these trees are green garlanded. Atharva-veda X -8-31-1

वह्नि॑ य॒शसं॑ वि॒दथ॑स्य के॒तुं सु॒प्राव्य॑ दू॒तं स॒द्योऽर्थ॑म्।
द्विज॑न्मानं र॒यिमि॑व प्र॒शस्तं॑ रा॒तिं भ॑र॒द्भुग॑वे मा॒तृरि॒श्वर॑॥

As 'twere some goodly treasure *Mātri*,,van brought as a gift to *Bh, gu* ṛg.1- LX-1

The *Mātri*,,van CO₂ has brought down from heaven to earth, which is a gift to *Bh, gu* (chlorophyll), it means the gift is for photosynthesis.

It reflects about the knowledge and importance of the chlorophyll and the carbon di oxide for the living-beings.

We make offering to *Aryaman* of good connections, husband-finder; like a gourd from its bond, from here I release thee not from yonder. A. XIV-1-17

Brides-men, *A*,,vins represents- nucleotide pars of DNA, *Agni* - heat energy has been described as the forerunner, *Savitā* is stimulator. It means the process is stimulated with the changes in the temperature- pressure gradient.

When the *SĒrYÈ* approaches her husband's home, his two draft oxen were white. -when the electromagnetic energy approach for the carbon assimilation, they have white visible light, it has been indicated.

मनो॑ अस्या॒ अन॑ आसीद् द्यौरा॑सीदु॒तच्छ॑दिः।
शु॒क्राव॑न॒ड्वाहा॑वास्तां॒ यदया॑त् सूर्या॑ पति॑म् ॥ १० ॥

Mind was her cart; heaven also was [its] canopy; the two draft-oxen were white (,ukra), when *SĒrYÈ* went to her husband. Ath.XIV-1-10

It is the indication of the **white visible light**, as and when the sun rays reaches on the earth they have white colour.

6. *Intention (citti) was the pillow, sight was the ointment, heaven [and] earth were the coffer (ko,,a), when SĒrYÈ went to her husband.*

१. अवि॑र्वे नाम॒देव॑त॒र्तेना॑स्ते परी॒वृता॑। तस्या॑ रु॒पेणे॑मे वृ॒क्षा ह॑रि॒ता ह॑रित॒म्रजः॑॥

It has been expressed symbolically that during the journey of sun rays from sun to earth, the atmosphere and the earth are just like coffer - *ko,,a*

7. *The raibhĩ was the parting [song] (??Anudeyĩ), the naracansi was the welcoming one (? Nyocanĩ); SÊryÊ's garment verily was excellent; she goes adorned with song (gatha).*

SÊryÊ's garment verily was excellent; *the structure of solar flares has been indicated.* The high energetic solar wind wave makes noise. The movement of the solar particles looks like that as if they are dancing. It has been expressed through *raibhi* and *Gātha* metaphorically. The types of solar rays has been expressed by *Anudeyĩ nÊrÊ,,ansi and Nyocanĩ*

8. *The laudations (stoma) were the cross-pieces (?? Pratidhi) ; meter was the kurira, the opaca ; of SÊryÊ the A,,vins were the wooers, Agni was the forerunner.*

It has been expressed that during the journey of the solar rays from sun to earth the Agni - heat energy was the forerunner and A,,vins -nucleotide pairs of DNA are the architect of the food chains and food webs.

9. *Soma was the bride-seeker; both A,,vins were wooers, when Savitā gave to her husband SÊryÊ, praising (cans) with her mind.*

10. *Mind was her cart; heaven also was [its] canopy; the two draft-oxen were white (,,ukra), when SÊryÊ went to her husband.*

Ath.XIV- 1- 6 to 10.1

१. अ॒स्मा इ॒दु त्व॑ष्टा तक्ष॒द्वज्रं॑ स्व॒पस्त॑मं स्व॒र्यं १ र॑णा॒य।
 वृ॒त्रस्य॑ चि॒द्विद॑द्येन॒ ममै॑ तुज॒नीश॑नस्तु॒जता॑ कि॒येधाः ॥६॥
 रै॒भ्यासी॑दनुदे॒यी नारा॑शंसी न्यो॒र्चनी॑।
 सूर्या॑या भ॒द्रमि॑द् वा॒सो गा॒थयै॑ति॒ परि॑ष्कृ॒ता॥७॥
 स्तो॒माआ॑सन् प्र॒तिध॑र्यःकु॒रीरं॑ छन्द॑ ओप॒शः। सूर्या॑या
 सूर्या॑या अ॒श्विना॑ व॒राग्नि॑रासीत् पु॒रोग॑वः ॥८॥
 सोमो॑ वधू॒युरभ॑वद॒श्विना॑स्तामु॒भा व॒रा।
 सूर्या॑ यत् प॒त्ये शंस॑न्ती॒ मन॑सा स॒विता॑ददात् ॥९॥
 मनो॑ अस्या॒ अन॑ आसीद् द्यौ॒रासी॑दुत च्छ॒दिः।
 शु॒क्राव॑न॒ड्वाहा॑वास्तां॒ यद॑यात् सूर्या॑ पति॒म् ॥१०॥

It has been expressed that when *savita* - stimulator has stimulated the process of transformation, soma was bride-seeker, it means magnetic energy of the cell has first accepted it and both *A,,vins*-nucleotide pairs of DNA are the architect of the process of assimilation. The two draft-oxen were white (cukra), when the electromagnetic energy approach for the carbon assimilation, they have white visible light, it has been indicated.

Importance of the Ozone layer

During the course of the sun light from the sky to the earth, the ultra violet rays are absorbed by the ozone layer in the upper atmosphere. This fact has been indicated through asking a question to the *A,,vins*

यदश्विना पच्छिमांनावयात् त्रिचक्रेण वहतुं सूर्यायाः।

द्वे चक्रं वामासीत् क्व देष्टव्यं तस्थयुः ॥ १४॥

द्वे ते चक्रे सूर्ये ब्रह्माणं ऋतुथा विदुः।

अथैकं चक्रं यद् गुहा तदद्भुतय इदं विदुः॥ १६॥

“With your three wheeled chariot, to *SÊryÊ*’s bridal. Where was one wheel of yours” *Ath XIV-1-14,16*

“The two wheels of thee, O *SÊryÊ*, the priests know, the one wheel that is in secret - which verily, the enlightened know.

The course of the solar rays from the sky to earth has three stages.

The three steps have been expressed as the three wheels. The first step is in the sky, where the sun rays generates due to the nuclear reactions at the surface of the sun. The second step is sun’s visible light on the earth’s surface. These are the two common steps known to all. The third invisible step is in the atmosphere, where ozone layer absorbs the toxic ultra violet rays. The same has been indicated as the one wheel that is in secret.

11. Haltered with verse (ic) and chant (saman), thy two oxen went peaceful (? samana); ears were thy (two) wheels; in the sky the wandering track.

The course of the solar rays has been expressed.

12. Clean were the (two) wheels of thee as thou wentest; out-breath-ing (vyana) was the inserted axle; a cart made of mind

did SÊrya ascend when going forth to her husband.

13. *The bridal (vahatu) of SÊryā, which Savitā sent off (ava-srj), has gone forth; in the Maghas are slain the kine; in the Phalgunis is the wedding.*

It has been indicated that *Maghas*- cold months inactivate the process and *Phalgunis*- hot seasons activate the process.

14. *When, O A„vins, ye went asking, with your three-wheeled [chariot], to SÊryÊ's bridal, where was one wheel of yours? Where stood ye for pointing out?*
15. *When ye went, O lords of beauty, unto the wooing of SÊryÊ, all the gods assented to that [deed] of yours; PÊ-an as son chose a father.*

It has been expressed symbolically that through the carbon assimilation, it is just like that the *pÊ-an*- sun rays has chosen the father in the form of organic carbon.

16. *The two wheels of thee, O SÊryÊ, the priests (brahma×) know seasonably ; further, the one wheel that is in secret – that, verily, the enlightened (addhati) know.1*

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१. ऋक्सामाभ्यामभिहितौ गावौते सामनावैताम्।
श्रोत्रे ते चक्रे आस्तां दिवि पथ्यश्चिराच्चरः ॥ ११॥
शुचीं ते चक्रे यात्या व्यानो अक्ष आहतः।
अनौ मनुस्मर्य सूर्यारोहत् प्रयती पतिम् ॥ १२॥
सूर्याया वहतुः प्रागात् सविता यमवासृजत्।
मघासु हन्यन्ते गावः फल्गुनीषु व्यु हते ॥ १३॥
यदश्चिना पृच्छमानावयातं त्रिचक्रेण वहतुं सूर्यायाः ।
द्वैकं चक्रं वामासीत् क्व देष्टव्यं तस्थुः ॥ १४॥
यदयातं शुभस्पती वरेयं सूर्यामुप
विश्वे देवा अनु तद् वामजान् पुत्रः पितरमवृणीत पूषा॥ १५॥
द्वे ते चक्रे सूर्ये ब्रह्माणं ऋतुथा विदुः।
अथैकं चक्रं यद् गुहा तदद्भुतय इदं विदुः॥ १६॥

Let what is dear succeed (sam-rdh) here for thy progeny; watch thou over this house in order to housewife-ship; mingle thy self (tanu) with this husband; then shall thou in advanced age speak to the council. 21.1

After the absorption of the UV Rays by the Ozone layer the visible light enter in to the earth's atmosphere. The visible light is important for the photosynthesis. It has been indicated symbolically that **Aryaman red wavelength of light is husband finder**. I release thee just like a gourd from its bond. It has been addressed to the long red wavelength of light to watch over the house (cell) for housewife-ship.

17. *We make offering to Aryaman of good connections, husband-finder; like a gourd from its bond, from here I release, not from yonder.*
18. *I release [her] from here, not from yonder; I make her well-bound yonder, that she, O gracious Indra, may be rich in sons, well-portioned.*
19. *I release thee from Varuṇa's fetter, with which the very propitious Savitā bound thee; in the lair (yoni) of righteousness, in the wooer (-sambhala).*
20. *Let Bhaga lead thee hence, grasping thy hand; let the Aśvins carry thee forth by a chariot; go to the houses, that mayest be housewife ; thou, having control, shall speak unto the council.2*

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१. इह प्रियं प्रजायै ते समृद्धं तामस्मिन् गृहे गार्हपत्याय जागृहि।
एना पत्या त्वं सं स्पृशस्वाश्च जिविर्विदध्रमा वंदासि ॥ २१॥
 २. अर्यमणं यजामहे सुबन्धुं पतिवेदनम्।
उर्वारुकमिव बन्धनात् प्रेतो मुञ्चामि नामुतः ॥ १७॥ रु
प्र त्वा मुञ्चामि वरुणस्य पाशाद् येन त्वाबध्नात् सविता सुशेवाः।
ऋतस्य योनौ सुकृतस्य लोके स्योनं ते अस्तु सहसम्भलायै ॥ १९॥
भगस्त्वेतो नयतु हस्तगृह्याश्विना त्वा प्र वहतां रथेन।

Light Reaction

The photosynthesis has two main reactions, the light reaction and dark reaction. It is during the light reaction that the sunlight (long red wavelength of light) gets converted in to the chemical energy with the help of chlorophyll (photosynthetic pigments). Here *Bhag* represents photosynthetic pigment, which leads the *Aryaman* (long red wavelength of light) for the union. The place where the light energy is going to enter is the cell. Here it has been addressed to the light energy that “*watch thou over this house in order to housewife ship; mingle thy self with this husband for thy progeny*” A.XIV-1-21. Here the light energy (long red wave length of light) is bride and carbon di oxide is bridegroom, addressing to them it has been said that “*ye (two) just here; be not separated; attain your whole life- time sporting with sons and grand sons*” Ath-XIV-1-22. The sons and grand sons are symbolic expressions for the products of the glucose. In the same sequence again it has been said “*these two move one after the other by magic these two sporting young ones*” Ath.. XIV-1-23,24. Here in a symbolic manner anabolic and catabolic reactions of the photosynthesis have been indicated, by saying that by their own power, *these twain in close succession move; they go as playing children round the sacrifice (actions and interactions in a cyclic manner)* y g. 10-LXXXV-18a. It means these two reactions operate in succession one after the other.

21. *Let what is dear succeed (sam-rdh) here for thy progeny; watch thou over this house in order to housewife-ship; mingle thy self (tanu) with this husband; then shalt thou in advanced age speak to the council. 21.*
22. *Be ye (two) just here; be not separated; attain your whole life-time, sporting with sons [and] grandsons, rejoicing, well-homed.*
23. *These two move on one after the other by magic; two sporting young ones go about the ocean; the one looks abroad upon all beings; thou, the other, disposing the seasons art born new.*

गृहान् गच्छ गृहपत्नी यथासौ वृशिनी त्वं विदध्या वृदासि ॥२०॥

It has been indicated that the chemical energy and the carbon (assimilated carbon) move one after the other with oxidation and reduction reactions, in the biological world - ocean of the living-beings, and synthesize new components, through intermediary-metabolism in the cell, it has been indicated.

24. *Ever new art thou, being born ; sign of the days, thou goes to the apex of the dawns ; thou disposest to the gods their share as thou comest ; thou extendest, O moon, a long life-time!*

“One of the pair beholdeth all existing things; the other ordereth seasons and is born again” Rg.10- LXXXV-18b. One holds all existing things. It has been indicated that the existence of the living-beings in the nature is due the chemical energy the other one is the product of the photosynthesis (glucose). They under go oxidation and reduction with the biochemical reactions under the seasonal variations, it acquires different forms and shapes again and again. It indicates about the formation of the different substrates from the glucose molecule. Addressing to the glucose again it has been said that with its formation it became new and new from morning to evening and disposes shares of Gods (natural components). It means the glucose is the source of the different organic substances, they reaches to their respective places as food, as indicated through moon, which represent night, which extends the length of man's existence y.g.10- LXXXV-19, Ath IV-1-24. It means night is the proper time for the transportation of the food

१. इह प्रियं प्रजायै ते समृद्धं तामस्मिन् गृहे गार्हपत्याय जागृहि।
एना पत्या तन्वंशु सं स्पृशुस्वाथु जिर्विर्विदथुमा वंदासि ॥ २१॥

इहैव स्तं मा वि यौष्टं विश्वमायुर्व्यं श्रुतम्।
क्रोडन्तौ पुत्रैर्नृभिर्मोदिमानौ स्वस्तकौ ॥ २२॥
पूर्वापरं चरतो माययैतौ शिशू क्रोडन्तौ परि यातोऽर्णवम्।
विश्वान्यो भुवना विचष्टं ऋतूरन्यो विदधज्जायसे नवः ॥ २३॥
नवोनवो भवसि जायमानोऽह्ना केतुरुषसामेष्ट्यग्रम्।
भागं देवेभ्यो वि दधास्यायन् प्र चन्द्रमस्तिरसे दीर्घमायुः ॥ २४॥

material, which extend the longevity of the human-beings.

b. Electron Transfer

During the light reaction chlorophyll molecules absorb photons (quanta) and become excited. It means the molecules with more energy than the ground state energy. The excess energy absorbed by the chlorophyll molecule is passed on to one of its electrons, which is consequently raised to a higher energy level. The high energetic electron is then expelled from the chlorophyll with excess energy, such electrons have a very short life. They do not immediately participate in the photochemical reaction they lose their energy partly as heat and partly as radiation as fluorescence or phosphorescence (energy transfer in steps). As a result due to the loss of some of the energy as heat the electron will fall to a meta-triplet state. It is these activated triplet state electrons by virtue of their longer life, they can most easily be involved in the photochemical reaction known as photo-phosphorylation and the electron will return to the ground state. During this journey of the electron it loses its excess energy thrice, first from the excited singlet state to the 2nd excited singlet state. This state can also be obtained by the absorption of blue light but such electrons have very short life. Again it loses its energy as heat to give electrons at the first excited singlet state, this state can also be obtained when chlorophyll absorbs red light. Such electrons are also short lived and undergo internal conversion to a meta triplet state and get involved in the photochemical reaction, up to this state the excited electrons lose the excess energy thrice, hence it has been termed as thrice purified. The excess energy has been indicated through a metaphor of a garment, which has been infected by the witchcraft, so it has been said that before entering the house as a wife give away garment („*Ėmulya*). The importance of the blue and the red light for the photosynthesis has been indicated that it is blue-red when witchcraft's infection is driven away. It means excited electron loses some of its energy as heat and becomes blue-red, which is 2nd excited and 1st excited state of the electron respectively.

If the husband wraps his body with *famulya* then his body

becomes unpleasant. It means excited electrons with excess energy are harmful, the sunrays are having different wavelengths of light, they get released their excess energy in parts through phosphorescence, Ath.XIV-1-28. The high intensity of light is like a harsh barbed poison, *the priest brāhma who know sÊryā, he indeed deserves the brides garment, who verily takes the garment and bride remains unharmed* Ath. XIV-1-29&30

It has been indicated here that excess energy- „Êmulya, when released in the steps, then the released energy is accepted by the *brahma*- ADP and ATP (Adenosine Tri Phosphate) is synthesized through the photo-phosphorylation. It is associated with the pigment system-Ist, and excited electrons move to the pigment system-IIInd.

25. *Give thou away the „Êmulya; share out goods to the priests (brÊhmaṣa); it, becoming a walking (padvant) witchcraft enters the husband [as] a wife.*

Give thou away the „Êmulya; the excess energy of the excited electron has been termed as „Êmulya, the excess energy is harmful just like witchcraft's infection.

26. *It becomes blue-red; [as] witchcraft, infection, it is driven away (?); her relations (jṁÊti) thrive; her husband is bound in bonds.*

It has been indicated that the excited electron loss their excess energy in steps through change in the *blue-red* wave length of light.

27. *Unlovely becomes [his] body, glistening in that evil way, when the husband wraps his own member with the bride's garment.*

28. *Carving on, carving open, also cutting over apart; see the forms of SÊryÊ; them also the priest (brÊhmaṣa) cleans (cumbh).*

29. *Harsh is that, sharp, barbed, poisoned; that is not to be eaten; what priest (BrÊhmaṣa) knows SÊryÊ, he indeed deserves the bride's [garment].*

The harmful nature of the excited electrons for the photosynthetic pigments with excess energy has been indicated that it is just like sharp barbed poison.

30. *That priest verily takes this garment, pleasant, well-omened, who goes over the expiation, by whom the wife takes no harm. I*

The importance of the chemical energy has been expressed in the succeeding stanza. It has been prayed to the *Brāhamaṣaspati* (nucleus) that the chemical energy with her husband (glucose). The two may proceed on a successful path and the glucose may shine for the chemical energy as carbon products, and it has been prayed that the environmental factors may favour him on her path.

Photolysis of the water

By saying that “now I remove the glistening seizer, body spoiling; that I draw up”. Ath.XIV-1-38. It means that now the excited electrons are ready for the biochemical reaction. For the light reaction the water molecule is having a important role, its importance has been expressed in this fashion “*He who shines without fuel within the waters, whom the devout praise at the sacrifices (Adhvaryu) O child of the waters, mayest thou give waters rich in honey, with which Indra increased, full heroism.*” Ath. XIV-1-37. In this verse latent energy of the water has been indicated. The *Indra* represents the electricity, the electric energy

१. परा॑ देहि शामुल्यं ब्रह्मभ्यो॑ वि भुञ्जा॑ वसु॑।
कृत्यैषा प॒द्वर्तु॑ भुत्वा जा॒या वि॑शते॒ पति॑म् ॥ २५ ॥
नीललो॒हितं भु॑वति॒ कृत्या॑सु॒क्तिर्व्य॑ ज्यते।
ए॒धु॒न्ते अ॒स्या ज्ञा॒तयः॑ पति॒र्व्येषु॑ बध्यते ॥ २६ ॥
अ॒श्ली॒ला त॒नू॒र्भव॑ति॒ रु॒श॒ती पा॒पया॑मु॒या।
पति॑र्यद् व॒ध्वो॑३ वा॒सु॒सुः स्व॑मङ्ग॒मभ्यू॑णुति ॥ २७ ॥
आ॒श॒सु॒नं वि॒श॒सु॒न॒मथो॑ अधि॒विक॑र्त॒नम्।
सूर्या॑याः पश्य॒ रुपा॑णि॒ तानि॑ ब्र॒ह्मो॒त शु॑ष्मति ॥ २८ ॥
तृ॒ष्टमे॒तत् क॑टु॒कम॑पा॒ वु॒द् वि॒षव॑न्नै॒तद॑त्त॒वे।
सूर्या॑याः यो ब्र॒ह्मा वे॒द स इ॒द् वा॒धु॒यम॑र्हति ॥ २९ ॥
स इ॒त् तत् स्यो॑नं हु॒रति॑ ब्र॒ह्मा वा॑सुः सु॒मङ्ग॑ल॒म्।
प्रा॒या॒श्चि॒त्ति॒ यो अ॒ध्येति॑ येन॑ जा॒या न रि॑ष्यति ॥ ३० ॥

with its two charges help in the *photolysis* of water ($H^+ + OH^-$). In the nature with this the excited chlorophyll molecule of the pigment system 2nd reached to the ground state by receiving the electron from the water through the photolysis. It has been expressed as the heroic act of the *Indra* (the electricity). In the nature it is related with the short blue wavelength of light, and the non cyclic photophosphorylation than the electron moves to the 1st excited state. It is the seat of the long red wavelength of light. The fact has been indicated by saying “*Let the Brāhamin take for her (water) for bathing; let them draw waters that slay not a hero; let her go about the fire of Aryaman (long red wave length of light)*”, here the photolysis of the water has been indicated and then the electrons moves towards the next state, the same is the fire of *Aryaman* and the *Metatriplet* state, from where a biochemical reaction start. The same has been described as “*O thou of hundred activities, having thrice purified Apala*”, (up to this state the excited electrons have released their energy through phosphorescence thrice, hence the electromagnetic energy of excited electrons has been termed as thrice purified Apala. As suggested by Arnon 1954

“*O Indra, thou didst make her sun skinned*”, the term ‘sun skinned’ has been used for the chemical energy and has been expressed in the next verse that “*becoming obedient to thy husband, gird thy self in order to immortality.*” With the formation of the glucose molecule the chemical energy acquire different forms and remains active as immortal. The immortal nature of the chemical energy has been expressed through the anabolic and catabolic reactions in the living-beings. The chemical energy moves in to the food chains and food webs in the nature and remains active as immortal. The glucose is the primary source of the food material, which is the source of complex carbon skeleton of all the living-beings.

Food chains and food webs

The chemical energy generates the complex food webs and food chains in the ecosystem. The same has been indicated through a question that “*They who spun, wove and who stretched the web, what divine one gave the ends about, let them wrap thee in order to*

old age one long lived put this garment (glucose).''

With carbon assimilation, the organic matter glucose moves in to the food chains, and food webs. It has been indicated by saying that put this garment for long life. *“They who spun, wove and who stretched the web, what divine one gave the ends about”* It is an indication that assimilated carbon is responsible for the formation of the food chains and food webs without end.

31. Do ye (two) bring together a successful (samrddha) portion, speaking right in right-speaking; O Brāhmaṣaspati, make the husband shine (ruc) for her; let the wooer (sambhala) speak this speech agreeably (caru).

The glucose metabolism in the cell is regulated by the nucleus. Hence *Brāhmaṣaspati*- nucleus of the cell has been invoked.

32. May ye be just here ; may ye not go away ; may ye, O kine, increase this man with progeny ; going un beauty, ruddy, with soma-splendour – may all the gods turn (kr) your mind hither.

O kine is a symbolic expression for the living-beings, through secondary production, they circulate the food material into the food chains.

33. May ye, O kine, enter this man together with progeny; this man minisheth (mi) not the share of the gods; for this man shall PÊ-an, and all the Maruts, for this man shall DhÊtar, SavitÊ quicken (su) you.

It has been expressed that the natural forces and factors, pÊ-an - sun-rays, maruts- water clouds, dhÊtar - the fundamental energy, SavitÊ - stimulator are working for the assimilated carbon in the nature.

34. Free from thorns, straight, let the roads be by which [our] comrades go a-wooing for us ; together with Bhaga, together with Aryaman – let DhÊtar unite [us] with splendour.

It has prayed that the assimilated carbon, which is our comrades for the formation of food chains in the nature for us, together with Bhag - photosynthetic pigments, Aryaman - long red wave length of light and DhÊtar - fundamental energy, they may unite us.

35. Both what splendour is placed in dice, and what in strong drink

– what splendour, O A,,vins, is in kine, with that splendour favour (av) ye this woman.1

It has been indicated that whatever is going on in the living organisms is due to the assimilated carbon, and chemical energy.

36. With what [splendour] the backsides of the courtesan (mahĒ nagni), O A,,vins, or with what the strong drink, with what the dice were flooded (abhi-sic), with that splendour favour ye this woman.

The DNA of the photosynthetic pigment favour the photolysis of water, it has been indicated by A,,vins.

37. He who shines (dī) without fuel within the waters, whom the devout (vipra) praise at the sacrifices (adhvarĒ) – O child of the waters, mayest thou give waters rich in honey, with which Indra increased, full of heroism.

The importance of water and photolysis of water has been indicated.

38. Now do I remove (apaĒh) the glistening seizer (grabha), body-spoiling; what sheen is excellent, that I draw up (ud-ac).

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१. युवं भगं सं भरतं समृद्धमतं वदन्तावृतोद्येषु।
बृहणस्पते पतिमस्यै रौचय चारुं संभूलो वदतु वाचमेताम् ॥ ३१॥
इहेदसाथ न पुरो गमाथेम गावः प्रजया वर्धयाथ
शुभं यतीरुस्त्रियाः सोमवर्चसो विश्वे देवाः ऋत्रिह वो मनांसि ॥ ३२॥
द्रुमं गावः प्रजया सं विशाथायं देवानां न मिनाति भागम्।
अस्मै वः पूषा मरुक्षु सर्वे अस्मै वो धाता सविता सुवाति ॥ ३३॥
अनुक्षरा ऋजवः सन्तु पथ्यानो येभिः सखावो यन्ति नो वरेयम्।
सं भगेन समर्युष्णा सं धाता सृजतु वर्चसा ॥ ३४॥
यच्च वर्चो अक्षेषु सुरायां च यदाहितम्।
यद् गोष्वश्विना वर्चस्तेनेमां वर्चसावत ॥ ३५॥

य

It has been indicated that now the long red wavelength of light is ready for bio chemical reaction.

39. *Let the BrĒhmaṣ take for her [water] for bathing; let them draw up (?) waters that slay not a hero; let her go about the fire of Aryaman, O pĒ-an; father-in-law and brother-in-law are looking on (prati-iks).*

Addressing to the pĒ-an-sun rays, "let her go about fire of Aryaman" It has been indicated that the electromagnetic ray-long red wavelength of light is ready for transformation along with photolysis of water. .the father-in-law and brother-in-law is a symbolic expression for the earlier products present in the cell.

40. *Weal be to thee gold, and weal be waters; weal be the post (methi), weal the perforation (tardman) of the yoke; weal be for thee the waters having a hundred cleaners (-pavitra); for weal, too, mingle thy-self with thy husband.*

41. *In the hole of the chariot, in the hole of the cart, in the hole of the yoke, O thou of a hundred activities, having thrice purified Apala, O Indra, thou didst make her sun-skinned.*

The sun skinned is term for chemical-energy; with this the biochemical reaction has been indicated.

42. *Hoping for well-willing, offspring, good-fortune, wealth, becoming obedient (anuvrata) to thy husband, girds thyself in order to immortality.*

43. *As the [mighty (? V,sa)] river (sindhu) won (? su) the supremacy of the streams (nadi), so be thou supreme (samrajṣi), having gone away to thy husband's home.*

44. *Be thou supreme among father-in-law, supreme also among brothers-in-law; be thou supreme over sister-in-law, supreme also over mother-in-law.*

45. *They (f.) who spun, wove, and who stretched [the verb], what divine ones (f.) gave the ends about, let them wrap thee in order to old age; [as] one long-lived put about thee this garment.*

It has been indicated that the chemical energy following the organic carbon flows into the food chains, just like the flow of river

Sindhu, as a supreme energy among the cellular components.
They together spun and wove the food webs in the nature.

येन महान्ध्या जघनमश्चिना येन वा सुरा।
येनाक्षा अभ्यर्षिच्यन्ते तेनेमां वचसावतम् ॥ ३६ ॥
यो अग्निष्मो दीदयदुप्सवश्चतयं विप्रासु ईडते अध्वरेषु।
अपां नपान्मधुमतीरपो दा याभिरिन्द्रो वावृधे वीर्या वान् ॥ ३७ ॥
इदमहं रुशन्तं ग्राभं तनूदूषिमपौहामि।
यो भुद्रो रौचिनस्तमुदचामि ॥ ३८ ॥
आस्यै ब्राह्मणाः स्पर्पनीर्हरन्त्ववीरघ्नी रुदजन्तवार्षः।
अर्यम्णो अग्निं पर्येतु पृषन् प्रतीक्षन्ते श्वशुरो देवश्च ॥ ३९ ॥
शं ते हिरण्यं शमु सन्त्वापः शं मेथिर्भवतु शं युगस्य तर्ही।
शं त आर्षः शतर्षवित्रा भवन्तु शमु पत्या तहन्वश्च सं स्पृशस्व ॥ ४० ॥
खे रथस्य खेऽनसः खे युगस्य शतक्रतो।
अपालामिन्द्र त्रिष्पुत्वाक्कणोः सूर्यत्वचम् ॥ ४१ ॥
आशासाना सौमनसं प्रजां सौभाग्यं रयिम्।
पत्युरनुव्रता भूत्वा सं नह्यस्वामृताय कम् ॥ ४२ ॥
यथा सिन्धुर्नदीनां साम्राज्यं सुषुवे वृषा।
एवा त्वं सम्राज्यैधि पत्युरस्तं परेत्य ॥ ४३ ॥
सम्राज्यैधि श्वशुरेषु सम्राज्युत देवेषु।
ननान्दुः सम्राज्यैधि सम्राज्युत श्वश्रवाः ॥ ४४ ॥
या अकृन्तन्नवयन् याश्च तलिरे या देवीरन्तां अभितोऽददन्त।
तास्त्वा जूरसे सं व्ययन्त्वायुष्मतीदं परि धत्स्व वासः ॥ ४५ ॥

c.Dark Reaction

In this way first the transformation of energy has been expressed “*This is that form in which young woman (A particular wavelength of light) dressed her self; I desire to know with my mind the wife moving about; I will go after her with nine fold comrades; who, knowing unloosened these fetters*” A. XIV -1-56.

The reduction of the carbon di oxide through the Calvin cycle has been indicated. The nine comrades are the nine products of the

dark reaction. In *ṛgveda* it has been expressed through “*Ten sons and a husband (glucose) as an eleventh man*” *ṛg. 10-LXXXV-45* (As suggested by Melvin Calvin 1946, 1951).

The first organic molecule glucose has been considered as a husband of the chemical energy. The chemical energy has entered in to the cell through transformation and present in the glucose as free energy. The chemical energy has been termed as the household wife (the chemical energy). This woman has received garment for beauty from the *Tva-Ê* (the DNA) by the direction of the *B, haspati* (regulator of the metabolic reactions in the cell) “*Savitā* and *Bhag* has enveloped this woman, like *SÊryÊ* with progeny” it means - *Bhag* (photosynthetic pigment) and *Savitā* has accepted it and the *Savitā* (enzymes) stimulates it so as to produce progeny, it means different products of the glucose molecule, they are synthesized in the cell, the regulator of the synthesis is nucleus (*B, haspati*) and the various products like the carbohydrates, fats and proteins are the products of the same glucose molecule under the guidance of the DNA (De oxy ribose Nucleic Acid). Hence it has been said that the woman has received garment for the beauty from the *Tva-Ê* (DNA),-Ath.-XIV-1-53.

Factors affecting the process

The factors of the photosynthesis have been indicated as *Indra-Soma*- electromagnetic energy, *Mātri, van* (CO_2), *Mitra* (light) *Varuḥa* (gravity), *Bhag* (photosynthetic pigments). *A, vins* (morning & evening, it is the indication about the importance of the light intensity, which under go a change from the morning to the evening, *Maruts* (Water clouds), *Brāhamin* (**Soma** -magnetic energy in the cell). These factors control the process Ath. XIV-1-54.



Further it has been said that “*Bhag* has fashioned four feet, *Bhag* has fashioned the four frames and *Tva-Ê* (DNA) adorned the straps” Ath. XIV-1-60

It has been indicated that during the synthesis of the glucose it has four steps. The four steps represents the carbon di oxide (CO_2), Water (H_2O), Glucose ($C_6H_{12}O_6$) and Oxygen (O_2), they under go

oxidation -reduction reactions and stimulates the process of the synthesis, the four frames- pieces represents four base pairs on the DNA strips. The DNA (*Tva—Ē*) is a genetic material with four base pairs, which regulates the protein synthesis and the course of life cycle of the living-beings.

In this way an all formed bridal car (Cell) get established on the journey of the cell towards the evolution. The DNA strips are the two pillars on the natural path-God made road, in the end of the hymn presence of the fundamental energy every where has been expressed under the name of *Brāhamin*. Ath.XIV-1-64

46. *They bewail the living one (m.); they lead away the sacrifice (adhvarĒ); the men sent their thoughts after [root dhi...anu] a long reach (prasiti) ; what is lovely (vĒma) for the Fathers who came together here ; joy to the husbands for embracing the wife.*
47. *I maintain for thee, in order to progeny, a pleasant, firm (dhruva) stone in the lap of the divine earth ; stand thou on that, one to be exulted after, of excellent glory ; let Savitar make for thee a long life-time.*
48. *Wherewith Agni grasped the right hand of this earth, therewith grasp I thy hand ; do not stagger in company with me, with both progeny and riches.*
49. *Let god Savitar grasp thy hand; let king Soma make thee to have good off-spring; let Agni, JĒtavedas, make the spouse well-portioned, long-lived, for her husband.*
50. *I grasp thy hand in order to good-fortune, that with me as husband thou mayest be long-lived ; Bhaga, Aryaman, Savitar, Purandhi [pĒrĒṢ dhi] –the gods have given thee to me in order to housewife ship.*
51. *Bhaga hath grasped thy hand; Savitar hath grasped thy hand; thou art [my] spouse by ordinance (dharman), I thy house-lord.*
52. *Be this woman mine, bringing prosperity (posya) ; B,haspati hath given thee to me ; in company with me [as husband] do thou live, rich in offspring, a hundred autumns.*
53. *Tva—ā disposed (vi-dha) the garment for beauty, by direction of B,haspati, of the poets; therewith let SavitĒ and Bhaga*

envelop this woman, like SÊrya, with progeny.

It has been indicated that the *Tva—Ê* DNA in the direction of *B,haspati*- nucleus of the cell give different shapes to glucose, along with *savitÊ* - stimulators and *Bhag* - photosynthetic pigments

54. *Let Indra-and-Agni, heaven-and-earth, Mâtari,,van, Mitra-and-Varuḥa, Bhaga, both A,,vins, B,haspati, the Maruts, the Brahman, Soma, increase this woman with progeny.*

The various factors involved in the photosynthesis have been expressed.

55. *B,haspati first prepared (klp) the hairs on the head of SÊryÊ; eith this, O A,,vins, do we thoroughly adorn (cubh) this woman for her husband.*

It has been expressed that the electromagnetic energy has been generated first at surface of sun and A,,vins- nucleotide pars of DNA decorate it in different forms for her husband - assimilated carbon.

56. *This [is] that form in which the young woman (yosa) dressed herself ; I desire to know with [my] mind the wife (jaya) moving about ; I will go after her with nine-fold (? Navagva) comrades: who, knowing, unloosened (vi-crt) these fetters?*

It has been expressed that in this way the electromagnetic energy dressed herself and through the desire to know the path of wife. The path of Calvin cycle has been indicated through nine-fold comrades and glucose as the end product symbolically.

57. *I loosen (vi-sa) in me the form of her; he verily shall know, seeing the nest of mind; I eat not stolenly; I was freed (ud-muc) by mind, myself untying (,,rath) the fetters of Varuḥa.*

58. *I release thee from Varuḥa's fetter, with which the very propitious SavitÊ bound thee; wide space (loka), an easy road here, do I make for you, O bride (vadhu), with the husband.*

It has been indicated that *SavitÊ* enzymes bind the chemical energy in the glucose and with respiration it became free to move in a wide space with different products of the glucose.

59. *Raise ye [your weapon; may ye smite away the demon ; set this woman in what is well done; inspired DhÊtar found for her a*

husband ; let king Bhaga go in front, foreknowing.

60. *Bhaga fashioned the four feet; Bhaga fashioned the four frame pieces (? Usyala); Tva—Ē adorned (pic) the straps (? vardhna) along in the middle; let her be to us of excellent omen.*

It has been indicated that bhag - photosynthetic pigments has fashioned four steps for the carbon assimilation and four frames- four base pairs of DNA, accordingly the *Tva—ā* DNA give different shapes to the assimilated carbon with metabolic reactions.

61. *The well-flowered (sukix,uka), all-formed bridal-car (vahatu), golden coloured, well-rolling, well-wheeled, do thou mount, O SÊryĒ, to the world of the immortal; make thou a bridal-car pleasant to husbands.*

It has been expressed that with the photosynthesis the cell became the self sufficient and self regulated unit.

62. *Her, not brother-slaying, O Varuḥa; not cattle-slaying, O B,haspati; not husband-slaying, possessing sons, O Indra – bring [her] for us, O Savitar.*
63. *Injure ye not the maiden (kumĒri), ye (two) pillars, on the god-made road; the door of the divine house we make pleasant, a road for the bride.*

It has been prayed symbolically that organic carbon and chemical energy are just like two pillars for living-beings in the creation.

64. *Let the BrĒhmaḥ be yoked after, the BrĒhmaḥ before, the BrĒhmaḥ at the end, in the middle, the BrĒhmaḥ everywhere; going forward to an impenetrable stronghold of the gods, do thou (f.), propitious, pleasant, bear rule in thy husband's world.*

It has been expressed that in the creation *BrĒhmaḥ*- fundamental energy is present every where.

जीवं रुदन्ति वि नयन्त्यध्वरं दीर्घामनु प्रसितिं दीध्युर्नरः।

वामं पितृभ्यो य इदं समीरिरे मयुः पतिभ्यो जनये परिष्वजे ॥४६॥

स्योनं ध्रुवं प्रजायै धारयामि तेऽश्मानं देव्याः पृथिव्या उपस्थे।

तमा तिष्ठानुमाद्या सुवर्चा दीर्घं त आयुः सविता कृणोतु ॥४७॥

येनाग्निरस्या भूम्या हस्तं जुग्राह दक्षिणम्।
 तेन गृह्णामि ते हस्तं मा व्यथि ह्य मया सह प्रजया च धर्मेन च ॥४८॥
 देवस्ते सविता हस्तं गृह्यतु सोमो राजा सुप्रजसं कृणोतु।
 अग्निः सुभगां जातवेदाः पत्ये पत्नीं जरदंष्ट्रं कृणोतु ॥४९॥
 गृह्णामि ते सौभगत्वाय हस्तं मया पत्या जरदंष्ट्रिर्यथासः।
 भगो अर्यमा सविता पुरश्चिर्मह्यं त्वादुर्गाहपत्याय देवाः ॥५०॥
 भगस्ते हस्तमग्रहीत् सविता हस्तमग्रहीत्।
 पत्नी त्वमसि धर्मणाहं गृहपतिस्तव ॥५१॥
 ममेयमस्तु पोष्या मह्यं त्वादाद् बृहस्पतिः।
 मया पत्या प्रजावति सं जीव शरदः शतम् ॥५२॥
 त्वष्टा वासो व्यदधाच्छुभे कं बृहस्पतेः प्रशिषां कवीनाम्।
 तेनेमां नारीं सविता भगश्च सूर्यामिव परि धत्तां प्रजयां ॥५३॥
 इन्द्राग्नी द्यावापृथिवी मातरिश्वा मित्रावरुणा भगो अश्विनोभा।
 बृहस्पतिर्मरुतो ब्रह्म सोमं इमां नारीं प्रजयावर्धयन्तु ॥५४॥
 बृहस्पतिः प्रथमः सूर्यायाः शीर्षं केशां अकल्पयत्।
 तेनेमामश्विना नारीं पत्ये सं शोभयामसि ॥५५॥
 इदं तद्रूपं यदवस्तु योषांजायां जिज्ञासे मनसा चरन्तीम्।
 तामन्वर्तिष्ये सखिभिर्नवगवैः क इमान् विद्वान् वि चर्चतु पाशान् ॥५६॥
 अहं वि ध्यामि मयि रूपमस्या वेददित् पश्यन् मनसः कुलायम्।
 न स्तेर्यमद्वि मनसोददमुच्ये स्वयं श्रश्त्रानो वरुणस्य पाशान् ॥५७॥
 प्र त्वा मुञ्चामि वरुणस्य पाशाद् येन त्वाबध्नात् सविता सुशेवाः।
 उरुं लोकं सुगमत्र पथां कृणोमि तुभ्यं सहपत्यै वधु ॥५८॥
 उद्यच्छ्वमप रक्षो हनाथेमां नारीं सुकृते दधात।
 धाता विपश्चित् पतिमस्यै विवेदु भगो राजा पुर एतु प्रजानन ॥५९॥
 भगस्ततक्ष चतुरः पादान् भगस्ततक्ष चत्वार्युष्मलानि।
 त्वष्टा पिपेश मध्यतोऽनु वधर्यन्त्सा नौ अस्तु सुमङ्गली ॥६०॥
 सुकिशुकं वहतु विश्वरूपं हिरण्यवर्णं सुवृतं सुचक्रम्।
 आ रोह सूर्ये अमृतस्य लोकं स्योनं पतिभ्यो वहतु कृणु त्वम् ॥६१॥

अ॒ग्रा॒तृ॒ष्णीं वरु॒णाप॑शु॒ष्णीं बृ॒हस्प॑ते।
 इन्द्रा॑पति॒ष्णीं पु॒त्रिणी॑मास्म॒भ्यं स॑वित॒र्वह ॥ ६२ ॥
 मा हि॑सिष्टं कु॒माय॑ १ स्थू॒र्णे दे॒वकृ॑ते पृ॒थि।
 शाला॑या दे॒व्या द्वा॒रं स्यो॑नं कृ॒ण्मो व॑धू॒पथम् ॥ ६३ ॥
 ब्र॒ह्माप॑रं यु॒ज्यतां॑ ब्र॒ह्मा पूर्॒वं ब्र॒ह्मान्त॑तो म॒ध्यतो॑ ब्र॒ह्म स॑र्वतः।
 अ॒ना॒व्य॒धां दै॒वपु॑रां प्र॒पद्य॑ शि॒वा स्यो॑ना प॒तिलो॑के वि॒राज॑ ॥ ६४ ॥

Organic evolution

In the wedding hymns it has been said about the bride (sun rays) “*Soma’s wife first; the Gandharva thy next husband; Agni is thy third husband; thy fourth, one of human birth, accordingly Soma gave it to Gandharva and Gandharva gave it to Agni with wealth and son, Agni has given it to me like wise this woman.*” Ath. XIV-2-3,4.

सोम॑स्य जा॒या प्र॑ष्ट॒मं ग॑न्ध॒र्वस्तेऽपू॑रः पतिः।
 तृ॒तीयो॑ अ॒ग्निष्टे॑ पतिस्तु॒रीय॑स्ते मनु॒ष्यजाः॥ ३ ॥
 सोमो॑ ददद् गन्ध॒र्वाय॑ गन्ध॒र्वो द॑ददु॒ग्नये॑।
 रयि॑ च पु॒त्रांश्चा॑दादु॒ग्निर्म॑ह्यमथो॒ इमाम् ॥ ४ ॥

; both wealth and sons hath Agni given to me, likewise this woman.

In a symbolic fashion the journey of the light rays after the transformation has been indicated. As soon as the light energy approaches the cell, first it is received by the *soma*, which is present in the cell due to the streaming of the protoplasm in side a cell. The *soma* gave it to the *Gandharva* (protoplasm), it means than the energy enter in to the protoplasm, than it under go the biochemical reactions, hence it has been said that *Gandharva* gave it to *Agni*-metabolic energy, accordingly the various substances have been synthesized inside a cell. The products have been described as wealth and in the succession with the evolution human birth is there, like wise this woman *Agni* has given to me. Ath XIV-2 -3,4. It means through the material wealth of the photosynthetic food material, the human beings came in to the existence and likewise the woman also. It is the indication of organic evolution.

आ वा॑मगन्त्सु॒मृति॑वा॒जिनी॑वसू न्य॒ श्विना॑ ह्र॒त्सु कामा॑ अरंसत।
अभू॑तं गो॒पा मि॒थुना शु॑भस्पती प्रिया अ॒र्य॒म॒णो दु॒र्य॑ अ॒शीम॑हि ॥५॥

Your favour hath come, O ye (two) of abundant good things (? Vajinivasu); [our] desires have rested in [your] hearts, O A,,vins; ye have been twin keepers, O lords of beauty; may we, being dear, attain favourers (aryaman) of our homes (? Durya)Ath.14-2- 5

“O ye (two) of abundant good things, O AfVIN; ye have been twin keepers, lord of beauty we, being dear, attain favourers (Aryaman) of our homes.” Here the two of abundant good things and twin keepers represent a nucleotide pair of DNA, with oxidation and reduction reactions in succession, who favour the Aryaman for the photosynthesis. It means the DNA is important, which favour the photosynthesis.

The DNA consist of nucleotide pairs, they are united with each other through the hydrogen bonds, a nucleotide pair has been expressed as A,,vin, which is attached to two strips of DNA, hence A,,vin-nucleotide pair has been expressed as two mothered son.

The aids wherewith the wanderer, through his off-springs might, or the Two Mothered Son shows swiftest mid the swift.

Wherewith the sapient one acquired his triple lore,- Come hither unto us, O A,,vins, with those aids.

The A,,vins represents the nucleotide pair ÿ g. 1-CXII-41

Flying with falcons, may your chariot, A,,vins, most gracious, bringing friendly help, come hither,-

Your chariot, swifter than the mind of mortal, fleet as the wind, three seated, O ye mighty. ÿ g. 1-CXVIII-12

The nucleotide pairs of DNA are very active in the triplet form. It has been indicated through three seated, they under go division very rapidly, hence it has been said that their speed is falcon like and swifter than the mind, their functions in the cell are

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१. याभिः॑परि॒ज्मा तन॑यस्य मु॒ज्मना॑ द्वि॒माता॑ त्रु॒षु तर॑णिर्वि॒भूष॑ङ्गति।
याभिः॑स्त्रि॒मनु॑र॒भव॑द्विचक्षुणस्ताभि॑षु उ॒तिभि॑रश्विना ग॑तम्॥४॥
 २. आ वा॑ रथो॑ अश्विना श्येनप॑त्वा सुमृ॒ळीकः॑ स्ववौ॑ यात्व॒र्वाङ् ।
यो म॒र्त्यस्य॑ म॒नसो॑ जवी॒यान्नि॑वश्चुरो वृ॒षणा॑ वा॒र्तर॑हाः ॥१॥

accompanied with oxidation and reduction reaction in. They speedup the process of duplication, it has been indicated by A.,vin-union of two, where each reaction in succession nourishes with synthesis or degradation, hence it has been said that they nourishes the infant. yjg.1-95-11

“Prey hear ye now of me, O men, by what blessings (acts) the two spouses attain what is agreeable (vama): what Gandharvas (there are) and heavenly Apsarases, who stand upon these forest trees (vanaspatya). Let them be pleasant un to this bride; let them not injure the bridal car as it is driven.”

The two spouses represent anabolism and catabolism. The Gandharva represents protoplasm, and the heavenly Apsarases are the indicators of the cyclic metabolic reactions. They if uninjured leads to the evolution, and accordingly the indications about the probable obstructions have been given. During the journey of the chemical energy from the green cell to its destiny in the nature, with the formation of a well equipped (well developed eukaryotic cell, it has a vast field for the evolution. The same has been indicated in as under.

(As) a soulful cultivated field hath this woman come; in her here, o man, scatter ye seed, she shall give birth to progeny for you from her belly bearing the exuded sperm of the male (r-abad) At. 14-2-14

Further it has been indicated that from this plants and animals of various forms have been born.

Let there come forth from the lap of this mother animals of various forms, being born; as one of excellent omen, sit thou by this fire; with thy husband, be thou serviceable to the gods here. Ath.XIV-2-25

“The gold cushioned vehicle, bearing all forms, did SÊryā, Savitr’s daughter, mount, in order to great good progeny” (well developed cell) Ath. XIV-2-30

The gold cushioned vehicle is metaphor for the cell, where

१. द्वे विरूपे चरतः स्वर्थे अ न्यान्या वृत्समुप धापयेते।
हरिरन्यस्यां सां भवति स्वधावाञ्छुक्रो अन्यस्यां ददृशे सुवर्चाः ॥१॥

savitr's daughter- electromagnetic energy of sun light has been converted in to chemical-energy in order to produce carbon products just like progeny.

The gods in the beginning lay with (ni-pad) their spouses; they embraced (sam-prac) bodies; (indication of crossing over) like SÊrya, O woman, all formed, with greatness, having progeny, unite (sam-bhu) here with thy husband." Ath. XIV-2-32- 1

Accordingly the functions of a mature cell have been expressed symbolically, through the family relationships, the universal importance of the chemical energy and the carbon has been indicated.

Conclusion

The whole play of life on the earth is due to the carbon assimilation through photosynthesis. It is a unique event in the history of origin of life on the earth. It is the only source of chemical energy and organic carbon on the earth for the living-beings. Once the electromagnetic energy is converted in to chemical energy, it moves into the living-beings through food chains as a immortal along with carbon. The chemical energy has been termed as wife and carbon as father; they together synthesize the assimilated carbon, which is the source of carbon products in the nature. Accordingly the living-beings have evolved on the earth. The products have been termed as their progeny. Accordingly it has been said "*Vasudhaiva ku-~~u~~Ś bakam*" **The whole earth is one family with all gods** (the natural forces) have united us of one accord by heart.

The *Apāh* (Water), *M,ātari,,van* (CO₂), *Dhāta* (sun- rays), and

रुक्मप्रस्तरणं ब्रह्म विश्वा रूपाणि बिभ्रतम्।

आरोहत् सूर्या सावित्री बृहते सौभगाय कम् ॥ ३०॥

देवा अगे न्य पद्यन्त पत्नीः समस्पृशन्त तन्व स्तनूभिः।

सूर्येवं नारि विश्वरूपा महित्वा प्रजावती पत्या सं भवेह ॥ ३२॥

Sarasvatī (*VĒc*-energy) may unite us. Here it has been indicated that during the process of the photosynthesis Water, carbon di oxide, sun-rays and fundamental energy (*Vāc*-energy) play major role in the photosynthesis.

The relative importance of chemical energy with reference to the life on the earth has been expressed.

8. Journey of the assimilated carbon in the nature

The assimilated carbon moves in the living-beings with the formation of complex food chains and food webs in the nature. The cell body is the bridal car. The transformation of light energy into chemical energy has been indicated through the wedding of the *Aryaman*. The chemical energy is just like the wife of carbon, they together synthesize the assimilated carbon. How the assimilated carbon under go evolution through the metabolic reactions, it has been indicated in a symbolic fashion with indicating the formation of the cell with DNA as genetic material as the source of evolution of the living creation through crossing over. Accordingly the functions of the chemical energy the cell and the living-beings have been expressed symbolically through the journey of the wedded couple metaphorically. Through the family relationships the universal importance of the chemical energy and the carbon has been indicated in anthropomorphic manner symbolically.

“Soma’s wife first; the Gandharva thy next husband; Agni is thy third husband; thy fourth, one of human birth, accordingly Soma gave it to Gandharva and Gandharva gave it to Agni with wealth and son, Agni has given it to me like wise this woman”.Ath. XV-2-3, 4

तुभ्यमग्रे पर्यवहन्त्सूर्या वहतुनासुह।

स नः पतिभ्यो जायां दा अग्ने प्रजया सुह ॥ १॥

1. For thee in the beginning they carried about SŔya, together with the bridal-car; mayest thou, O Agni, give to us husbands the wife, together with progeny.

It has been expressed in a symbolic fashion through prayer that the sun rays travel in the form of electromagnetic rays (the bridal-car) with heat energy. It under go carbon assimilation, the products of the organic carbon represents progeny.

पुनः पत्नीमग्निर्दादायुषा सुह वचसा।

दीर्घायुरस्या यः पतिर्जीवाति श्रद्धः शतम् ॥ २ ॥

2. Agni hath given back the spouse, together with life-time, he who is the husband of her live a hundred autumns.

It has been said that during the carbon assimilation it under go cyclic chain reactions, where the cycle ends with the synthesis of the initiator compound, it has been indicated by saying *Agni hath given back the spouse, together with life-time.*

सोमस्य ज्ञाया प्रष्ट्रमं गन्धर्वस्तेऽपूरः पतिः।
 तृतीयो अग्निष्टे पतिस्तुरीयस्ते मनुष्यजाः॥ ३॥
 सोमो ददद् गन्धर्वाय गन्धर्वो दददुमन्ये।
 रुचिं च पुत्रांश्चादादुग्निर्मह्यमथो वृषाम् ॥ ४ ॥

3. *Soma's wife first; the Gandharva thy next husband; Agni thy third husband; thy fourth, one of human birth.*

It has been indicated that the chemical energy is activated by the magnetic energy first than it reaches in to the cytoplasm with metabolic heat energy. Accordingly with the evolution, the chemical energy reaches to its climax in the human-beings.

4. *Soma gave to the Gandharva; the Gandharva gave to Agni; both wealth and sons hath Agni given to me, likewise this woman.*

It has been expressed in an anthropomorphic manner, that due to the streaming (the protoplasm) the *Gandharva* generates the *Soma*-magnetic energy. It has been grasped by the protoplasm with the metabolic energy in the cells. It is the source of different products as wealth, with evolution of the living-beings. Accordingly the form of man like me and my female counter part this woman also.

आ वामगन्तुमुत्तिवाँजिनीवसू न्य श्विना ह्रुसु कामा अरंसत।
 अभूतं गोषा मिथुना शुभस्पती प्रिया अर्यम्णो दुर्या अशीमहि ॥ ५॥

5. *Your favor hath come, O ye (two) of abundant good things (?VĒjinīvasu); [our] desires have rested in [your] hearts, O A.,vins; ye have been twin keepers, O lords of beauty ; may we, being dear, attain favorers (aryaman) of our homes (? Durya)*

It has been indicated that the chemical energy and carbon. They together as assimilated carbon are the source of different products. The A.,vin are the twin keepers of the nature, they represent nucleotide pairs of DNA. It has been expressed by “*O ye (two) of abundant good things, O A.,vin;*

ye have been twin keepers. Their function in the nature is dependent on the photosynthesis. Hence the favor of Aryaman- red wavelength of light for the photosynthesis has been desired. It has been indicated by lord of beauty we, being dear, attain favorers (Aryaman) of our homes.

सा मन्दसाना मनसा शिवेन रूचिं धेहि सर्ववीरं वचस्यम्।

सुगं तीर्थं सुप्रपाणं शुभस्पती स्थाणुं पथिष्ठामपदुर्मतिं हतम्॥ ६॥

6. Do thou (f.), rejoicing with propitious mind, assign wealth having all heroes, to be extolled; an easy crossing (tirtha), well provided with drink, O lords (du.) of beauty; do ye smite away the pillar standing in the road, [namely] disfavor.

It has been indicated that the chemical energy is the source of natural wealth with natural forces as heroes. Symbolically the probable obstacles during the metabolic reactions have been indicated by- do ye smite away the pillar standing in the road, [namely] disfavor.

या ओषधयो या नद्योऽरु या नि क्षेत्राणि या वना।

तास्त्वा वधु प्रजावतीं पत्ये रक्षन्तु रक्षसः॥ ७॥

7. What herbs [there are], what streams, what fields, what forests —let these, O bride, defend from the demon thee, possessing progeny, for thy husband.

It has been indicated that the chemical energy present in the herbs, crop fields and the forest trees, their existence is due to the assimilated carbon-husband. It is due to the fact that the plant bodies have a carbon skeleton. Accordingly it has been prayed that —let these, O bride, defend from the demon thee, possessing progeny.

एवं पन्थामरुक्षाम सुगं स्वस्तिवाहनम्।

यस्मिन् वीरो न रिष्यत्यन्येषां विन्दते वसु॥ ८॥

8. We have mounted this road, easy, bringing welfare, on which a hero takes no harm, [but] finds others' goods.

It has been expressed in an anthropomorphic manner that the metabolism is a path on which the hero- carbon moves without harm.

इदं सु मे नरः शृणुत ययाशिषा दम्पती वाममश्नुतः।

ये गन्धर्वा अप्सरसश्च देवीरेषु वानस्पत्येषु येऽर्षितस्युः।

स्योनास्ते अस्यै वध्वै भवन्तु मा हिंसिषुर्वहतुमुह्यमानम्॥ ९॥

9. Pray hear ye now of me, O men, by what blessing (acts) the two spouses attain what is agreeable (vama); what Gandharva [there are] and heavenly Apsarases, who stand upon these forest trees Uanaspatyd). Let them be pleasant unto this bride; let them not injure the bridal-car as it is driven.

The assimilated carbon has been termed as two spouses and it is the bridal car symbolically, which take part in the metabolic reactions in the protoplasm. The protoplasm has been termed as *Gandharva* and the metabolic reactions, which operates in cycles, they have been termed as *Apsarases*, their presence in the plants has been indicated through what *Gandharva* [there are] and heavenly *Apsarases*, who stand upon these forest trees *Uanaspatyd*). Let them be pleasant unto this bride; let them not injure the bridal-car as it is driven.

ये वध्वं शृङ्गं वहतुं यक्ष्मा यन्ति जनां अनु।

पुनस्तान् यज्ञियां देवा नयन्तु यत् आगताः ॥ १० ॥

10. what yak-mas go to the bride's brilliant (candrd) car among the people let the worshipful gods conduct those back whence they came.

The bride's car indicate the movement of the chemical energy in the living beings, it has been indicated through the car among the people and the bio-geo-chemical cycle has been indicated through let the worshipful gods-natural forces conduct those back whence they came.

मा विदन् परिपुञ्चिनो य आसीदन्ति दम्पती।

सुगेनं दुर्गमतीताहमपं द्रान्त्वरतयः ॥ ११ ॥

11. Let not the way layers who pursue (them) find the two spouses; let them go over what is difficult by an easy (road); let the niggards run away.

The journey of the two spouses on the path of metabolism without obstacles has been prayed.

सं काशयामि वहतुं ब्राह्मणा गृहैरघोरैश्च चक्षुषा मित्रियेण।

पर्याणद्धं विश्वरूपं यदस्ति स्योनं पतिभ्यः सविता तत् कृणोतु ॥ १२ ॥

12. I cause the bridal-car to be viewed by the house with worship with a friendly, not terrible eye; what of all forms is fastened on about, let SavitÊ make that pleasant for the husbands,

It has been expressed through the mouth of the assimilated carbon that I assimilated carbon is the cause of the movement as bridal car in the cell-house, the metabolism is like a worship, it has the potentiality to synthesize all the forms, these forms and the products are due the assimilated carbon for which the enzymes make a easy path.

शिवा नारीयमस्तुमागन्निमं धाता लोव मुस्यै दिदेश।

तामर्यमा भगौ अश्विनोभा प्रजापतिः प्रजयां वधयन्तु ॥ १३ ॥

13. Propitious hath this woman come to the home; Dhātar appointed this world (Sphere) to her; let her Aryaman, Bhaga both A., vins PrajÊpati, increase with progeny.

It has been indicated that the chemical energy, which has entered in the assimilated carbon is favorable like a woman, its transformation has been inspired by the *Dhātar*-fundamental energy as his share in the world, further how it increases, it has been indicated *by let her Aryaman, Bhaga both A,,vins PrajĒpati, increase with progeny*. It means the chemical energy increases through transformation of *the Aryaman* in the presence of *Bhag*-pigments and both *A,,vins*-nucleotide pairs under the lord of beings-*PrajĒpati*-fundamental energy. Accordingly the human-beings and the woman came in to the existence.

आत्मन्वत्युर्वरा नारीयमागन् तस्यां नरो वपत् बीजमस्याम्।

सा वः प्रजां जनयद् वक्षणाभ्यो बिभ्रती दुग्धमृषभस्य रेतः ॥ १४ ॥

14. (As) a soulful cultivated field hath this woman come; in her here, o man, scatter ye seed, she shall give birth to progeny for you from her belly bearing the exuded sperm of the male (,-abha)

It has been indicated that due to the activity of the chemical energy the soulful cultivated field in the shape of woman has come in to the existence, where man scatter seed for progeny, which bear the sperm in her belly for birth of progeny.

प्रति तिष्ठ विराडसि विष्णुर्विह सरस्वति।

सिनीवालि प्र जायतां भगस्य सुमुतावसत् ॥ १५ ॥

15. stand firm; viraj art thou; as it were, Vi-ṣu- here O Sarasvati; O Sinivali, let her have progeny; may she be in the favor of Bhaga,

How she gave birth it has been expressed that the chemical energy is supreme like *Vi-ṣu*-light, accordingly it has been prayed that *O Sarasvati; O SiñĪvĒli*, let her have progeny; may she be in the favor of *Bhaga*, where *Sarasvati* represents *VĒc*-thought energy and *SiñĪvĒli* represents duplicating DNA in the womb so as to increase it through progeny, so that she-chemical energy may remain favorable to the *Bhag*-pigments.

How the metabolic reactions are operating in the cell, it has been indicated symbolically.

उद् व ऊर्मिः शर्म्या हन्वापो योक्त्राणि मुञ्चत।

मादुष्कृतौ व्ये नसावृच्यावशुनमारताम् ॥ १६ ॥

16. Let your wave smite up the pegs; O waters, release the yoke-ropes (yoktra); let not the inviolable (kine), not evil-doing free from guilt, come upon what is unpropitious.

It has been expressed that the waves of the chemical energy through breaking of the bond energy may smite up the pegs-metabolic cycles with the help of water.

Importance of water has been indicated during the metabolism.

अघोरचक्षुःपतिघ्नी स्योना शुग्मा सुशेवा सुयमा गृहेभ्यः।

वीरसूतेवृकामा सं त्वयैधिषीमहि सुमनस्यमाना ॥ १७ ॥

17. With an eye not terrible not husband-saying pleasant, helpful very propitious .of easy control for the house ,hero bearing loving brother-in law (?),With favoring –may we thrive together with thee.

It has been expressed symbolically that the chemical energy controls the synthesis and degradation without harm along with assimilated carbon.

अदैवघ्न्यपतिघ्नीहैधि शिवा पशुभ्यः सुयमा सुवर्चाः।

प्रजावती वीरसूतेवृकामा स्योनेममग्निं गार्हपत्यं सपर्य ॥ १८ ॥

18. Not brother-in law slaying not husband –slaying be thou here propitious to the cattle, of easy control vary splendid having progeny hero-bearing loving brothers-in law (?),pleasant ,do thou worship this householder's fire.

It has been indicated that the chemical energy is useful for the living-beings.

उत्तिष्ठतः किमिच्छन्तीदमागा अहं त्वेडे अभिभूः स्वाद् गृहात्।

शून्यैषी निर्त्रिते याजगन्धोत्तिष्ठाराते प्र पतु मेह रस्थाः ॥ १९ ॥

19. Stand up from hare; desiring what hast thou (f.) come hither? I thine overcome O Ida, out of own house; thou that hast come hither O perdition seeking the empty –stand up; O niggard ;fly forth ;rest not here.

यदा गार्हपत्यमसपर्यैत् पूर्वमग्निं वृधूरियम्।

अथा सरस्वत्यै नारि पितृभ्यश्च नमस्कुरु ॥ २० ॥

20. When this bride hath worshiped the householder's the former fire, then, O woman, do thou pay homage to Sarasvati and to the Fathers.

Importance of VĒ- thought energy and the hereditary characters through Sarasvati and fathers has been indicated.

शर्म वर्येतदा हंरास्यै नार्या उपस्तरै।

सिनीवालि प्र जायतां भगस्य सुमतावसत ॥ २१ ॥

21. Take this protection, defense, to spread under this woman; O Sinivali, let her have progeny; may she be in the favor of Bhaga.

It has been addressed to the chemical energy that avail the protection of this woman and spread under this woman, so that she may have progeny.

How the assimilated carbon with chemical energy spread, it has been indicated.

यं बल्बजं न्यस्यथ चर्मं चोपस्तृणीथन।

तदा रोहतु सुप्रजा या कन्या विन्दते पतिम् ॥२२॥

22. What rushes ye cast down, and hide ye spread under, that let the girl of good progeny mount, who finds a husband.

उप स्तृणीहि बल्बजमधि चर्मणि रोहिते।

तत्रोपविश्य सुप्रजा द्रुममग्निं संपर्यतु ॥२३॥

23. Spread under the rushes upon the red hide; sitting down upon it, of good progeny, let her worship this fire.

आ रोह चर्मोप सीदग्निमेष देवो हन्ति रक्षांसि सर्वा।

इह प्रजां जनय पत्ये अस्मै सुज्यैवो भवत् पुत्रस्त एषः ॥२४॥

- To progeny for this husband; may this son of thine be of good primogeniture.

वि तिष्ठन्तां मातुरस्या उपस्थानानारूपाः पशवो जायमानाः।

सुमङ्गल्युप सीदुममग्निं संपत्नीं प्रति भूषेह देवान् ॥२५॥

25. Let there come forth from the lap of this mother animals of various forms, being born; as one of excellent omen, sit thou by this fire; with thy husband, be thou serviceable to the gods here.

It has been indicated that the chemical energy acts like mother, the carbon is like father. They together act as assimilated carbon. From this the animals of various forms have been evolved. Accordingly the activity of the chemical energy as propitious in all respect has been indicated symbolically.

सुमङ्गली प्रतरणी गृहाणां सुशेवा पत्ये श्वशुराय शंभूः।

स्योना श्वश्र्वै प्र गृहान् विशेमान् ॥२६॥

26. Of excellent omen, extender of the houses, very propitious to thy husband, weal full to thy father-in-law, pleasant to thy mother-in-law, do thou enter these houses.

स्योना भव श्वशुरेभ्यः स्योना पत्ये गृहेभ्यः।

स्योनास्यै सर्वस्यै विशे स्योना पुष्टायैषां भव ॥२७॥

27. Be thou pleasant to father-in-law, pleasant to husband, to houses, pleasant to all this clan; pleasant unto their prosperity be thou.

सुमङ्गलीरियं वधूरिमां समेत पश्यत।

सौभाग्यमुस्यै दुत्वा दौभाग्यैर्विपरैतन ॥२८॥

28. Of excellent omen is this bride; come together, see her; having given unto her good-fortune, go asunder and away with ill-fortunes.

या दुर्हादा युवतयो याश्चेह जरतीरपि।

वर्चो न्वशुस्यै सं दुत्ताथास्तं विपरैतन ॥२९॥

29. What evil-heated young woman, and likewise what old ones, here —do ye all now give splendor to her; then go asunder and away home.

रुक्मप्रस्तरणं वृहं विश्वारूपाणि बिभ्रतम्।

आरोहत् सूर्या सावित्री बृहते सौभगायकम् ॥३०॥

30. The gold-cushioned vehicle, bearing all forms, did SÊrya, SavitÊ's daughter, mount, in order to great good-fortune.

Formation of the well developed cell has been indicated.

आ रोहू तल्पं सुमनस्यमनिह प्रजां जनय पत्यै अस्मै।

इन्द्राणीव सुबुधा बुध्यमाना ज्योतिरग्रा उषसः प्रति जागरासि ॥३१॥

31. Mount the couch with favoring mind; here give birth to progeny for this husband; like Indrani, waking with good awakening, mayest thou watch to meet dawns tipped with light.

It has been indicated that the cells divide quickly they give birth to new cells like progeny for the assimilated carbon.

देवा अग्रे न्य पद्यन्त पत्नीः समस्पृशन्त तन्व स्तनूभिः।

सूर्येव नारि विश्वरूपा महित्वा प्रजावती पत्या सं भवेह ॥३२॥

32. The gods in the beginning lay with their spouses; they embraced bodies with bodies; like SÊryā, O woman, all-formed, with greatness, having progeny, unite here with thy husband.

It has been indicated that Gods-natural forces are interacting like two spouses. Accordingly it has been addressed to the woman-chemical energy to unite with the husband carbon for the progeny. Symbolically the importance of crossing over has been indicated.

Importance of Glucose has been indicated as Vi.,vÊvasu-universal organic carbon.

उत्तिष्ठतो विश्वावसो नमसेडामहे त्वा।

जामिमिच्छ पितृषटुं न्यक्तां स ते भागो जनुषा तस्य विद्धि ॥३३॥

33. Stand up from here, O Vi.,vÊvasu; with homage do we praise thee; seek thou a sister sitting among the Fathers, inserted ; that is thy portion by right of birth; know thou that.

Vi.,vavasu represents the assimilated carbon-glucose. His sister is a symbolic expression for the triose-sugar.

अप्सरसः सधृमार्द मदन्ति हविर्धानमन्तरा सूर्यं च।

तास्तै जनित्रमृभि ताः परैहि नमस्ते गन्धर्वतुनाकृणोमि ॥३४॥

34. *The Apsarases revel a joint reveling, between the oblation-holder and the sun; they are thy birth place; go away to them; homage I pay thee with the Gandharva-season.*

It has been indicated that *Apsarases*-the cyclic metabolic reactions are having a close relationship with the *Vi, vEvasu*-glucose. The reactions operate in the protoplasm-*Gandharva* under seasonal variations.

नमो गन्धर्वस्य नमसे नमो भामाय चक्षुषे च कृष्णः।

विश्रावसो ब्रह्मणा ते नमोऽभि जाया अप्सरसुः परैहि ॥३५॥

35. *Homage to the Gandharva's mind, and homage to his terrible eye we pay; O Vi, vEvasu, homage to thee with worship; go away unto thy wives, the Apsarases.*

It has been addressed to the glucose symbolically to take part in the cyclic biochemical- metabolic reactions. The *Apsarases* represents cyclic reactions, which have been termed as wives of the *gandharva*-protoplasm symbolically.

राया वयं सुमनसः स्यामोदितो गन्धर्वमावीवृताम।

अगन्तस देवः परमं सधस्थमगन्तु यत्रप्रतिरन्त आयुः ॥३६॥

36. *With wealth may we be well-willing; we have made the Gandharva go up from here; that god hath gone to the highest station; we have gone where they lengthen out [their] life-time.*

We have made the *Gandharva* go up from- it is an indication for the preparation of the cell for the crossing over, because during the crossing over first the protoplasm is not visible and the chromosomes are visible. It has been indicated.

सं पितरावृत्तिये सृजेथां माता पिता च रेतसो भवाथः।

मयै इव योषामधिरोहयैनां प्रजां कृण्वथाग्निह पुष्यत रयिम् ॥३७॥

37. *Unite, O ye parents, the things that are seasonable; ye shall be mother and father of seed ; as a male a female, do thou mount her; make ye progeny ; here enjoy wealth.*

For the union of the chromosomes through mother and father, the crossing over has been indicated.

तां पूषञ्छिवर्तमामरे यस्व यस्यां बीजं मनुष्यां वपन्ति।

या न ऊरू उशती विश्रयाति यस्यामुशन्तः प्रहरैम शेषः ॥३८॥

38. *Send, O Pu-an, her, most propitious, in whom men scatter seed ; who, eager, shall part our thighs; in whom we, eager, may insert the member.*

It has been indicated that through *Pu-an*-nourishment the most propitious female body has been developed, where man scatter seed for progeny.

आ रौहोरुमुप धत्स्व हस्तं परि च्जस्व जायां सुमनस्यमानः।

प्रजां कृण्वामिह मोदमानौ दीर्घं वामायुः सविता कृणोतु ॥ ३९ ॥

39. Mount thou the thigh ; apply the hand; embrace thy wife with well-willing mind ; make ye progeny here, enjoying ; let SavitE make for you a long life-time.

Union for progeny has been indicated.

आ वां प्रजां जनयतु प्रजापतिरहोरात्राभ्यां समनक्त्वयमा।

अदुर्मङ्गली पतिलोकमा विशेमं शं नोभव द्विपदे शं चतुष्पदे ॥ ४० ॥

40. Let PrajEpati generate progeny for you; let Aryaman unite [you] with days-and-night; not ill-omened, enter thou this world of thy husband; be weal to our bipeds, weal to [our] quadrupeds.

It has been indicated that the lord of beings-PrajEpati-fundamental energy, generates the progeny, and Aryaman under go transformation for the favor of assimilated carbon. It may be auspicious for the bipeds-men-women and quadrupeds-animals, it indicates the importance of chemical energy in the nature.

देवैर्दत्तं मनुना साकमेतद् वाधूयं वासो वध्वश्च वस्त्रम्।

यो ब्रह्मणै चिकितुषे ददाति स इद् रक्षांसि तल्पानि हन्ति ॥ ४१ ॥

41. This bridal garment and bride's dress, given by the gods together with Manu, whoso gives to a knowing priest, he verily slays the demons of the couch.

It has been expressed that the gods-natural components, together with Manu- DNA have generated the glucose, just like the bridal garment.

यं मे दत्तो ब्रह्मभागं वधूयोर्वाधूयं वासो वध्वश्च वस्त्रम्।

युवं ब्रह्मणैऽनुमन्यमानौ बृहस्पते साकमिन्द्रश्च दत्तम् ॥ ४२ ॥

42. What priest's portion they give to me the bride-seeker, the bridal garment and bride's dress, do ye O B,haspati and Indra, assenting, together give it to the priest.

It has been indicated that the B,haspati- nucleus together with bond energy control the metabolic reactions in the cell.

स्योनाद्योनेरधि बुध्यमानौ हसामुदौ महसा मोदमानौ।

सुगू सुपुत्रौ सुगृहौ तराथो जीवावुषसो विभातीः ॥ ४३ ॥

43. Awaking out of a pleasant lair, mightily enjoying your-selves, merry, having good kine, good sons, good houses, may ye, living, pass the outshining dawns.

It has been indicated that with metabolic reactions, the glucose synthesize the various carbon product, they are just like the progeny of glucose.

नवं वसन्तः सुरभिः सुवासो उदागो जीव उषसो विभ्रतीः।

आण्डात् पतन्तीवामुक्षि विश्वस्मादेनसुस्परि ॥ ४४ ॥

44. Clothing myself anew, fragrant, well-dressed, I have risen alive unto the outshining dawns; as a bird from the egg, I have been released out of all sin.

It has been expressed by the chemical energy, that just like a bird released from the egg, in the same fashion I have a new birth from the rays of rising sun.

शुम्भनी द्यावापृथिवी अन्तिसुम्ने महिब्रते।

आर्पः सप्त सुस्रुवुर्देवीस्ता नो मुञ्चन्वहंसः ॥ ४५ ॥

45. Beautiful [are] heaven-and-earth, pleasant near by, of great courses; seven divine waters have flowed; let them free us from distress.

It has been indicated that the seven visible rays are flowing from the sun are just like rivers, they have given the shape to earth and heaven.

सूर्यायै देवेभ्यो मित्राय वरुणाय च।

ये भूतस्य प्रचेतसस्तेभ्य इदमकूरं नमः ॥ ४६ ॥

46. unto SĒryā, unto the gods, unto Mitra and Varuṇa, unto them who are forethoughtful of that which exists, have I paid this homage.

The function of the natural forces has been indicated.

य ऋते चिदभिन्निषः पुरा जनुभ्य आतुदः।

संधाता संधि मघवा पुरुवसुर्निष्कर्ता विहृतं पुनः ॥ ४७ ॥

47. He who, without a clamp, before the piercing of the neck-ropes, combines a combination ² he the bountiful, the one of much good, removes again what is spoiled.

It has been indicated that the bond energy, regulate the synthesis.

अपास्मत् तम उच्छतु नीलं पिशङ्गमुत लोहितं यत्।

निर्दहनी या पृषातुक्चुस्मिन् तां स्थाणावध्या संजामि ॥ ४८ ॥

48. Away from us let the darkness shine, that is deep blue, brown, and also red; she who is consuming, spotted, her I fasten on this pillar.

It has been expressed that in the visible world, the bond energy is just like the pillar of the creation.

यावतीः कृत्या उपवासने यावन्तो राज्ञो वरुणस्य पाशाः।

व्यूढयो या असमूढयो या अस्मिन् तां स्थाणावधिं सादयामि ॥ ४९ ॥

49. How many witchcrafts in the outer garment, how many fetters of king Varuṇa, what failures, what non-successes, them I cause to sit upon this pillar.

It has been indicated that the synthesis and the degradation is regulated by the bond energy.

या मे प्रियतमा तनूः सा मे बिभाय वाससः।

तस्याग्रे त्वं वनस्पते नीविं कृणुष्व मा वयं रिषाम॥५०॥

50. What is my dearest self, that of me is afraid of the garment; of it do thou, O forest-lord makes first for thyself an inner wrap; let us not suffer harm.

The synthesis of protecting coverings of the plant has been indicated.

ये अन्ता यावतीः सिचो य ओतवो ये च तन्तवः।

वासो यत् पत्नीभिरुतं तन्नः स्योनमुप स्पृशात्॥५१॥

51. What ends [there are], how many edges, what webs, and what lines; what garment woven by the spouses may that touch us pleasantly.

Formation of the food chains and the food webs in the nature has been indicated.

उशतीः कन्यला इमाः पितृलोकात् पतिं यतीः।

अवं दीक्षामसृक्षतु स्वाहा॥५२॥

52. Eager, these young girls, going to a husband from the father's world, have let go the consecration: hail !

53. Her, let go by B,haspati, all the gods maintained; what splendor is entered into the kine, with that do we unite this woman.

It has been indicated in the succeeding verse that in the living-beings the functions of the chemical energy is controlled by the nucleus-B,haspati under the natural forces. Accordingly all the functions have been attributed to the chemical energy.

बृहस्पतिनावसृष्टां विश्वे देवा अधारयन्।

वर्चो गोषु प्रविष्टं यत् तेनेमां सं सृजामसि ॥५३॥

बृहस्पतिनावसृष्टां विश्वे देवा अधारयन्।

तेजो गोषु प्रविष्टं यत् तेनेमां सं सृजामसि ॥५४॥

बृहस्पतिनावसृष्टां विश्वे देवा अधारयन्।

भगो गोषु प्रविष्टं यत् तेनेमां सं सृजामसि ॥५५॥

बृहस्पतिनावसृष्टां विश्वे देवा अधारयन्।

यशो गोषु प्रविष्टं यत् तेनेमां सं सृजामसि ॥५६॥

बृहस्पतिनावसृष्टां विश्वे देवा अधारयन्।

पयो गोषु प्रविष्टं यत् तेनेमां सं सृजामसि ॥५७॥

बृहस्पतिर्नावसृष्टां विश्वे देवा अधारयन्।

रसो गोषु प्रविष्टं यत् तेनेमां सं सृजामसि ॥५८॥

54. Her, let go by B,haspati, all the gods maintained; what brilliancy is entered into the kine, with that do we unite this woman.

55. Her, let go by B,haspati, all the gods maintained; what fortune is entered into the kine, with that do we unite this woman.

56. Her, let go by B,haspati, all the gods maintained; what glory is entered into the kine, with that do we unite this woman.

57. Her, let go by B,haspati, all the gods maintained; what milk is entered into the kine, with that do we unite this woman.

58. Her, let go by B,haspati, all the gods maintained; what sap is entered into the kine, with that do we unite this woman.

It has been indicated whatever brilliancy, fortune, glory or energy in the milk and sap is due to the chemical energy, under the control of nucleus (B,haspati)

यदीमे केशिनो जना गृहे ते समर्तिषू रोदेन कृण्वन्तोऽघम्।

अग्निष्ट्वा तस्मादेनसः सविता च प्र मुञ्चताम् ॥५९॥

59. If these hairy people have danced together in thy house, doing evil with wailing-, from that sin let Agni and SavitË release thee.

यदीयं दुहिता तव विकेश्यरुदद् गृहे रोदेन कृण्वत्यंघम्।

अग्निष्ट्वा तस्मादेनसः सविता च प्र मुञ्चताम् ॥६०॥

60. If this daughter of thine has wailed with loosened hair in thy house, doing evil with wailing-, from that sin etc. etc.

यज्जामयो यद्युवतयो गृहे ते समर्तिषू रोदेन कृण्वतीरघम्।

अग्निष्ट्वा तस्मादेनसः सविता च प्र मुञ्चताम् ॥६१॥

61. If sisters, if young women, have danced together in thy house, doing evil with wailing-from that sin etc. etc.

यत् ते प्रजायां पशुषु यद्वा गृहेषु निष्ठितमघकृद्भिरूघं कृतम्।

अग्निष्ट्वा तस्मादेनसः सविता च प्र मुञ्चताम् ॥६२॥

62. if in thy progeny, in thy cattle, or in thy houses is settled any evil done by the evil-doers-from that sin etc. etc.

इयं नार्युषं ब्रूते पूल्यान्यावपन्तिका।

दीर्घायुरस्तु मे पतिर्जीवाति शरदः शतम् ॥६३॥

63. *This woman, scattering shriveled grains appeals: be my husband long-lived ; may he live a hundred autumns.*

इहेमाविन्दु सं नुद चक्रवाकेव दम्पती।

प्रजयैनौ स्वस्तकौ विश्वमायुर्व्यं श्रुताम् ॥६४॥

64. *Here, O Indra, do thou push together these two spouses like two cakravakas; let them, with [their] progeny, well-homed, live out all their life-time.*

It has been indicated that the assimilated carbon is working in the nature like two spouses in a cyclic fashion like two cakravakas.

यदासन्ध्यामुपधाने यद् वौपवासने कृतम्।

विवाहे कृत्यां यां चक्रुःस्नाने तां नि दध्मसि ॥६५॥

65. *What is done on the chair, on the cushion, or what on the covering; what witchcraft they have made at the wedding—that do we deposit in the bath.*

यद् दुष्कृतं यच्छमले विवाहे वहतौ च यत्।

तत् संभलस्य कम्बले मृज्महे दुरितं वयम् ॥६६॥

66. *What ill deed, what pollution at the wedding, and what on the bridal car—that difficulty do we wipe off on the dress of the wooer.*

संभले मलं सादयित्वा कम्बले दुरितं वयम्।

अभूम युजियाः शुद्धाः प्र ण आर्युषि तारिषत् ॥६७॥

67. *Having settled the defilement on the wooer, the difficulty on the dress, we have become worship-ful, cleansed; may he extend our life-times.*

कुत्रिम् कण्टकः शतदन् य एषः।

अपास्याः केश्यं मलमर्षं शीर्षण्यं लिखात् ॥६८॥

68. *The artificial hundred-toothed comb (?) that is here shall scratch away the defilement of the hair of her, away that of her head.*

It has been indicated that the hundred elements of the nature assist the glucose in the synthesis of the carbon skeleton.

अङ्गादङ्गाद् वयमस्या अप यक्ष्मं नि दध्मसि।

तन्मा प्रापत् पृथिवीं मोत देवान् दिवं मा प्रापदुर्वैश्वरिक्क्षम्।

अपो मा प्राप्नम्लमेतदग्ने यमं मा प्रापत् पितृंश्च सर्वान् ॥६९॥

69. *Away from every limb of her do we deposit the yaksma; let that not attain the earth nor the gods; let it not attain the heaven , the wide atmosphere; let that defilement not attain the waters, O Agni; let it not attain Yama and all the Fathers.*

The synthesis of the cell body has been indicated.

सं त्वा नहामि पर्यसा पृथिव्याः सं त्वा नहामि पयसौषधीनाम्।

सं त्वां नह्यामि प्रजया धनैः सा संनद्धा सनुहि वाज्रमेमम् ॥७०॥

70. I gird thee with the milk of the earth; I gird thee with the milk of the herbs; I gird thee with progeny, with riches; do thou, being girded, win this strength.

It has been indicated that the chemical energy is the source of life on the earth, and food in the plants.

अमोऽहमस्मि सा त्वं सामाहमस्म्यक् त्वं द्यौरहं पृथिवी त्वम्।

तावहि सं भवाव प्रजामा जनयावहै ॥७१॥

71. He am I, she thou; chant am I, verse thou; heaven I, earth thou; let us come together here; let us generate progeny.

जनिर्यान्ति नावग्रवः पुत्रियन्ति सुदानवः।

अरिष्टासू सचेवहि बृहते वाजसातये ॥७२॥

72. The unmarried if us seek a wife, the liberal seek a son; may we, with uninjured life-breath, be companions, in order to what is great, to winning of strength.

ये पितरोवधूदृशा इमं वहतुमार्गमन्।

ते अस्यै वध्वै संपत्यै प्रजावच्छमै यच्छन्तु ॥७३॥

73. What bride-beholding Fathers have come to this bridal-car, let them bestow on this bride, with her husband, protection accompanied with progeny.

येदं पूर्वागन् रशनायमाना प्रजामस्यै द्रविणं चेह दुत्वा।

तां वहन्त्वगतस्यानु पन्था विराड्रियां सुप्रजा अत्यजैषीत् ॥७४॥

74. She who hath come hither before, girdling herself (?), having given to this woman here progeny and property-her let them carry along the road of what is not gone; this one, a viraj, having progeny, hath conquered.

प्र बुध्यस्व सुबुधा बुध्यमाना दीर्घायुत्वाय शतशारदाय।

ग्रहान् गच्छ ग्रहपत्नी यथासौ दीर्घा त आर्युः सविता कृणोतु ॥७५॥

75. *Continue thou awake, waking with good awakening, unto length of life of a hundred autumns; go to the houses that thou mayest be house-mistress; let SavitĒ make for thee a long life-time.*

It has been indicated the chemical energy continuously remain fresh through out the life time, where *SavitĒ*-enzymes as stimulator grant it a long life time in the living-beings.

It has been indicated in a symbolic fashion that due to the assimilated carbon, the world of the living-beings came in to the existence through evolution. Where assimilated carbon with chemical energy is every where and working in an integrated cyclic manner just like husband and wife work together in a family.

9. Genetics- Cow-omni-form

Four are his horns, three are the feet that bear him; his heads are two, his hands are seven in number.

Bound with a triple bond the Steer roars loudly: the mighty God hath entered in to mortals y g. 4-58-3

The four horns is a symbolic expression of the DNA, where four horns represents-four base of the DNA, two head represents two strips of the DNA, three legs represents- a triplet code of the DNA, the seven hands represents seven bonds in between triplet nucleotide pair, with its triple bond the DNA roars loudly just like a steer. It has entered in to mortals (living-beings).

Yama beyond, below Vivasvat —beyond that do I see nothing whatever; into Yama has entered my sacrifice; Vivasvat stretched after the worlds (bhu). Atharvaveda 18-2-32

It has been expressed that in the biological world, which is before us, I see nothing beyond Vivasvat-DNA, from him Yama chromosomes have been synthesised. They have been stretched in the world in the form of food chains and the food webs of the living- beings in the nature.

a. y bhu-Cell and DNA- Tva—È

In the Vedic terminology the cell has been termed as y bhu, literary it means y - to move and bhū- to be, they follow each other and in succession they proceeds towards evolution

The cell has been termed as *ṛbhu* and the different stages of the cell have been termed as *ṛbhu*, *ṛbhuk-an Vibhvan* and *VĒja*.

The Nucleus has been termed as *B, haspati*, the DNA has been termed as *Tva—Ē* and *Vivasvat*, the cell division has been expressed as renewal of parents.

In the same fashion the chromosome has been termed as *Yama*, which has the information for life and death. The two four eyed brindled dogs of *Yama* is a symbolic expression for the DNA, which constitute the Chromosome, where two dogs represents two strips of the DNA and four eyes is a symbolic expression for the two base pairs of the DNA. The DNA has been termed as *Tva—Ē* and *Vivasvat*. The Duplicating DNA has been expressed through the metaphor of *SinĪvĒĪ*.

सिनीवालि षुष्टुके या देवानामसि स्वसा।
जुषस्व हव्यमाहुतं प्रजां देवि दिदिद्वि नः॥६॥

The shape of the single loop of the DNA has been indicated through her broad hips, the two dividing DNA strips have been designated as her fair arms and the projecting nucleotides have been expressed as fair fingers.

The single loop of the DNA look like the full moon, it has been expressed through *REkĒ*. The duplicating DNA strips exhibits crescent shaped structures, it has been expressed by saying *Kuhu* and *Gangu*, it means the shape of the dividing strips looks like first day of the moon.

The nucleotide pair has been termed as a.,vins. The triplet code has been termed as *tri-ira*. The hydrogen triple bond has been termed as *Trita or Trika* and double bond as *Duka*, they together as *Trika-Duka*.

The structure and functions of the DNA has been expressed symbolically through the family relationship.

b. Modern concept

All the living-creatures exhibit the same functions at the cellular level, under which energy transformation, growth and reproduction are their natural qualities. In all the living-beings

RNA-Ribose Nucleic Acid or DNA-De-oxy Ribose Nucleic Acid is the main genetic material, which decides the course of life. The credit for discovering the De-oxy Ribose Nucleic Acid goes to the Watson and Crick. It has brought a revolution in the field of biotechnology.

In the biology it is a known fact that in the human beings there are 23 pairs of chromosomes, in which one pair *xx*, or *xy*, which decides the gender and one pair of chromosome have the information for the life and death. It regulates the life through the Genetic hereditary characters. The chromosomes consist of DNA a characteristic feature of the DNA is the fixed content and sequence of nucleotide pairs along the entire length of its double helix. In this respect any one species of DNA differ from the other species. Accordingly the species diversity is there in the nature with different hereditary characters. A definite number of nucleotides constitute a gene, which have the information about the synthesis of specific kind of the proteins and the enzymes regulate the metabolic reactions.

The DNA is having only four types of bases Adenine, Guanine, Thymine and Cytosine they are arranged on the DNA spiral strips in different sequences. The two base Adenine and Guanine are known as purine and two base Thymine and Cytosine are known as pyrimidine, purine and pyrimidine are complimentary with each other, such as Adenine= Thymine and Guanine = Cytosine and vice versa. These complimentary bases are bind with each other by hydrogen double bond and triple bond. The sequence of three bases, called a triplet known as codon, with four kinds of bases in the DNA. There are 64 codes, which are known as genetic code, which is a code for amino acid and constitute a language code for the protein synthesis. The DNA through transcription synthesise mRNA-messenger Ribose Nucleic Acid and mRNA through translation synthesise proteins.

c. The Tva—È DNA Deoxy Ribose Nucleic Acid

The living cell has been termed as *y̐bhu*, nucleus as *B,haspati*, chromosomes as *Yama*, genetic material as *Tva—È* and *Vivasvat*.

The structure of DNA De oxy Ribose Nucleic Acid has been expressed symbolically, through association and interrelationships of the different forms with one another. Their relationship has been expressed through the family relationship as parents, mother, father, wife, son and daughter, union of two has been indicated through A,,vins, it represents a nucleotide pair of DNA. The 64 codes may constitute a language code for recording the thoughts and deeds of an individual, which is imperishable and is stimulated by the words and the thought.

The genetic material DNA is present universally in all the living-beings. It has been expressed as shaper of all the creatures. It has all the information of life.

त्वष्टां रूपाणि हि प्रभुः पशून्विश्वान्समानुजे। तेषां नः स्फुतिमा यज॥९॥

Tva—Ê the lord hath made all forms and all the cattle of the field:

Cause them to multiply for us y j g. 1-188-9

The DNA has been termed as *Tva—Ê*, who is shaper of all creatures with multiplication, hence it has been termed as omni-form (*Vi.,varupa*), it means the DNA is present in all the living-beings.

For *Tva—Ê*, he who knows each sacred song, brought thee to life, pre eminent o'er all the things that be.

It has been expressed that *Tva—Ê*² DNA is a supreme genetic material, which is the source of life, and it bears the information of life and death.

विश्वेभ्यो हि त्वा भुवनेभ्यस्परि त्वष्टाजन्तसाम्नः साम्नः कृविः।

स ऋणचिदृणया ब्रह्मणस्पतिर्दुहो हुन्ता मह ऋतस्यधृतिरि॥१७॥

Guilt-avenger is B,haspati, who slays the spoiler and upholds the mighty law y j g. 2-23-17

The DNA, synthesize the chromosomes and the chromosomes synthesize the nucleus, hence it has been said that *Tva—Ê* begot *B,haspati*. The *B,haspati* represent nucleus, which has been expressed as regulator and guide.

Run thou past the two four eyed, brindled dogs of SarÊmÊ, by a happy road; then go unto the beneficent Fathers, who revel in common revelry with Yama. Atharvaveda 18-2-11

What two defending dogs thou hast, O Yama, four eyed, sitting by the road, men watching, with them, O king, do thou surround him; assign to him well being and freedom from disease Atharvaveda 18-2-12

The structure of the DNA has been indicated symbolically through *Yama* (chromosome), the *Yama's* two brindled dogs four eyed watch the path of man, it means they represents two helix of the DNA and the four eyes represents two base pairs, they watch the path of man. It means the life of an individual get regulated by the information, which is there in the coded language of the DNA, it has been said that O king of life *Yama*-chromosome, guide him for well being and freedom from disease. It means all information about the life is in the chromosomes.

Broad nosed, feeding on lives, copper colored, Yama's two messengers go about after men ((jana); let them give us back here today excellent life(asu) to see the sun. Atharvaveda, 18-2-12

It has been indicated that *Yama's two messengers go about after men*. The two messenger are two strips of DNA, which through hereditary characters regulate the physical development of the body, and in its language code it records the deeds of an individual, which go about after a man. It means after the death of an individual, the language code of his deeds is imperishable, which give him back life through opening of the same language code on the duplicating DNA in the womb, where development of the body is according to the hereditary characters and thought energy of previous birth through the language of the DNA decides the course and fate of life.

d. A,,vin- Nucleotide pair

The language of the DNA decides the course of life. The thoughts and actions of an individual are recorded in the coded language of the DNA with birth simultaneously

The DNA consists of nucleotide pairs, which are united with each other through the hydrogen bonds, a nucleotide pair has been expressed as A,,vin, which is attached to two strips of DNA. Accordingly the A,,vin -nucleotide pair has been expressed as son of two Mother metaphorically.

याभिः परिज्मा तनयस्य मज्जना द्विमाता तूषु तरणिर्विभूषति।

याभिस्त्रिमन्तुरभवंद्विचक्षणस्ताभिरू षु कृतिभिरश्विना गतम्॥४॥

The aids wherewith the Wanderer, through his offspring's might, or the Two Mothered Son shows swiftest mid the swift.

Wherewith the sapient one acquired his triple lore,- Come hither unto us, O A,,vins, with those aids.

The A,,vins represents the nucleotide pair ÿ g. 1-CXII-4

आ वां स्थौ अश्विना श्येनपत्वा सुमृळीकः स्वर्वा यात्वर्वाङ्

यो मर्त्यस्य मनसो जर्वीयान्निवन्धुरो वृषणा वार्तरहाः॥१॥

Flying with falcons, may your chariot, A,,vins, most gracious, bringing friendly help, come hither,-

Your chariot, swifter than the mind of mortal, fleet as the wind, three seated, O ye mighty ÿ g. 1-CXVIII-1

The nucleotide pairs of DNA are very active in the triplet form, it has been indicated through three seated, they divide very rapidly, hence it has been said that their speed is falcon like and swifter than the mind, their function in the cell are related with oxidation and reduction reaction in side the cell, they speed up the process of DNA duplication, it has been indicated by A,,vin-union of two, where each reaction in succession nourishes with synthesis or degradation, hence it has been said that they nourishes the infant ÿ g.1-95-1

द्वे विरूपे चरतः स्वर्थेअन्यान्या वृत्समुप धापयेते।

हरिरन्यस्यां भवति स्वधावाञ्छुक्रो अन्यस्यां ददृशे सुवर्चाः॥१॥

5. Two fair goals travel two unlike in semblance: each in succession nourishes an infant.

One bears a God like Babe of golden color; bright and fair-shining is he with the other ÿ g. 1-95-1

The function DNA synthesis and duplication in the cell accompanied by reversible oxidation and reduction reaction, which speedup the process of duplication, it has been indicated by A,,vin-union of two, where each reaction in succession nourishes with synthesis or degradation, hence it has been said that they nourishes the infant ÿ g.1-95-1

दशेमं त्वष्ट्रं नयन्तु गर्भमर्तन्दासो युवतयो विभृत्रम्।

तिग्मानां कुं स्वयंशसं जनेषु विरोचमानं परि षीं नयन्ति॥२॥

Tva—Ê's ten daughters, vigilant and youthful, produced this Infant borne to sundry quarters.

They bear around him whose long flames are pointed, fulgent among mankind with native splendour j g.1-95-2

The function of the oxidation and reduction has deeply concern with the DNA, it has been indicated through *Tva—Ê's* ten daughters, which are two double bond and two triple bond of hydrogen of the four nucleotide pairs of DNA.

e. Role of Trita-Triple bond

सनेम ये तं कुतिभिस्तरन्तो विश्वाः स्पृष्ट आर्येण दस्यून्।

अस्मभ्यं तत्त्वाष्ट्रं विश्वं रूपमरन्ध्रयः साख्यस्य त्रिताय॥१९॥

May we gain wealth, subduing with thy succour and with the Arya, all our foes, the Dasyu.

Our gain was that to Trita of our party thou gavest up Tva—Ê's son Vi.,varupa j g.2-11-19

The synthesis of DNA and its duplication is mainly dependent on its triple hydrogen bond, which has been indicated through *Trita-Triple* bond, only with the knowledge of *Trita* and its function, it has been established that *Tva—Ê-DNA* acts in the nature through *Trita*, due to which its omni-form nature that all the living-beings have DNA De oxy Ribose Nucleic Acid or RNA Ribose Nucleic Acid has been exhibited with biodiversity in the nature.

त्वष्टा यद्वज्रं सुकृतं हिरण्यं सहस्रं त्वष्ट्रं स्वपा अवर्तयत्।

धृत्त इन्द्रो नर्यपांसि कर्तुवेऽहंवृत्रं निर्पामौब्जदर्णवम्॥१॥

When Tva—Ê deft of hand had turned the thunderbolt, golden with thousand edges, fashioned more skillfully,

Indra received it to perform heroic deeds. V,tra he slew, and forced the flood of water forth j g.1 -85-9

The triple and double hydrogen bonds play a major role in the synthesis of mRNA and DNA duplication, which has been expressed by the *Trikadruka* (=, ≡) and the electrostatic charge play its role with the help of magnetic energy through the formation and

breaking of the bonds, which is thunderbolt of *Indra*. It has been indicated by asking *Indra* to drink *Soma* in an anthropomorphic manner. It is just like a heroic act of the *Indra*.

He slew the *v, tra* - he removes the obstacle and released the water during the reaction.

त्रिवचुरेण त्रिवृत्तारथेन त्रिचक्रेण सुवृता यातमर्वाक्।
पिबन्त गा जिन्वन्तमर्वतो नो वर्धयन्तमश्विना वीरमुस्मे॥२॥

Come to us with your chariot triple seated, three wheeled, of triple form that rolleth lightly.

Fill full our cows, give mettle to our horses, and make each hero son grow strong, O a,,vins y g.1-CXVIII-2

The double helical DNA is the chariot of the a,,vins where nucleotides are arrange in triplets, which constitute a triplet genetic code, hence, they are triple seated, it represent triplet code, three wheeled, it means its base sequence is repeated with triplets and it has three forms in the nature.

त्वष्टा वासो व्यदधाच्छुभे के बहुस्पतेः प्रशिषा कवीनाम्।
तेनेमां नारीं सविता भगश्च सूर्यामिव परिऽ धत्तां प्रजयां ॥५३॥

Tva—È disposed (vi-dha) the garment for beauty, by direction of B,haspati, of the poets; therewith let SavitÈ and Bhaga envelop this woman, like SÈrya, with progeny. Atharvaveda, 14-1-53

त्वष्टादुहित्रे वहतु कृणोति तेनेदं विश्वं भुवन् समति।

यमस्य माता पर्युह्यमाना मुहो जाया विवस्वतो ननाश ॥५३॥

Tva—È makes a wedding-car for his daughter; by reason of this, all this creation comes together; the mother of Yama, wife of great Vivasvat, being drawn about, disappeared 18-1-53

Tva—È makes a wedding-car for his daughter; by reason of this, all this creation comes together; the mother of Yama, wife of great Vivasvat. The synthesis of the complimentary base pairs of the new DNA has been expressed in this fashion “having made one of like colour, they gave her to Visvasvat”

अपागृहन्मृतां मर्त्येभ्यः कृत्वा सर्वणामदधुर्विवस्वते।

उताश्विनावभरद् यत् तदासीदजहादु द्वा मिथुना सूरण्यूः ॥३३॥

They hid away the immortal (bio soul) one from mortals; having made

one of like colour, they gave her to Vivasvat just like his wife; what that was carried also the two A,,vins; and Saraṣyu deserted two twins (Pair of chromosomes) Atharvaveda 18-2- 33.

The *Tva-Ē* DNA synthesise new DNA from the DNA template, the same has been termed as the bridal car. The single strand of the DNA template has been termed as the daughter of *Tva-Ē* and the new DNA has been termed as *Vivasvat*, The DNA template has been termed as the daughter of the *Tva-Ē* DNA and the same has been termed as wife of the *Vivasvat*- new DNA. Which has been synthesized from the DNA template, his wife- the DNA template due to the synthesis mRNA lost her identity, hence it has been said that his wife *Saraṣyu* daughter of *Tva-Ē* has disappear. It means the daughter represents the DNA template and after the synthesis of the mRNA, the DNA lost its identity, which has been expressed metaphorically. The *Saraṣyu* carried also the two A,,vins, it means the DNA template synthesise new DNA with complimentary base pairs. Accordingly the DNA synthesise the pairs of the chromosomes, it has been expressed by that *Saraṣyu* deserted two twins.

He is the father of A,,vins (nucleotide pair), it means A,,vins nucleotide pairs have been synthesised from the parent DNA. He is the father of *Yama- Yamī* (Twinned pair of chromosome) It means chromosomes have been synthesised from the DNA, it has been indicated by saying that *Saraṣyu* deserted two twins. In this way the formation of the chromosome pair has been indicated symbolically.

He is the father of *Manu*-human race. It indicates that DNA is responsible for the evolution of the human species

त्रिकदुकेभिः पावते षड्वरिक्मिद् बृहत्।

त्रिष्टुब् गायत्री छन्दांसि सर्वा ता यम अर्पिता॥ ६॥

With *Trikadrukas* it purifies it self six wide ones verily great one; *tristubh*, *gayatri*, the meters: all those (are) set in *Yama* Ath. 18-2-6.

The activity of the DNA has been indicated through *Trikadruka* (=, ≡), who represents a triple bond and a double bond of hydrogen, through which the complimentary base pairs are joined with each other. ‘The six wide ones’ represents the three base pairs. ‘The

verily great one' it indicates a triplet language code on the DNA template. The language of the DNA has been indicated through the *tristup*, *GĒyatrĪ* and the meters: all those (are) set in *Yama*. It means the information is in the chromosome.

The triple and double hydrogen bonds play a major role in the synthesis of mRNA and DNA duplication, it has been expressed by the *Trikadruka* (=, ≡) and the electrostatic charge play its role with the help of magnetic energy through the formation and breaking of the bonds, it has been indicated by asking *Indra* to drink Soma in an anthropomorphic manner. It has been described as heroic act of the *Indra*.¹

He slew the *v, tra* and released the water during the reaction 4²

The reactions are reversible and operate in succession with oxidation and reduction.⁵³

The well organized system of DNA duplication is due to the triple bond, it has been termed as *Trita*.^{6.4}

-
- 1 Upon the great *Trikadruka* days, Hero, rejoicing thee, O *Indra*, drinks the *Soma*.
Come with Bays of steeds to drink of libation, shaking the drops from out they beard contented *ṽ g. 2- 11-17*
In the *Trikadruk*as he drank the *Soma*: then in its rapture *Indra* slew the *Dragon*. *ṽ g.2-15-1*
 - 2 When *Tva—Ē*deft of hand had turned the thunderbolt, golden with thousand edges, fashioned more skilfully,
Indra received it to perform heroic deeds. *V, tra* he slew, and forced the flood of water forth. *ṽ g.1 -85-9*
 3. To fair goals travel two unlike in semblance: each in succession nourishes an infant.
One bears a God like Babe of golden colour; bright and fair-shining is he with the other *ṽ g.1-95-1*
 4. May we gain wealth, subduing with thy succour and with the *Arya*, all our foes, the *Dasyu*.
Our gain was that to *Trita* of our party thou gavest up *Tva—Ē's* son *Vi, varĒpa* *ṽ g.2-11-19*

A single loop of DNA has four base pairs, having two, double bond and two, triple bond, the total is ten. It has been indicated by Tva—Ē's ten daughters.¹

Originally the DNA has only four types of base, the three bases constitute a genetic code means a code for an amino acid for the synthesis of protein, there are 64 codes. In the Vedas the triplet genetic code has been termed as three headed demon or *Trisira* the son of Vi., *varupa* (omniform) Tva—Ē; till the triplet code is in association with the DNA, it is unproductive. In the nature one of the strand of the DNA act as a template for the synthesis of mRNA in the presence of the enzyme DNA polymerase. Which have the coded genetic information for the protein synthesis, the base sequence in mRNA is complimentary to the base sequence in parent DNA. The synthesis of mRNA for the protein synthesis is its productive power, which initiates the protein synthesis, the same has been expressed through *Trita*- triple bond, which is the slaughter of the three headed, six eyed demon (three complimentary base pairs) ṽ g.10 -99-6

स इद्दसं तुवीरवं पतिर्दश्लक्षं त्रिशीर्षाणदमन्यत्।

अस्य त्रितो न्वोजसा वृधानो विपा वराहमयोअग्रया हन्॥६॥

Lord of the dwelling, he subdued the demon who roared aloud, six eyed and triple headed.

Trita made stronger by the might he lent him, struck down the boar with shaft whose poison was iron ṽ g.10-99-6

स पित्र्याण्यायुधानि विद्वानिन्द्रैषित आप्त्यो अभ्ययुध्यत्।

त्रिशीर्षाणं सप्तर्षिं जघन्वान्वाष्टस्य चित्रिः संसृजे त्रितो गाः॥८॥

Well skilled to use the weapons of his father ṽptya urged on by Indra fought the battle then Trita slew the foe seven rayed three headed and freed the cattles of the son of Tva—Ēṽ g.10-8-8

The release of the cattle's indicates the productivity of the

1. Tva—Ē's ten daughters, vigilant and youthful, produced this Infant borne to sundry quarters.

They bear around him whose long flames are pointed, fulgent among mankind with native splendour ṽ g. 1-95-2

mRNA, which takes part in protein synthesis through the genetic code. The triplet code generates due to the separation of triplet base through breaking the two-double and a single triple bond.

The weapon of the *Trita* is bond energy it has been indicated by *Indra*-electrostatic energy and *J̥ptya* water. The triplet code generates due to the separation of triplet base code through the breaking of the two double and a single triple hydrogen bond with hydrolysis. *Fought the battle then Trita slew the foe seven rayed three headed*. The breaking of the bonds and the removal of the triplet code has been indicated through the seven rays and three head. Accordingly *Tva—Ē's Vi,,varupa* -the omni-form nature has been expressed due to the duplication of the DNA in a systematic manner. The DNA is universally present in the living organisms. It acts in the nature through the chromosome-*Yama* and new DNA from the DNA template *Vivasvat*. In this fashion the DNA spread in all the directions in the form of living-beings. It has been expressed as the cattles of the son of omni-form *Tva—Ē* symbolically. The *Trita* freed the cattles of *Tva—Ē*. It indicates the replication of the DNA with breaking of the triple bond with hydrolysis.

भूरीदिन्द्र उदिनक्षन्तमोजोऽवाभिन्त सत्पतिर्मन्यमानम्।

त्वाष्टस्य चिद्विष्टरूपस्य गोनामाचक्राणस्त्रीणि शीर्षा परा वर्क ॥१॥

Lord of the brave Indra cleft him in pieces, which sought to gain much strength and deemed him mighty. He smote his three heads from his body seizing the cattle of the omni-form Tva—Ē Rg. 10-8-9.

The battle of Indra is a symbolic expression for the activity of the bond energy. The synthesis and duplication of the DNA molecule depends on the breaking of the hydrogen double bond and triple hydrogen bond energy. The triple bond of the hydrogen is strong and mighty. It binds the nucleotide pairs in the DNA with strong hold. The removal of the triplet code has been indicated metaphorically that *lord of brave Indra cleft him in pieces. He smote his three head* is a symbolic expression for the triplet code. The *seizing the cattle of the omni-form Tva—Ē* is a symbolic expression for the locking up of the DNA replication by the triple hydrogen bond.

अपागूहन्मृतां मर्त्यैऽभ्यः कृत्वा सर्वर्णामद्युर्विवस्वते।

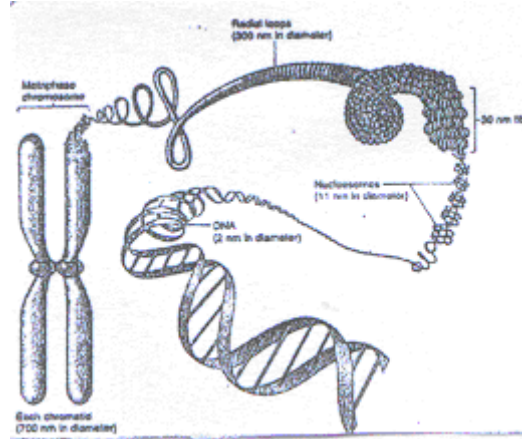
उताश्चिनावभरूद् यत् तदासीदजहादु द्वा मिथुना सूरण्यूः ॥३३॥

यमः परोऽवरो विवस्वान् ततः परं नाति पश्यामि किं चन।

यमे अष्टवरो अर्धे मे निर्विष्टो भुवो विवस्वान्वाततान ॥३२॥

Yama beyond, below Vivasvat –beyond that do I see nothing whatever; into Yama has entered my sacrifice; Vivasvat stretched after the worlds (bhu) Atharvaveda 18-2-32

It has been indicated that in the biological world, which is before us, I see nothing beyond *Vivsvat*-DNA. From the *Yama* chromosomes have been synthesized. They have stretched in the world in the form of food chains and the food webs. It has been indicated that in the Biological world, the DNA is universally present.



10. Origin of Life -Race of ý bhus

a. Introduction

Energy transformation, growth and reproduction are the fundamental principles of life, which are common from the unicellular to multi cellular organisms. All forms of life consist of cells and originate from the pre existing cells only. They maintain their continuity through cell division. Which shows continuity of life principle, which became complex with the evolution. With the acceptance of the view that all the life forms have been originated from the pre existing cells only, it has given the importance to the quest as and when the first life was originated on the earth.

Energy transformation

It has been indicated that the creation came in to the existence through energy transformation and the fundamental energy remains constant in all conditions.

The full from the full he bends up (ud-ac); the full is poured with the full; also that may we know today, whence that is poured out. Ath. 10-8-29.¹

This beautiful one (F) (is) unageing, an immortal in the house of a mortal; for whom she (was) made, he lies; he who made (her) grew old. Ath. 10-8-26.²

The creation has been evolved from the fundamental energy under space, time and the environmental conditions. The fundamental energy is unborn, un-ageing, as an immortal it resides in the house of mortals. It has been expressed that the synthesised components of the nature like atom and cells are complete in them selves and as a mortal they under go deterioration with ageing. In the atom and the cell the fundamental energy resides as immortal. It has been indicated that with the reproductive capacity of the cells, the life energy became young through cell division and the old cells under go ageing.

The role of the fundamental energy and synthesis of the natural components in the creation has been explained. It has been indicated that all the natural components have been synthesized from the fundamental energy but the fundamental energy remain constant in all condition. The natural components are complete in them selves.

The electromagnetic energy

It has been expressed metaphorically that electromagnetic energy is present every where.

Both their father are also their son; both the chief are also the meanest (Kani—ha) of them; the one god, who has entered in to the mind, born the first, and he within the womb. Ath. 10-8-28.³

It has been expressed that the fundamental life energy-consciousness has generated first in the atoms and in the womb. It has been termed as first born, than the fundamental energy

१. पूर्णात् पूर्णमुदचति पूर्णं पूर्णेन सिच्यते। उतो तद्वद्विद्याम् यतस्तत् परिषिच्यते ॥ २९ ॥

२. इयं कल्याण्यश्रुजरा मर्त्यस्यामृता गृहे। यस्मै कृता शये स यश्चकार जजार सः ॥ २६ ॥

३. उत्तैर्षा पितोत वा पुत्र एषामुत्तैर्षा ज्ये उत वा कनिः।

एको ह देवो मनसि प्रविष्टः प्रथमो जातः स उ गर्भेऽ अन्तः॥

proliferate along with the electrostatic energy of the nucleus as electromagnetic bond energy. They together have been termed as both the father and their son. The electromagnetic energy is present in the universe and at the micro level in the atom and the cell. Hence it has been termed as chief as well as minute (*kani—ha*)

The various forms of the living-beings are due to the difference in the base sequence of DNA (De oxy ribose Nucleic Acid) and the number of the nucleotides in it. Otherwise all living-beings have the same DNA as genetic material, which carries the hereditary characters from parents to the off-springs.

DNA present in the living-beings has the genetic information about the events of life in the genes and the genetic code, which decides the course of life in the living-beings. The consciousness is only a spectator in the body, it regulates the cell body for its survival and accordingly under space, time and the environmental conditions, the cell body searched the means of adaptation in the nature.

In a simple way we can say that life-consciousness is a sign of battle in the nature for its survival. Its survival in the closed system depends on the nourishment and energy transformation inside the system. Where photosynthesis provides food through carbon assimilation and genetic material DNA undergo modification with change in its base sequence. Accordingly in the battle of life, it has developed its own ways to fight against the adverse conditions during the life with evolution, the cell proceeds towards the evolution with species diversity and complexity in the nature. Where human species is highly evolved showing the evolution of the mental qualities.

The whole play of life on the earth is related with the energy transformation and generation of the fundamental energy inside a closed system, once it has been enclosed inside an atom, it has maintained its continuity through electromagnetic bond energy. How it has maintained its continuity with evolution in the molecules, matter and the cell, it has been expressed metaphorically in different ways.

The origin of life has been explained metaphorically in an anthropomorphic manner. They revealed the fact that life on the

earth has been generated through the process of chemical evolution,

The first cell has been synthesized in the water. The same has been termed as celestial race under the name of *ṽbhu*, from which the world of living-beings came in to the existence.

With the synthesis of first living cell, how the system became self-sufficient and self regulated with the evolution, it has been explained through conversation in a symbolic fashion metaphorically with interdisciplinary approach.

The life energy has been described as Steed- Courser, who proceeds towards its end through oblation in the nature with the *ṽbhu*-cell. The DNA has been termed as *Tva-Ē* and the *ṽbhu*-cell have been termed as *dappled goat* metaphorically. The cellular body is proceeding towards sacrificial oblation in the nature through ageing. In the same fashion so as to describe the cellular functions in the nature and related metabolic reaction have been expressed through imaging the life energy as a war-horse. Just like a war-horse, the life energy is going for oblation in the creation sacrifice. Through the metaphor, it has been indicated that the cell is the place of halt of the life energy, the streaming of protoplasm and metabolism acts as rope to bind him in the cell. It has been prayed that the life energy may remain in the cell with them. At some places the *ṽbhu* has been compared with warrior, due to the life energy the creation has come into the existence with evolution. The same has been described metaphorically as sacrifice.

5. *Invoker, ministering priest, atoner, fire-kindler, Soma-presser, sage, reciter,*

With this well ordered sacrifice, well finished, do ye fill full the channels of the rivers.

The *ṽbhu*-cell has been described as *Invoker, ministering priest, atoner, fire-kindler, Soma-presser, sage, reciter* in the creation sacrifice. It means in the living-beings all the functions are due to the cells, which is a well ordered, well finished system of actions and interactions. They full-fill all the requirements of the living-beings through the channels of the food chains and food webs in the nature. It has been indicated through the channels of the rivers metaphorically.

The life energy prepares the cell body and carries it forward. His preparation in the nature to fight against the adverse environmental conditions has been expressed metaphorically through the war horse for victory. It has been termed as Steed. His preparation as war horse for victory has been attributed to the cell in general and his journey in the life is just like the journey of war horse of the A., *vamegha yajṣa*. The war horse faces the obstacles during the journey, in the same fashion the *ṃbhu*-cell face the obstacles in the nature, during the journey of life.

The Steed-life energy, which is first mounted by *Indra*, through the movement of charged particles, it has been described metaphorically as war horse of A., *vamedha yajṣa*. In the *Yajṣa* a horse is sent as a symbol of victory over other states, which is to be sacrificed after victory. The ornaments, trappings, coverings, cords and ropes of the horse to bind him have been described metaphorically to indicate the cork, bark and the cell wall of the *ṃbhu*-cell with life energy. The cooking of the flesh, during his journey, cooking vessels, covers and dishes its distribution after the cooking. They are metaphors to indicate the functions of the cell in the nature with its metabolic reactions. The cell came at rest with ageing (ṃ g. 1-163-1)

The life energy is like a warrior, who is going on war with joy like a hero, who on his car-cell body, *flying like tempest wind*.

4. *Who gaineth precious booty in the combats and moveth, winning spoil among the cattle;*

Shown in bright colour, looking on the assemblies, beyond the churl, to worship of the living

As a warrior in the battle of life, it gains precious booty. It means during the period of life, the cellular body-*ṃbhus-cells* synthesize the food materials with development of the physical body. It has been expressed as precious booty in the combats.

The food material synthesised by the primary producers move among the cattle-living-beings, through food webs and the food chains. It has been expressed by *and moveth, winning spoil among the cattle;*

Due to the feeding mechanism, the living-beings exhibit bright

colours and the group of communities. Over looking the churl, they worship the living. It means the life energy neglects the non living, it worship the living-beings with life. It has been expressed by saying- *Shown in bright colour, looking on the assemblies, beyond the churl, to worship of the living.*

b. Origin of life

Modern researches in the field of origin of life have demonstrated the a biotic formation of organic substances in the early pre-biological history of the earth A. I. Oparin 1922, J.B.S. Haldane 1928 and Bungen Burg de Jong 1929. They have suggested that in the primitive conditions, coaservates may get produced, as and when two hydrophilic colloidal solutions carrying opposite charges are being mixed, the same has been expressed here as consciousness- Life energy.

2. *They who for Indra, with their mind formed horses harnessed by a word. Attained by works to sacrifice.*

How the *ṛbhu*-cell initially came in to the existence. It has been indicated symbolically through the mind and word. It signifies the rapid movements of the charged particles. They generates the sound and the vibrating sound energy grasped by the *Indra*-electrostatic energy, hence it has been said that the *ṛbhu* with their mind formed horses harnessed by the *Indra*.

They take part in the creation sacrifice-*Yajña* -the actions and inter action. Through the mind and word it has been indicated metaphorically that the coaservative drops are as closed primitive system in which the *Indra* - Electrostatic charge is the first, who has appeared with its +ive and -ive charges. It has been expressed by the horses harnessed. It has given the place for the movements of the charged particles for the sacrifice-actions and interactions 2

3. *They for the two NĒsatyas wrought a light rolling car moving every way: They formed a nectar yielding cow.1*

They- the coaservative drops showing movements like a lightly rolling car for the two *NĒsatyas* - the two *NĒsatyas* are oxidation and reduction reactions with energy transformation in anaerobic

१. तक्षत्रासत्याभ्यां परिज्मानं सुखं रथम्। तक्षत्रेणुं संबर्द्धयाम्॥३

condition in side a closed system in the early primitive conditions., which have given the feed back to the developing *sudhanvan*-coaservates, the same has been expressed symbolically as nectar yielding cow.

A. I. Oparin 1968 has also suggested that photosynthetic activity can be promoted, when porphyrin is incorporated in the coaservates, this fact has been indicated by the metaphor 'cow from the skin' in a symbolic manner.

c. Prokaryotic Cell- *ṽbhu*

. अयं देवाय जन्मने स्तोमो विप्रैर्भिरासया। अकारि रत्नधातमः॥

1. For the celestial Race this song of praise which gives wealth lavishly ṽ g.1-20-1

The celestial race-cell, the *ṽbhu*-cell has been praised as the divine class or race of the *ṽbhus*, due to the fact that once the *ṽbhu*-cell has developed, it has maintained its continuity through cell division. The three sons of *Sudhanvan*-developing coaservates, who is said to have been descendant of *ṽngirasa* -viscous sap. They were named severally *ṽbhu*-eldest-mature Cell- *Vibhvan*-vigorous, and *VĒja* is youngest (Young new cell). They are collectively called as *ṽbhus* from the name of *ṽbhu* due to their skilful good work for the living-beings, as they are the only source of organic matter on the earth. Hence they have been termed as celestial race, which is the source of organic matter without check.

The ṽbhu represents a mature cell, once it ha been synthesized in the nature, it maintains its continuity through the cell division, accordingly at the cellular level all the living organisms exhibits same functions in the nature. Hence the *ṽbhu* has been described as the celestial race.

य इन्द्राय वचोयुजा तत्क्षुर्मनसा हरी। शर्मोभिर्यज्ञमाशत॥२

2. They who for Indra, with their mind formed horses harnessed by a word, Attained by works to sacrifice.ṽ g.1-20-2

Colloidal system-How the *ṽbhu*-cell initially came in to the existence? It has been indicated symbolically through mind, and the **horses harnessed by word** to take part in the creation sacrifice. In this way the appearance of the coaservate drops as closed primitive

system with colloidal charged particles has been explained.

The formation of the charged particles in a hydrophilic colloidal system has been indicated by **Horses harnessed**. Where the *Indra*² electrical charge is the first, who has appeared with its +ive and –ive charges, this phenomena is just like the words appear from mind and spread rapidly, in the same fashion the charged particles exhibit movements with generation of vibrating sound, the sound can be grasped by the electrostatic energy of the charged particles just like phonoatomic effect. It has generated the series of actions and interactions as a part of creation sacrifice.

Accordingly with movements of the charged particles and actions and inter actions in a closed system a primary cell body has taken its shape in early primitive condition.

तक्षन्नासत्याभ्यां परिज्मानं सुखं रथम्। तक्षन्त्येनं संबुद्धिं गाम्॥३

3. They for the two *NĒsatyas* wrought a light rolling car moving every way: They formed a nectar yielding cow. *ṽ g.1-20-3*

Oxidation and reduction-The coaservative drops in the primitive condition has given the place for charged particles, showing movement just like light rolling car with movements in all directions. The two reactions oxidation and reduction have been expressed as two *NĒsatyas*. The energy generated due to these reactions have given the feed back to the drops, just like nourishment to the developing coaservates, it has been indicated by saying that they formed nectar yielding cow. The cow is metaphor for the nourishment.

The *sĒdhanvan*-coaservates-literary it means with internal inherent source of energy.

(The two *NĒsatyas* is a name of an *A,,vins* - wonder workers and other is *Dasra*-wonder worker as destroyer, they have been considered as the horse of the *Indra* and *A,,vins*- nucleotide pairs of the DNA, it means the activity of the DNA is enhanced by oxidation and reduction reactions.)

युवाना पितरा पुनः सत्यमेन्त्रा ऋजूयवः। ऋभवौ विष्टयक्रत॥४

4. The *ṽbhus* with effectual prayers, honest, with constant labour made, their Sire and Mother Young again. *ṽ g.1-20-4*

Multiplication- the renewal of the cells by multiplication has been expressed by saying that they made their parents young again.

To acquire the stage of multiplication, a considerable time period is necessary. It has been indicated by *effectual prayers, honest and constant labour*. Accordingly the process of synthesis with multiplication has been started with feed back of oxidation and reduction reactions,

The same has been indicated through the metaphor that they made *their Sire and Mother Young again*.

सं वो मदासो अमृतेन्द्रेण च मरुत्वता। आदित्येभिश्च राजभिः॥५॥

5. Together came your gladdening drops with Indra by the Maruts girt, with the *Ādityas*, with the Kings. *ṛg. I-20-5*

Ageing-Accordingly with time under natural conditions gladdening drop appear with the charged activities of *Indra*-Electricity, water and *Ādityas*- (twelve month). The appearance of gladdening drop reveals the fact that together with *Indra*, water and time the coaservate under go ageing.

It indicates about the beginning of the prokaryotic cell in the nature.

उत त्वं चमसं नवं त्वष्टुर्वस्य निष्कृतम्। अकर्त चतुरः पुनः॥६॥

6. the sacrifice ladle, wrought newly by the God *Tva—Ē's* hand (DNA) Four ladles have ye made thereof. *ṛg. I-20-6*

Cell division-The sacrificial ladles (developing cell) was made new by *Tva—Ē* with four ladle.

The synthesis of the genetic material with time has been expressed by *Tva—Ē*-DNA

Tva—Ē is a term for genetic material, it means first genetic material has been synthesized in side the cell, it has given the capacity for cell division during the primitive anaerobic conditions and in turn the cell has been divided in to four.

It indicates that the genetic material has been synthesized in the cell.

ते नो रत्नानि धत्तन् त्रिरा साप्तानि सुन्वते। एकमेकं सुशस्तिभिः॥७॥

7. Vouchsafe us wealth, to him who pours thrice seven libations, ye to

each. Give wealth, pleased with our eulogies. ÿ g.1-20-7

The nature-Accordingly with time the nature became enriched with organic matter and gases. It has been expressed in a anthropomorphic manner symbolically, as if nature is asking to the *ÿbhus* to give wealth of organic matter and gases to the nature, who is providing thrice seven libations-thrice seven fuels, they are five major elements, twelve *¶ditya* (twelve months), three atmospheric layers and life energy.

They operate for the safety of the prokaryotic cell in the nature. It has been indicated that with the development of the coaservate in to a prokaryotic cell body, the cell enter in to the control of natural forces and the cells became the source of organic matter and gases in the nature. It has been indicated symbolically in an anthropomorphic manner through asking them *Give wealth, pleased with our eulogies.*

अधारयन्तु ब्रह्मयोऽभजन्त सुकृत्यया। भागं देवेषु यज्ञियम्॥८॥

8. *As ministering Priests they held, by pious acts they won themselves, A share in sacrifice with Gods.ÿ g.1-20-8*

The self acquired status in the nature. It means with their function in the nature, the *ÿbhus* them selves have acquired the status just like a priest with a share in the nature along with the natural forces.

The infinite nature- it has been indicated that with the formation of the prokaryotic cell in the nature, the *ÿbhus*- cells became the source of nutrients in the nature along with the natural forces. Accordingly the function of *ÿbhus* is just like priest in the creation sacrifice, they initiate the process of evolution of infinite nature with exchange of gases in the atmosphere and addition of organic matter. It is their share in the creation sacrifice, hence the *ÿbhus* have been mentioned just like as ministering priest.

In this fashion the process of evolution being initiated with the formation of a prokaryotic cell

d. Development of Autotrophic ÿ bhu-cell

The most important event for life on the earth is generation of life energy and conversion of light energy in to the chemical energy

by chlorophyll. The generation of life energy and synthesis of chlorophyll in the early primitive condition has been indicated by addressing to the eukaryotic *ṛbhu* in an anthropomorphic manner in a symbolic fashion.

Generation of life energy-

. उत्तिष्ठ ब्रह्मणस्पते देवयन्तस्त्वेमहे।

उप प्र यन्तु मरुतः सुदानव इन्द्रप्राशूभवा सचा॥

The holy work I wrought before is wrought again: my sweetest hymn is sung to celebrate your praise. Here, O ye ṛbhus, is this sea for all the Gods: sate you with Soma offered with the hallowing word ṛ g. 1-CX-1

The *ṛbhus* (cells) have been praised for their work and it has been said “O ye *ṛbhus*, is this sea for all the Gods”, it means for the natural forces the space in the cell is just like a vast ocean for their activity, which acts with the generation of magnetic life energy. The *Soma* represents magnetic life energy, which is being generated within the cell due to the movements of electrons in side a closed system and due to the streaming of protoplasm in the cell. The same is the symbol of life in a cell, where natural metabolic reactions sate the cell with their activities.

The generation of life energy sate the cell on an easy path; it has been indicated by the metaphor of *Soma offered with hallowing word*, where the cell is just like a vast sea for the activities of the natural components, with their functions, they gratify the cell with generation of life energy through vibrations. The sound of vibration has been expressed by the hallowing word and generation of life energy has been indicated by the *Soma* offered.

त्वामिद्धि सहसस्पुत्र मर्त्य उपब्रुते धने हिते।

सुवीर्य मरुत आ स्वश्व्यं दधीत यो व आचुके॥२॥

2. When seeking your enjoyment onward from afar, ye, certain of my kinsmen, wandered on your way,

Sons of Sudhanvan, after your long journeying, ye came unto the home of liberal Savitṛ ṛ g. 1-110-2

It has been indicated that with generation of life energy, the sudhanvan's sons-prokaryotic cells were moving on their path of development, the formation of the viscous sap has been indicated

by the kinsmen-*ṅgiras*-sap, from him the *ṅbhū* have descended. During this long journey, they came in to the home of liberal *SavitĒ*, the *SavitĒ* gave them immortality.

प्रैतु ब्रह्मणस्पतिः प्र देव्यैतु सूनृता।

अच्छा वीरं नयं पृङ्क्तिराधसं देवा यज्ञं नयन्तु नः॥३॥

3. *Savitr gave you immortality, because ye came proclaiming him whom naught can hide. And this drinking- chalice of the Asura, which till that time was one; ye made to be fourfold ṅ g. 1-110- 3*

proclaiming him whom naught can hide.- It has been indicated that with generation of life energy, the *ṅbhus* came in contact of sap-protoplasm and *SavitĒ*-stimulator-enzymes; with this the generation of life energy with streaming of protoplasm and the metabolic reactions gave them immortality through cell division in a fourfold manner. It means once the generation of life energy has started in the cell body, it has maintained its continuity through cell division from generation to generation in a fourfold manner, it has been expressed in the words of *ṅbhū*- *ye came proclaiming him whom naught can hide ṅ g. 1-110- 3*

The synthesis of chlorophyll and development of autotrophic nature has been indicated by cow from the skin. The cow is metaphor for nourishment and skin is for protoplasmic cell wall.

Life Energy- The life energy is symbol of consciousness in the living beings, it is generated in the cell body at its own with streaming of protoplasm and disappear with the ageing of the cell body. The nature of the life energy is synonym to the energy generated in an atom due to the spinning vibrations of the electrons around the nucleus, it interconnect the cellular body in the same fashion just as bond energy bind the atoms. It is a sort of magnetic energy the same has been described as *Soma*.

4. *When they had served with zeal at sacrifice as priests, they mortal as they were, gained immortality. The ṅbhus, children of Sudhanvan, bright as suns were in a year's course made associate with prayers.1 ṅ g. 1-CX-4*

१. यो वा॒घते॑ ददा॒ति सून॑रं वसु स ध॑त्त अक्षि॒ति श्रव॑ः।

तस्मा॑ इळां सुवीरा॒मा य॑जामहे सुप्र॒तूर्ति॑मने॒हस॑म्॥४॥

With the formation of the prokaryotic cell in the nature, *the ÿbhus-* The cells have acquired status of just like priests in the creation sacrifice along with the natural forces. The *ÿbhus* have a share in the creation sacrifice, with their functions in the nature. The mortal substances, the developing-*Sudhanvan*-coaservates gained immortality through cell division in a year's course. It means the life energy has been generated through the activities of the mortal materials and in turn they became immortal with cell division.

5 *The ÿbhus, with a rod measured, as 'twere a field, the single sacrificial chalice wide of mouth.* ÿ g. 1-CX-5

The ÿbhus- have selected a chalice wide of mouth in order for the cell division, the wide mouth is a metaphor for consuming food, which indicates that the youngest cell *VĒja* exhibits metabolism at its maximum, they are selected for the cell division.

6. *As oil in ladles, we through knowledge will present un to the Heroes of the firmament our hymn.,-- The ÿbhus who came near with this great Father's speed, and rose to heaven's high sphere to eat the strengthening food.* 1 ÿ g. 1-CX-6

With a little knowledge of it we praise the heroes of the firmament *ÿbhu*, who rose to heaven's high sphere to consume the food material, it means single chalice, which was developed initially spread in all the directions, during the process of evolution, they have developed internal mode of nutrition under anaerobic conditions.

7. *ÿbhu to us is Indra freshest in his might, ÿbhu with powers and wealth is giver of rich gifts. Gods, through your favour may we on the happy day quell the attacks of those who pour no offerings forth.* 2 ÿ g. 1-CX-7

They provide fresh energy, which is a gift of nature. It means *the ÿbhus-cells* having power of energy transformation and

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- १ तमिद्वौचेमा विदथेषु शुम्भुवं मन्त्रं देवा अनेहसम्।
 इमां च वार्चं प्रतिहर्यथा नरो विश्वेद्वामा वो अश्नवत्॥६॥
२. को देवयन्तमश्नवज्जन् को वृक्तबर्हिषम्।
 प्रप्र द्वाश्चान्यस्त्याभिरस्थितान्तर्वावृक्षयं दधे॥७॥

exchange of gases, it is a great gift of nature for the living-beings.

उप॑ क्षुत्रं पृ॒ञ्जीत॑ हन्ति॒ राज॑भिर्भु॒ये चित्सु॑क्षिति॒ दधे।
नास्य॑ वृ॒र्ता न त॑रु॒ता म॑हाध॒ने नाभै॑ अस्ति॒ वज्रि॑र्णः॥८॥

8. *Out of skin, O ÿbhus, once ye formed a cow, and brought the mother close unto her calf again. Sons of Sudhanvan, Heroes, with surpassing skill ye made your aged parents youthful as before ÿ g. 1-CX-8*

Chlorophyll- The synthesis of chlorophyll from the outer wall of the cell has been indicated by saying “out of skin they formed a cow, and brought the mother close unto her calf again,” the cow is a symbol of nourishment, which feed the child with her milk just like a mother. The ÿbhu cell under go ageing with consumption of food, to check this, the ÿbhu has synthesized the chlorophyll pigments from outer wall of the cell at their own; in turn the cell became young with supply of food material through photosynthesis. In this way the young cells get the nourishment, and the source of nourishment became close to them, just like a mother came close to her calf again. It means with the development of autotrophic nature and cell division, the ageing cells became young. It has been indicated by “ÿbhus, ye made your aged parents youthful as before.” the daughter cells have been termed as young parents.

Working with skill they wrought the lightly rolling car: they wrought the Bays (two charges) who bear Indra and bring great gifts.

The ÿbhus for their parents made life young again; and fashioned for the calf a mother by its side. Rg. 1-cxi-1

The streaming movement of the charged particles has been indicated by lightly rolling car, which is a gift of nature. The electrical charges have been expressed through the bays of Indra.

The ÿbhus for their parents made life young again; and fashioned for the calf a mother by its side. In the next stanza it has been said that “the ÿbhus for their parents made life young again; and fashioned for the calf a mother by its side”, the developing cells have been mentioned here as calf and its mother is a symbolic expression for the nourishment, who can nourish it. It indicates about the energy transformation in the primitive conditions, in turn the ÿbhus (cells) have acquired longevity in the nature. Rg. 1-cxi-1

These sons of yours (y̐bhus) well skilled in work of wondrous power brought forth to life the two great mothers first of all.

To keep the truth of all that stands and all that moves, ye guard the station of your sons who knows know guile y̐g. 1-CLIX-3

Here it has been indicated by the Vedic seers that during the evolution of life on the earth, the y̐bhus (Cells) have acquired life through their skill of work, “brought the two great mothers first of all” it means two reactions oxidation and reduction, which acts as two mother for the functions of the nature. They are the symbol of truth, it means through them the nature is working as a system, hence they have been termed as two mothers, who regulates and feed the system through their by products

4. They with surpassing skill, most wise, have measured out the Twins united in their birth and in their home.

They refulgent Sages weave within the sky, ye in the depths of sea, a web for ever new. Rg.1-CLIX-3&4

ते सूनवः स्वर्षसः सुदंससो मही जंजुर्मातरा पूर्वचित्तये।

स्थातुश्च सत्यं जगत्तश्च धर्मणि पुत्रस्य पाथः पदमद्वयाविनः ॥३॥

ते मायिनौ ममिरे सुप्रचेतसो जामी सयोनौ मिथुना समोकसा।

नव्यन्नव्यं तन्नुमा तन्वते दिवि समुद्रे अन्तः कुवयः सुदीतयः ॥४॥

The twins united in their birth are the strips of DNA, which weave food webs and food chains, which is for ever new.

With their skill they have synthesized a pair of twins united in their birth, it means the two strips of DNA. Which have brought the food webs and food chains in the sky and in the sea (world of living-beings), which is always new.

It has been indicated here that the whole world of living beings have came in to existence from the genetic material DNA, which is a double helical structure. The same is responsible for the formation of food webs and food chains in the nature.

e. Development of Eukaryotic y̐bhu-cell

The eukaryotic y̐bhu--cell and its functions in the nature have been expressed in another hymn, where energy transformation has been praised

किमु श्रेष्ठः किं यविष्ठो न आजगन्किमीयते दूत्यं ऽ कद्यदूचिम

न निन्दिम चमसं यो महाकुलोऽग्ने भ्रातॄण इद्धतिमूदिम॥१॥

Why hath the Best, why hath the Youngest come to us? Upon what embassy comes he? What have we said?

We have not blamed the chalice of illustrious birth, we, Brother Agni, praised the goodness of the wood. § g.1-CLXI-1

Why hath the Best, why hath the Youngest come to us? The symbolic conversation of Agni and *ṽbhu* reveals the fact that youngest cell *VĒja* take part in the cell division and Agni-energy has been praised, which has synthesized the wood.

एकं चमसं चतुरः कृणोतन् तद्वा द्वे देवा अंबुवन्तद्वा आगमम्।

सौधन्वना यद्येवा कर्षिष्य साकं देवैर्यज्ञियासो भविष्य॥२॥

2. The chalice that is single makes ye in to four: thus have the Gods commanded; therefore am I come.

If O Sudhanvan's Children, ye will do this thing, ye shall participate in sacrifice with Gods. § g.1-CLXI-2

The Agni said that with the cell division, *ṽbhus* ye made four chalice from a single chalice, and in turn you are in command of the natural forces, the *sudhanvan's* children—*ṽbhus*, you will participate in the creation sacrifice with other natural forces. It means the *ṽbhus*-cells or we can say cellular organisms are having an important functional role in the nature along with the natural components.

It has been indicated here that through the energy transformation the developing cells have acquired the capacity for the division. The natural forces have influenced the further development of the cell. Accordingly with the actions and interactions, they became the part of the nature.
अग्निं दूतं प्रति यदब्रवीतनाश्रुः कर्त्तव्यं स्थ उतेह कर्त्तव्यः ।

धेनुः कर्त्वा युवशा कर्त्वा तानि भ्रातॄन् वः कृत्येमसि। ३॥ § g.1-CLXI-3

What to the envoy Agni in reply ye spoke, A courser must be made, a chariot fashioned here, A cow must be created, and the Twain made young. When we have done these things, brother, we turn to you.

In reply to Agni the *ṽbhu* said that a courser must be made for the chariot-cell, which is fashioned here, for its nourishment a cow is must and the Twain made young, we have done this and than we-

ÿbhu came to you.

The ÿbhu-cell has been designated as chariot. For its easy run a need of a courser has been expressed, the courser is life energy, cow is symbolic expression for the nourishment and twain is genetic material, who has been expressed as Tva—È in the next verse.

चक्रवांसं ऋभ्वस्तदपृच्छत क्वेदभूय स्य दूतो न आजगन्।
यदावाख्यच्चमसाञ्जतुरः कृतानादिद्रवष्टा ग्नास्वन्त न्यानजे॥४॥

4. When thus O ÿbhus, ye had done ye questioned thus whither went he who came to us a messenger?

Then Tva—È when he viewed the four wrought chalices, concealed him self among the Consorts of the Gods.ÿ g.1-CLXI-4

The Agni said that ÿbhus, when you have done all this, you have raised a question about the messenger and then Tva—È, who has viewed the four developing chalice and he himself concealed among the Consorts of the natural components.

It has been expressed that Tva—È-DNA, genetic material is acting as the messenger, who carries the hereditary characters from one generation to another generation. The courser of the cell is life energy. The messenger is DNA, who carries the message from one generation to another generation. It has been expressed that as soon as the cell has divided into four, the Tva—È (DNA), concealed him self in to the consorts of the gods (natural components). It means DNA has disappeared with the formation of the new cells.

In the nature, the genetic material is visible at the time of cell division and it disappears with the formation of the young cells. The same has been expressed here.

हनामैनाँ इति त्वष्टा यदब्रवीच्चमसं ये देवपानुमनिन्दिषुः ।
अन्या नामानि कृण्वते सुते सचीँ अन्यैरेनान्कन्याः नामभिः स्परत् ५॥

5. As Tva—È thus had spoken, let us slay these men who have reviled chalice, drinking cup of gods. They gave themselves new names when Soma juice was shed, and under these new names the Maiden welcomed them.ÿ g.1-CLXI-5

In the nature after the cell division, the parent cell lost their identity and young cells take over their functions in a new form.

Hence it has been indicated by saying ‘let us slay these men, who reviled the chalice (parent cells)’ and *ṛbhu-* cells made their parents young again with the new names and maiden-DNA strips welcome the newly formed cells with the generation of life energy, which has been indicated by saying, when *Soma* juice was shed.

इन्द्रो हरीं युयुजे अश्विनां रथं बृहस्पतिर्विश्वरूपामुपाजत।

ऋभुर्विभ्वा वाजो देवाँ अंगच्छत् स्वर्षसो यज्ञिर्य भागमैतन॥६॥

6. *Indra hath yoked his Bays, the A.,vin's car is horsed; B,haspati hath brought the Cow of every hue. Ye went as ṛbhu, Vibhvan, VĒja to the Gods Rg. 1-161-6*

For the further evolution bays of *Indra*, electromagnetic energy carries it towards the evolution. It has given it a push for further evolution. The *A.,vin's* car is horsed, it means the oxidation and reduction reactions came in to their full functions and *the B,haspati* (nucleus) brought the cow of every hue, the cow is metaphor for the organic matter in the living-beings. It means through the regulation of the metabolic reactions and the genetic material has brought biodiversity in nature, where every cellular organism acting as food for the other through food chains and food webs in the nature. It has been expressed as **cow of every hue**, where plants are primary producers and animals are secondary producers. The cow is a metaphor for nourishment. Accordingly the cells have acquired different stages as *ṛbhu*, *Vibhvan*, and *VĒja* during their life cycle. These three represents three stages of a cell as young, vigorous and old, their functions are under the natural factors.

निश्चर्मणो गार्मरिणीत धीतिभिर्या जरन्ता युवशा तार्कणेतन।

सौधन्वना अश्वादश्चमत्क्षत युक्त्वा रथमुप देवाँ अयातन॥७॥

7. *Ye by your wisdom brought a cow from out a hide; un to that ancient Pair ye gave again their youth. Out of a horse, Sudhanvan's Sons, ye formed a horse: a chariot ye equipped and went un to the Gods ṛg. 1-161-7*

f. Horse out of a horse - in the next step of evolution, the *ṛbhus* (cells) have developed a self nourishment system, through the development of proto-chlorophyll in the primitive condition the same has been indicated through the ‘Cow from the skin.’ The cow

is metaphor for nourishment, which acts as a horse and the cell became well equipped and young. It means in the primitive conditions, genetic material as RNA or DNA first has been synthesised in side a closed system, then with time proto-chlorophyll has synthesized from the cell wall, (In the primary conditions some compounds may have been deposited on the surface of the cells, which in turn may have given the way for the development of the cell-wall and proto-chlorophyll with time). The synthesis of proto-chlorophyll from DNA has acted as a horsepower for the evolution, accordingly it has been said “*Ye (y̐bhu) brought a horse out of a horse.*” It means the DNA - genetic material and chlorophyll are like a horsepower for the y̐bhus-cell. Thus the cell became resistant to survive in the nature through the cell division.

In the nature evolution of the living-beings is due to the DNA and the development of the carbon skeleton is due to the chlorophyll through photosynthesis, which is the source of food (Glucose) for the living-beings.

In this way the synthesis of the physical cell body has been described, how it proceeds towards further evolution, it has been indicated symbolically through **Ecological succession** in the nature.

The living-beings exhibit their functions of life cycle under the cosmic principles. During life the three energies shows their impact in orderly sequence under cosmic principles and remain unaffected, it has been indicated by त्रयः केशिनं ऋतुया वि चक्षते Three with long tresses show in ordered season

त्रयः केशिनं ऋतुया वि चक्षते संवत्सरे वपत् एक एषाम्।

विश्वमेकौ अग्निं चष्टे शर्चाभिर्घ्राजिरेकस्य ददृशे न रूपम्॥४४॥

Three with long tresses show in ordered season. One of them sheareth when the year is ended. One with his powers the universe regardeth: of one the sweep is seen, but his figure. Rg. 1-164-44

. The synthesis and disintegration in the living cell body is controlled by the **electromagnetic bond energy**, during the life it synthesizes the cellular body and the same disintegrate the body after death.

One with his powers the universe regardeth:

One regardeth from all sides, it is the **chemical energy** of the food, which enhance the metabolic reactions in the body and protect the body from all sides during the life time.

Of one the sweep is seen, but his figure.

The life energy-consciousness appears with birth and disappears with end of life cycle.

The life energy- consciousness in the body shows motion but his figure is not seen.

The three energies shows their impact in orderly sequence under cosmic principles, it has been indicated.

The journey of the *ṛbhu*-cell from life to death

The journey of *ṛbhu*-cell has been described in general with reference to the cell as an individual and as part of multi cellular organism, as all the living organisms in nature exhibits same functions as growth, reproduction and energy transformation at cellular level. The multi cellular organisms have been evolved from the unicellular organisms, and the mature cell has come in to the existence from the coaservate drops with the activity of charged particle in side the coaservate. In the nature first prokaryotic cell has developed, It has given the way for the evolution.

These facts have been revealed in the *ṛbhu* hymns.

The *ṛbhu* is a common name of *ṛbhu*, *ṛbhuk-an*, and *VĒja*, which represents three stages of the development of a cell as *ṛbhu*-eldest, *ṛbhuk-an*, newly formed-*Sudhanvan* and *VĒja*-youngest. The *ṛbhu*-cell has been synthesized in the nature at its own under the natural conditions, how it proceeds towards ageing-death, it has been revealed in a symbolic fashion through the mouth of eldest *ṛbhu*-mature cell in an anthropomorphic manner.

The *ṛbhu* is a protagonist, who narrates the *ṛbhu's path* from life to death with its functions in the nature. Here life energy has been described as steed- Courser, who proceeds towards its end through oblation in the nature with the *ṛbhu*-cell. The DNA has been termed as *Tva—Ē* and the *ṛbhu*-cell has been termed as Dappled goat metaphorically, because it take part in the creation sacrifice, who is proceeding towards sacrificial oblation in the nature through ageing and the life energy has been termed as war

horse, who is going for oblation in the creation sacrifice, through which the creation has come in to the existence with evolution. The same has been described metaphorically as sacrifice.

मा नो मित्रो वरुणो अयर्मायुनिन्द्र ऋभुक्षा मरुतः परि ख्यन्।

यद्वाजिनो देवजातस्य सप्तैः प्रवक्ष्यामो विदथे वीर्याणि॥१॥

1. Slight us not Varuṇa, Aryaman, or Mitra, ṽbhuk-an, Indra, Ayu, or the Maruts,

When we declare amid the congregation the virtues the strong Steed, God-descended ṽg.1-162-1

The story of ṽbhu start with the words of ṽbhu -cell that do not understand us inferior from any of the life resource, Varuṇa-gravity, due to the gravity the ṽbhu-cell has mass, Aryaman and Mitra - rays of light, ṽbhuk-an ² vigorous ṽbhu, Ayu-air and Maruts- water clouds are the natural forces. It has been indicated that when the Gods - the natural factors have been aggregated at one place then only the strong steed- ṽbhu-cell with life energy has been descended for sacrifice in the nature.

यन्निर्णिजा रेक्णसा प्रावृतस्य राति गृभीतां मुखतो नयन्ति।

सुप्राङ्गो मेम्यद्विश्चरुप इन्द्रापूष्णोः प्रियमप्येति पार्थः॥२॥

2. What time they bear before the Courser, covered with trappings and with wealth, the grasped oblation,

The dappled goat goeth straightforward, bleating, to the place dear to Indra and to Pu-an. ṽg.1-162-2

It has been asked that at which time before the Courser- life energy, the ṽbhu-developing cell, covered with trappings, and wealthy, which grasped the oblation, came in to the existence? The trappings, it is an indication towards the cellular coverings, which acts as the protector of the body, such as cell wall, cork, bark or skin in the animals. The wealth of the ṽbhu-cell is an indication for the cell organelles, which take part in the creation sacrifice with their functions.

The answer has been given that the dappled goat, goes bleating straight forward to the place near to Indra and Pu-an. The cell body has been compared with the dappled goat, which is moving forward towards end with the metabolic reactions, as the source of bleating-

sense, and development in the nature.

एष छागः पुरो अश्वेन वृजिनां पूष्णो भागो नीयते विश्वदैव्यः।

अभिप्रियं यत्पुरोळाशमवता त्वष्टेदेनं सौश्रवसाय जिन्वति॥३॥

3. Dear to all Gods, this Goat, the share of Pu-an, is first led forward with the vigorous Courser,

While Tva-Ê sends him forward with the Charger, acceptable for sacrifice, to glory.ÿ g.1-162-3

It has been expressed that the cell body, is an aggregation of the natural forces, which move forward with life energy, just like a vigorous courser. The Tva-Ê-DNA has the information for the physical development of the body, which carries forward the cell body, with respiratory oxidation of the food as the charger.

They prepare the cell body for the sacrifice-actions and interactions in the nature, with the physical development of the cell body. When the life cycle is completed, the cell body under go decomposition in the nature, and again mixed into the nature as nutrients. It has been expressed as the moment of glory, with completion of the journey.

यद्भविष्यत्पुत्रो देवयानं त्रिर्मानुषाः पर्यश्रुं नयन्ति।

अत्रा पूष्णः प्रथमो भाग एति यज्ञं देवेभ्यः प्रतिवेदयन्नृजः ॥४॥

4. When thrice the men lead round the Steed, in order, who goeth to the Gods as meet oblation,

The goat precedeth him, the share of Pu-an, and to the Gods the sacrifice announceth.ÿ g.1-162-4

With reference to the men, it has been said that men, with three stages in life move round the steed-life energy in order as child hood, young and old, and as such he move forward for oblation in the creation sacrifice.

The life energy of the cell body first prepares the cell body with development. It is a share of Pu-an-nourishment in the nature. With the end of life, the natural forces decompose the share of Pu-an in the nature. Symbolically, the bio-geo-chemical cycle has been indicated. It is the beginning of the creation sacrifice.

होताध्वर्युरावया अग्निमिन्धो ग्रावग्राभ उत शंस्ता सुविप्रः।

तेन यज्ञेन स्वरङ्कृतेन स्विष्टेन वक्षणा आ पृणध्वम्॥५॥

5. *Invoker, ministering priest, atoner, fire-kindler, Soma-presser, sage, reciter,*

With this well ordered sacrifice, well finished, do ye fill full the channels of the rivers.ṽ g.1-162-5

The *ṽbhu*-cell has been described as *Invoker, ministering priest, atoner, fire-kindler, Soma-presser, sage, reciter* in the creation sacrifice. It means in the living-beings all functions are due to the cell, which is a well ordered, well finished system of actions and interactions, which full-fill all the requirements of the living-beings through the channels of the food chains and food webs in the nature. It has been indicated through the channels of the rivers metaphorically.

After describing the role of *ṽbhu*-cell body as goat in the natural sacrifice, the life energy, which prepare it and carry it towards evolution has been termed as steed, his preparation as war horse for victory has been attributed to the cell in general and his journey as war horse, just as the war horse of the A,,*vamegha yajṣa* over come to the obstacles, in the same fashion the *ṽbhu*-cell or cellular body has to face the obstacles in the nature, during the journey of life.

यूपवस्का उत ये यूपवाहाश्चषालं ये अश्वयूपाय तक्षति।
ये चावैत पवनं सम्भरन्त्युतो तेषामभिगूर्तिर्न इन्वतु॥६॥

6. *The hewers of the post and those who carry it, and those who carve the knob to deck the Horse's stake.*

Those who prepare the cooking- vessels for the Steed,- may the approving help of these promote our work.ṽ g.1-162-6

The *ṽbhu*- cell as steed in the nature is proceeding towards oblation in the sacrifice, the forces, who bind it at one place and the forces, which prepare and dress him through metabolism for the *ṽbhu*-steed, it has been indicated by saying, who prepare the cooking vessels for the steed. The *ṽbhu* have been prayed that they may promote our work in the nature. It means the nature is working as a system due to the synthesis and degradation in an orderly manner, it has been expressed through the mouth of *ṽbhu*-cell that they may promote our work in the nature.

उप प्रागात्सुमन्मैऽधायि मन्म देवानामाशा उप वीतपृष्ठः।

अन्वेन विप्रा ऋषयो मदन्ति देवानां पुष्टे चक्रमा सुबन्धुम्॥७॥

7. Forth, for the regions of the Gods, the Charger with his smooth back is come; my prayer attends him.

In him rejoice the singers and the sages. A good friend have we won for the God's banquet. ÿ g.1-162-7

The ÿbhu-cell has been expressed as the God's banquet, which is the place for the interactions of the natural forces. With the cell division the natural forces follow him, just like sages and singers, for the development the cell body. It has been indicated by saying that the steed-ÿbhu has come close to the natural forces as friend to participate in nature.

The oxidation of the food with respiration acts as the charger, during the journey of life in the cell. The source of the oxidation is oxygen of the air, which give assistance to the developing cellular bodies with the metabolic reactions. It has been expressed by saying -

Forth, for the regions of the Gods, the Charger with his smooth back is come; my prayer attends him.

य द्वाजिनो दामं सन्दानमवतो या शीर्षण्या रशना रज्जुरस्य।
यद्वा घास्य प्रभृतमास्येरे तृणं सर्वा ता ते अपि देवेष्वस्तु॥८॥

8. May the fleet Courser's halter and his heel-ropes, the head² stall and the girths and cords about him.

And the grass put within his mouth to bait him,--among the Gods, too, let all these be with thee. ÿ g.1-162-8

The life energy, dwelling in the cellular body is a place of halt of the Courser-life energy in the cell body, which bind him in the cell, and the factors which assist him have been described metaphorically as heel ropes, the head-stall, the girths and cords around him, and the cell metabolism has been indicated through the grass put within his mouth, it means the food, which the cell consume and the grass to greed him is an indication towards the excess food, which is poisonous for the cell, The journey of the cellular body, is just like the journey of war horse in the A.,vamegha yajna. Through the metaphor, it has been indicated that the cell is the place of halt of the life energy, the streaming of protoplasm and metabolism acts as rope to bind him in the cell, it has been prayed that the life energy may remain in the cell with them.

यदश्वस्य कृविषो पक्षिकाश्च यद्वा स्वरौ स्वर्धितौ रिप्तमस्ति।
यद्वस्तयोः शमितुर्यन्त्रेषु सर्वा ता ते अर्पि देवेष्वस्तु॥१॥

9. What parts of the Steed's flesh the fly hath eaten, or is left sticking to the post or hatchet,

Or the slayer's hands and nails adhereth, -among the Gods, too, may all this be with thee. ङ g.1-162-9

It has been indicated that during the metabolism the cell synthesise many substances, out of these. The substances, which have been consumed and those substances, which remain unconsumed in the cell body, they are the by products and are just like the nails, which remain untouched from the slayer's hand, all these substances may remain among the natural components in the cell and may not harm it.

यदू वध्यमुदरस्यापवाति य आपस्य कृविषो गन्धो अस्ति।
सुकृता तच्छमितारः कृण्वन्तु मेधं शृतपाकं पचन्तु॥१०॥

10. Food undigested steaming from his belly, and any odour of raw flesh remaining,

This let the immolators set in order and dress the sacrifice with perfect cooking. ङ g.1-162-10

It has been prayed that the un-digested food in the cell and the bad odour of it, may be set in order by the consumers and dress the ङbhu-cell, so that the cell may proceed towards sacrifice with perfect cooking. It means, it has been prayed that the cell may move forward in life gradually, towards ageing with maturation of the cell body.

यत्ते गात्रादग्निना पच्यमानादग्निं शूलं निहतस्यावधावति।
मा तद्वूम्यामा श्रिषन्मा तृणेषु देवेभ्यस्तदुशद्भ्यो रातमस्तु॥११॥

11. What from thy body which with fire is roasted, when thou art set upon the spit, distilleth,

Let not that lie on earth or grass neglected, but to the longing Gods let all be offered. ङ g.1-162-11

It has been said by the ङbhu that what from thy body which with fire is roasted, it means the metabolic energy, which has been generated during the metabolism, during the life. It may be utilized by the natural forces within the cell.

ये वाजिनं परिपश्यन्ति पृच्छं य ईमाहुः सुरभिर्निहुरेति।
ये चार्वतो मांसमिक्षामुपासत उतो तेषामभिगूर्तिर्न इन्वतु॥१२॥

12. They who observing that the Horse is ready call out and say,
the smell is good; remove it;

And carving meat, await the distribution, - may their approving
help promote our labour. ÿ g.1-162-12

After maturity of the cell, it under go ageing, it has been indicated by saying that horse is ready and the carving meat, await the distribution, it means with ageing, the respective cellular parts will undergo decomposition, which will help in the ecological succession through modification of the physical environment, hence it has been said by ÿ bhu that, - may their approving help promote our labour.

यन्नीक्षणं मांस्यचन्या उखाया या पात्राण्यूष्ण आसेचनानि।
उष्णयापिधानां चरूणामुद्धाः सूनाः परि भूषन्त्यश्चम्॥१३॥

13. The trial fork of the flesh cooking caldron, the vessel out of
which the broth is sprinkled,

The warming-pots, the covers of the dishes hooks, carving
boards, - all these attend the Charger. ÿ g.1-162-13

The ÿ bhu-cells, acts just like the trial fork of the flesh cooking caldron, or the vessel out of which broth is sprinkled, along with this the warming pots, the covers of the dishes hooks, carving boards, all these attend the Charger. It means all the functions of the cells and the cellular metabolites are due to the charger- oxidation in the cell body.

निक्रमणं निषर्दनं विवर्तनं यच्च पङ्क्तिशमवर्ततः।
यच्च पृषौ यच्च घासिं जघासु सर्वा ता ते अपि देवेष्वस्तु॥१४॥

14. the starting place, his place of rest and rolling, the ropes
wherewith the Charger's feet were fastened,

The water that he drank, the food he tasted, - among the Gods,
too, may all these attend thee. ÿ g.1-162-14

The respiration is the symbol of life in the cell body. The starting place of the ÿ bhu-cell, his place of rest and rolling, the ropes, who bind his feet, the water that he drank, the food he tasted, during the journey of life, all these may approach to the natural forces in the nature with oxidation. It has been indicated.

मा त्वाग्निध्वनयीद्भूमगन्धिर्मोखा भ्राजन्त्यभि विक्तु जग्निः।
इष्टं वीतमभिर्गुतं वर्षट्कृतं तं देवासुः प्रति गृभ्णन्त्यश्मम्॥१५॥

15. Let not the fire, smoke- scented, make thee crackle, nor glowing caldron smell and break to pieces.

Offered, beloved, approved, and consecrated- such Charger do the Gods accept with favour. ÿ g.1-162-15

It has been prayed in a symbolic fashion that during the journey of life, the ÿ *bhu*-cell may not under go premature ageing and the natural forces may accept him for sacrifice with oxidation, after completing his journey of life.

यदश्चायं वासं उपस्तृणन्त्यधीवासं या हिरण्यान्यस्मै।
सुन्दानमर्वतं पङ्क्तीं प्रिया देवेष्वा यामयन्ति॥१६॥

16. the robe they spread upon the Horse to clothe him, the upper covering and the golden trappings,

The halters which restrain the Steed, the heel- ropes, all these, as grateful to the Gods, they offer. ÿ g.1-162-16

It has been said through the symbol of the war horse that the robe spread and cloth upon the horse, his upper covering, golden trapping and the halters, which restrain the steed, all these are grateful to the Gods- natural forces.

These covering, represent the cell wall of the plant cell, cork and bark of the plants and skin in the animals, who provide them protection from the injury, these all are the natural factors and part of the nature, which restrain the steed-life energy in the cell. They provide protection and longevity to the cellular organisms.

यत्ते सदे महसा शुकृतस्य पाण्यौ वा कशया वा तुतोदे।
सुचेव ता हविषो अध्वरेषु सर्वा ता ते ब्रह्मणा सूदयामि॥१७॥

17. If one, when seated, with excessive urging hath with his heel or with his whip distressed thee,

All these thy woes, as with the oblations' ladle at sacrifices, with my prayer I banish. ÿ g.1-162-17

It has been expressed that during the journey of the ÿ *bhu*-cells in the nature. The inhibitors or the obstacles are his woes during the sacrifice- actions and interactions. It has been expressed

symbolically, that I (the oxidation reaction) banish the obstacles with metabolism in the cell body.

चतुस्त्रिंशद्वाजिनो देवबन्धोर्वङ्ग्रीरश्वस्य स्वधितिः समैति।

अच्छिद्वा गात्रा वयुना कृणोत परुषरुनुघुष्या वि शङ्गस्त॥१८॥

18. The four- and thirty ribs of the swift Charger, kin to the Gods, the slayer's hatchet pierces,

Cut ye with skill, so that the parts be flaw less, and piece by piece declaring them dissect them j g.1-16218

The *y bhus* exhibits their functions in the nature under the control of the Charger- respiration in the cell body. The four and thirty ribs represent the metabolic products. They are kin to the natural forces, with their skill of oxidation and reduction reactions, the natural forces decompose the cell body after death, just like a slayer dissect the body in a sequence. In the same fashion the decomposers, decompose the body with oxidation in series. It has been indicated.

एकस्त्वष्टुरश्वस्या विशस्ता द्वा यन्तारा भवतस्तथ कृतुः।

या ते गात्राणामृतुथा कृणोमि ताता पिण्डानां प्र जुहोम्यग्नौ॥१९॥

19. Of Tva—E's Charger there is one dissector- this is the custom-two there are who guide him.

Such of his limbs as I divide in order, all these, amid the balls, in fire I offer. j g.1-162-19

The development of the cell body is regulated by the Tva—E DNA, with metabolic oxidation and reduction reactions in the cell body. These two reactions guide the development of the cell body under cosmic principles, out of the two reactions, one oxidation reaction acts as dissector. Accordingly, the catabolic reaction has been indicated symbolically through the dissector.

Further, it has been expressed in an anthropomorphic manner through the mouth of the oxidation reaction that such are his limbs, it means the oxidation and reduction reactions are the part of life, and I (the oxidation reaction) oxidise the food in order, with the release of the metabolic energy, just like the balls burn in the fire. It has been indicated by *amid the balls, in fire I offer*.

मा त्वा तपस्त्रिय आत्मापियन्त मा स्वधितिस्तन्व आ तिष्ठिपते।

मा ते गृध्रुरविशस्तातिहाय छिद्वा गात्राण्यसिना मिथू कः॥२०॥

20. Let not thy dear soul burn thee as thou comest, let not the

hatchet linger in thy body.

Let not a greedy clumsy immolator, missing the joints, mangles thy limbs unduly. ĳ g.1-162-20

After the death, the body may be buried in the soil. It has been prayed that, when the body proceeds on the path of decomposition, your soul may not feel pains. The sword may not injure thy body. The consumers may not consume your body parts unduly. It means it has been indicated that with burial of the dead, let not your soul burn thee, it means it may not remain here with the body. After the burial of the body in the soil, some greedy immolator may not misuse the dead body. It has been indicated through *Let not a greedy clumsy immolator, missing the joints, mangle thy limbs unduly.*

न वा उ॑ ए॒तन्नि॒यसे न रि॑ष्यसि दे॒वाँ इ॒दंषि प॒थिभिः सु॒गेभिः ।

हरी॑ ते॒ युञ्जा॒ पृष॑ती अ॒भूता॒मुपा॑स्थाद्वा॒जी धुरि॑ रास॒भस्य॑ ॥२१॥

21 No, here thou dies not, thou art not injured: by easy paths unto the Gods thou guest.

Both bays, both spotted mares are now thy fellows, and to the ass's pole is yoked the Charger. ĳ g.1-162-21

*No, here thou dies not*² it means the life energy is immortal; *thou art not injured*² it means life energy can't be injured. You are the guest of the natural forces, it has been indicated, that the dead cell body is just like a guest of the natural forces, they consume the body with oxidation in a normal course. It means with the death, the physical body will under go decomposition and in an easy way the body parts will be mixed into the nature. As such the dead body is the guest of nature as organic matter.

*The two bays*² oppositely charged ions, *both spotted mares*- the two strips of DNA, symbolically it has been indicated that the organic matter has two types of ions and the DNA has two strips. Through the bio-geo-chemical cycle, and cell division, they synthesize the cell body with life energy again. Accordingly the ions and the DNA are the followers of the life energy, and the oxidation and reduction reactions are yoked in the cell, just like the *ass's pole*.

सुगव्यं नो वाजी स्वयं पुंसः पुत्रां उत विश्वापुषं रयिम्।
अना-गास्त्वं नो अदितिः कृणोतु क्षत्रं नो अश्वो वनतां हविष्मन्॥२२॥

22. May this Steed bring us all-sustaining riches, wealth in good kine, good horses, many offspring.

Freedom from sin may Aditi vouchsafe us: the Steed with our oblations gain us lordship! *ÿ g.1-162-22*

It has been expressed symbolically that the new cell body is the source of prosperity in the nature, hence, it has been prayed, that this steed-*ÿbhu* may bring us prosperity in all manner. It has been also prayed that we may be free from sin, and *Aditi*-nature protect us. Accordingly the steed-*ÿbhu*-cell in our body, may grant us longevity with oblation in the nature.

h. Journey of life energy in the nature

The steed-life energy has been first mounted by *Indra*, through the movement of charged particles. It has been described metaphorically as war horse of *A.,vamedha yajña*. In the *Yajña* a horse is sent as a symbol of victory over other states, which is to be sacrificed after victory. The ornaments, trappings, coverings, cords and ropes of the horse to bind him have been described metaphorically to indicate the cork, bark and the cell wall of the *ÿbhu*-cell with life energy. The cooking of the flesh, during his journey, cooking vessels, covers and dishes its distribution after the cooking. They are metaphors to indicate the functions of the cell in the nature with its metabolic reactions. The cell came at rest with aging. (*ÿ g. 1-163-1*)

Life on the earth

The first life has originated on the earth in the water. The life is associated with three events in the life cycle, birth, life, and death under cosmic principles. Now it is a scientific fact that life on the earth is very much supported by the ozone layer in the atmosphere, for life water is essential and triplet code of DNA with triple bond of hydrogen regulate the life cycle with hereditary characters. All these facts about the life have been expressed symbolically addressing to the *ÿbhu*-cell in an anthropomorphic manner.

The first cell has been synthesized in the seawater and has been

termed as *ṛbhu*. It has been expressed symbolically by asking a question in an anthropomorphic manner to *ṛbhu-cell*.

यदक्रन्दः प्रथमं जायमान उद्यन्तमुद्गादुत वा पुरीषात्।

श्येनस्य पक्षा हरिणस्य बाहू उपस्तुत्य महि जातं तै अर्वन्॥१॥

1. What time, first springing in to life, thou neighedst, proceeding from the sea or upper waters,

Limbs of the deer hadst thou, and eagle pinions, O steed, thy birth is high and must be lauded. *ṛ g. 1-163-1*

It has been asked that at what time the *ṛbhu* has sprang in to life, the answer has been given that life has originated first in sea or in upper water. The life energy is having a speed like an eagle or Deer. The birth of life is very high, it must be lauded.

यमेन दत्तं त्रित एनमायुनगिन्द्राणं प्रथमो अर्ध्यतिष्ठत्।

गन्धर्वो अस्य रश्नामगृष्णात्सूरादश्वसवो निरतष्ट॥२॥

2. This steed which, Yama gave hath Trita harnessed, and him, the first of all, hath Indra mounted.

His bridle the Gandharva grasped. O Vasus, from out the Sun ye fashioned forth the Courser *ṛ g. 1-163-2*

It has been expressed that the Steed of life is *Trita* harnessed, which has been given by *Yama*, it is an indication towards the three stages of life- childhood, young and old age. The *Yama* represents chromosome, the chromosomes have the information for the development of the physical body, as such it has been said that it has been given by *Yama*, the life has been first mounted by *Indra*. The *Indra* represents electricity, in the early stages due to the movements of the charged particles in the developing coaservates, the life energy has been generated, hence it has been said that *Indra* has mounted first. It has been grasped by *Gandharva* as bridle, the *Gandharva* represents viscous mass of protoplasm, due to the streaming movements of the protoplasm life energy has its existence in the cell, when streaming get blocked, the life energy disappear, hence it has been said that the life energy has been grasped by the *Gandharva* as bridle, where bridle is metaphor for the life energy. *O Vasus*, it is an expression for the a-biotic substances, which have synthesized the *ṛbhu*- cell in the water first,

The sun is the main energy source on the earth, hence it has been said that the Courser-the cell has been fashioned by the sun.

असिं यमो अस्यादित्यो अर्वन्नसिं त्रितो गुह्येन वृतेन।

असिं सोमेन समया विप्रुक्त आहुस्ते त्रीणि दिवि बन्धनानि॥३॥

3. Yama art thou, O horse; thou art *Ĵditya*; Trita art thou by secret operation.

Thou art divided thoroughly from Soma. They say thou hast three bonds in heaven that hold thee *Ĵg. 1-163-3*

Yama art thou, O horse; thou art *Ĵditya*; Trita art thou *Ĵbhu*-cell in by secret operation. Due to the vigorous nature of the nature, the *Ĵbhu* has been called as steed metaphorically, which is taking part in the creation sacrifice, it came in to the existence from the *Yama*-chromosome and due to the twelve *Ĵditya*-twelve months under temperature pressure gradient, hence it has been said that thou art *Yama*, thou art *Ĵditya*, Trita art thou by secret operation, - it indicate about the synthesis of *Ĵbhu*-cell due to the Triple bond of the nucleotide pairs of the DNA. The genetic material, DNA has the information for the synthesis of the cell body. It bears the hereditary characters to synthesize the cell in nature.

Thou art divided thoroughly from Soma it means the whole synthesis is due to the *Soma*- magnetic energy, they say thou hast three bonds in heaven, which hold thee, it means Ozone layer in the atmosphere, which absorbs the ultra violet rays and due to which life is present on the earth.

त्रीणि त आहुर्दिवि बन्धनानि त्रीण्यप्सु त्रीण्यन्तः समुद्रे।

उतेव मे वरुणश्छन्त्सिर्वन्यत्रा त आहुः परमं जनित्रम्॥४॥

4. Three bonds, they say, thou hast in heaven that bind thee, three in the waters, three within the ocean.

To me thou seems Varuṇa, O Courser there where they say is thy sublimite birth place. *Ĵg. 1-163-4*

It has been expressed that *Ĵbhu*-cell has three bonds in heaven, it represents ozone layer in the atmosphere, due to the presence of Ozone layer in the upper atmosphere life is present on the earth, because the O₃ Ozone layer absorbs the high energetic ultraviolet

rays, and only visible light come on the earth's surface, three bonds in the water, it means two hydrogen and a single atom of oxygen, they constitute the water molecule, the water is a life resource for the *ġbhu*-cell, three bonds within the ocean, it means in the ocean of biological world of life, the Trita triple bond of the nucleotide pair is main source of the development.

To me thou seems *Varuḥa*, the *ġbhu* seems like *Varuḥa*, it indicates that the cellular mass came in to the existence due to gravity and aggregation of the materialistic substances as a sublimate unit, where the Courser- life energy has its birth place, due to the streaming of the protoplasm in the cell.

In this way in a symbolic fashion the generation of life energy in the cell has been expressed.

To day we know the fact that water is life resource, ozone layer protects the life on the earth, and DNA is responsible for biodiversity in the nature. The same has been indicated. Ozone layer

इ॒मा ते॑ वा॒जिन॑व॒मार्ज॑नानी॒मा श॒फानां॑ स॒नितु॑र्नि॒धाना॑।
अत्रा॑ ते भ॒द्रा र॑श॒ना अ॑पश्य॒मृत॑स्य॒ या अ॑भि॒रक्ष॑न्ति गो॒पाः ॥५॥

5. Here Courser, are the places where they groomed thee, here are the traces of thy hoofs as winner.

Here I have seen the auspicious reins that guide thee, which those who guard the holy law keep safely. *ġg. 1-163-5*

In an anthropomorphic manner, it has been expressed that here in the sea of life, the *ġbhus* have the places, the a-biotic substances have groomed the *ġbhus*-cells in the physical form, these are the traces of thy hoofs, it means, the physical biological world has its existence due to the active part of life energy in the evolution. The organic matter in the soil has been expressed as the traces of the dead-body, as winner during the life.

The auspicious reins-represents the oxidation and reduction reactions, they regulate the development of the physical cellular body, under the guidance of DNA, the DNA as genetic material guide the *ġbhus* with hereditary characters in life on the path of their journey in the life with metabolism, and the same two

oxidation and reduction reactions, decompose the body after death, they guard the holy law safely. They maintain the equilibrium in the nature through synthesis and degradation through oxidation and reduction, hence it has been said that they guard holy law. The oxidation and Reduction reaction have been expressed as *the auspicious reins*

आत्मानं ते मर्नसारादजानामवो दिवा पतयन्तं पतङ्गम्।
शिरौ अपश्यं पथिभिः सुगेभिररेणुभिर्जेहमानं पतत्रि॥६॥

6. *Thyself from far I recognized in spirit, - a Bird that from below flew through the heaven.*

I saw thy head still soaring, striving upward by paths unsoiled by dust, pleasant to travel. ÿ g. 1-163-6

The consciousness - In a symbolic fashion, the nature and lustre of the life energy has been expressed, after the death, which move from the cell body, just like a bird fly from the earth to the heaven.

अत्रा ते रूपमुत्तममपश्यं जिगीषमाणमिष आ पदे गोः।
यदा ते मर्तो अनु भोगमानळादिद्गसिष्ठ ओषधीरजीगः॥७॥

7. *Here I beheld thy form, matchless in glory, eager to win thee food at the Cow's station.*

Whene'er a man brings thee to thine enjoyment; thou swallowest the plants most greedy eater. ÿ g. 1-163-7

The life energy is matchless in glory, which consume the food through the *ÿbhus*, which act as cow's station, due to the storage of the food material in the cell body-*ÿbhu* and its nourishing character. **The *ÿbhu*-cell has been termed as cow's station.** Whenever a men brings thee to thine enjoyment- it means the human body is a greedy consumer of the food, where the life energy is in its full function.

अनु त्वा रथो अनु मर्यो अर्वन्ननु गावोनु भगः कनीनाम्।
अनु ब्रातासस्तव सख्यमीयुनु देवा ममिरे वीर्य ते॥८॥

8. *After thee Courser, come the car, the bridegroom, the kine come after, and the charm of maidens.*

Full companies have followed for thy friendship: the pattern of thy vigour Gods have copied. ÿ g. 1-163-8

The stages of the cell development has been indicated, that after the Courser-life energy, *the ybhus*-cell came in to the existence as a moving car, the car is a metaphor for the moving cell body, it has been followed by the bridegroom, the bridegroom is metaphor for the chemical energy of the food, which provide metabolic energy for development of the cell body, the metabolic products have been termed as kine symbolically, which have synthesized the DNA, the charm of maiden is a metaphor for the pair of DNA strips. The living-beings enjoy the fruit of life through the DNA.

These components of the cell proliferate with the cell division. The proliferation has been expressed by *they have followed for thy friendship*. The cell division has been expressed by *the pattern of thy vigour Gods have copied*.

It has been expressed that the moving cell body came in to the existence with appearance of the life energy-consciousness. It has been followed by the chemical energy of food with respiration, and the genetic material. They follow the cell just like friends in the company of the life energy-consciousness. The *vigorous* cells are fit for the cell division under the natural forces- Gods.

हिरण्यशृङ्गोऽयो अस्य पादा मनोजवा अवरं इन्द्र आसीत्।

देवा इदस्य हविरहमायन्यो अर्वन्तं प्रथमो अघ्यतिष्ठत्॥९॥

9. *Horns made of gold hath he: his feet are iron, less fleet than he, though swift as thought is Indra.*

The Gods have come that they may taste the oblation of him who mounted, first of all the Courser. yg. 1-163-9

How the cell spread rapidly with the cell division? It has been expressed metaphorically, through the metaphor of horns.

The Horns is a metaphor for the two strips of the DNA, which divide rapidly, and synthesize the cell body, which is precious just like the gold for the life energy-Courser. The replication of DNA has been compared with the speed of thought in the brain. The DNA is immortal with replication, and spread in the nature rapidly. Through, the DNA, the cell move on the path of evolution with cell division, the path of evolution is hard to check, it has been indicated by, *his feet are iron* symbolically.

With cell division, the population of the cellular-organisms increases and the natural forces interacts with the cell body.

The gaseous inter-actions going on in the cell body has been indicated by saying that the natural forces are coming to taste the oblation of him, who has mounted it first in the cell body as courser.

It has been indicated symbolically that the electrically charged ions of the molecules are responsible for the synthesis of the physical cell body. They have mounted first the life energy-Courser in the cell body, through the movements of the charged particles in the closed system. Accordingly, the natural forces have found the place for interaction in the cell body.

ई॒र्मा॒न्ता॒सः॒ सिलि॒कम॒ध्यमा॒सः॒ सं शू॒रणा॒सो दि॒व्या॒सो अ॒त्याः ।
हं॒सा॒इव॒ श्रेणि॒शो य॒तन्ते॒ यदा॒क्षि॒षु दि॒व्यम॒ज्म॒श्वाः ॥१०॥

10. *Symmetrical in flank, with rounded haunches, mettled like heroes, the celestial Coursers.*

Put forth their strength, like swans in lengthened order, when they, the Steeds have reached the heavenly causeway. yg. 1-163-10

The nature and shape of the *ṛbhus* has been described as celestial Coursers as courageous heroes, they are symmetrical in shape, they take part in the creation sacrifice, just like hero of the creation sacrifice having strength like swan and reached to their natural ageing on the heavenly path.

The structure and nature of the cell body in the nature has been expressed, it has been indicated that the cells of cellular body are symmetrical in shape. They constitute the fleshy parts of body. The cells are just like celestial Courser. They are the heroes of the nature. They develop in nature rapidly, just like the speed of the swan in an orderly manner. *When they the Steed-life energy have reached the heavenly cause way.* It means when the life energy disappear, the cellular body under go ageing on their natural path.

तव॒ शरी॑रं॒ पत॒यि॒ष्ण्व॒र्वन्त॒व॒ चि॒त्तं॒ वा॒त॒इव॒ ध्र॒जो॒मान् ।
तव॒ श्रृ॒ङ्गा॒णि वि॒ष्टिता॒ पुरु॒त्रार॑ण्येषु॒ जर्भु॑राणा चरन्ति॥११॥

11. *A body formed for flight hast thou, O charger; swift as the wind in motion is thy spirit.*

Thy horns are spread abroad in all directions: they move with restless beat in wildernesses. ÿ g. 1-163-11

Charger - In a symbolic fashion, it has been expressed that the end of the life-cycle with ageing is not the end of life energy. The life energy fly from the body, and the cellular body has a charger in the form of chemical energy of food, which is swift in motion, just like the speed of the wind. The chemical energy, move forward with oxidation of the food, and remain unaffected in the nature, it has been indicated.

Accordingly, the DNA has spread in all the direction with new cell body in the nature. It has been expressed through the metaphor of horns that their movement is hard to check like hard horns, they are moving and working in the different forms in a restless manner in the wild and at other places. Symbolically the universal nature of DNA and the formation of the food chains and the food webs in the nature have been expressed.

उप प्रागाच्छसनं वाज्यवाँ देवद्रीचा मनसा दीध्यानः ।
अजः पुरो नीयते नाभिरस्यानु पश्चात्कवयो यन्ति रेभाः ॥१२॥

12. The strong Steed hath come forward to the slaughter, pondering with a mind directed God-ward.

The goat who is his kin is led before him: the sages and the singers follow after ÿ g. 1-163-12

It has been said that with ageing the strong steed- *ÿbhu* have come forward to the slaughter and going to merge with the natural forces. The ageing is the slaughter of the *ÿbhu-cell*,

It has been expressed that the life-energy, who is the part of the cell, it disappear first, and the decomposition of the cell organelles follow him just like sages and the singers.

उप प्रागात्पुमं यत्सद्यस्थमवाँ अच्छा पितरं मातरं च ।
अद्या देवाञ्छुष्टमो हि गम्या अथा शास्ते दाशुषे वार्याणि ॥१३॥

13. The Steed is come unto the noblest mansion is come unto his Father and his Mother.

This day shall he approach the Gods, most welcome: then he declares good gifts to him who offers. ÿ g. 1-163-13

It has been expressed that with end of the life, the dead cell body has come at rest, and decomposed into the nature. Accordingly, the

natural components of the cell body merged into the nature. It has been expressed metaphorically through the mother and father; they are the parent of the nature, heaven and earth. The decomposition of the cellular organic body is a gift to the nature and for the living-beings; they enrich the nature with the natural components.

11. Functions of the ÿ bhus--Cellular functions

Keeping in view the single unified force - fundamental energy as the creator, the building block of the creation is atom with generation of the magnetic energy in side the atom. The building block of the living-beings in the series are four bases of the DNA, the carbon skeleton of the living-beings is due to the conversion of red wave length of light into the chemical energy with synthesis of assimilated carbon of photosynthesis, the whole play of life on the earth is due to the chemical energy of photosynthesis in the background as source of vital energy. The cell body is the home and a source of all vital functions going on in the nature. It has been expressed by ÿ-*i Vamdeo* in perspective of origin and evolution of the creation with an emphasis on the relative importance of the

living-beings in the nature and nature of consciousness.

Introduction

The seer of book four *ṛ-i Vamdeo son of Gotam* has described the cell biology. He has first explained the origin and evolution of the creation in relation to the origin of life on the earth, symbolically. Gradually then he has gone in to the depth of the subject. He has explained beautifully, in his metaphoric language, about the life supporting events in the history of life on the earth, with exploring the function of *ṛbhus* in the nature.

The creation is a gradual process of evolution. He has expressed that in the beginning the *Agni* brought forth the omnipresent God devoted sage, as such the *Agni* bring with favour *Varuṣa* who loveth sacrifice. True to the law, the *Ṛditya*, who supported men, O *Agni* find thou grace for us with *Varuṣa*, with maruts who illuminate all.

The Creation

In the beginning of the first hymn of the fourth book of *ṛ gveda*, the picture of the creation has been projected.

Primary succession

The origin of the creation has been traced from fundamental energy as a single unified force. It has been indicated that the source of the creation is the fundamental particles. They have generated the solar system and the nature.

The *Varuṣa*, who loveth sacrifice. The formation of atom with interaction with other atoms, it has been indicated by saying true to the law. *The Ṛditya* indicate the sun in the solar system. *The Maruts* indicates the water clouds. The structure and major components of the creation have been expressed symbolically. Accordingly, with, reference to the life on the earth, in an integrated manner, the importance of electromagnetic bond energy, chemical energy, and life energy in the life has been indicated.

THEE Agni, have the Gods, over of one accord, sent hither down, a God, appointed messenger, yea, with their wisdom sent thee down.

The Immortal, O thou Holy One, mid mortal men, the God-

devoted God, the wise, have they brought forth, brought forth the omnipresent God devoted Sage. 4-1-1

The Agni, which has been invoked, is Fundamental energy. The creation is manifestation of a single energy, through energy transformation, and the same fundamental energy is generated in the womb as consciousness.

The natural forces have generated the consciousness in the living-beings. It has been expressed by immortal among the mortal man, and God among God. The living-beings are, just like God devoted sage, they have brought forth the omnipresent-fundamental energy as immortal among the mortals.

As such O Agni, bring with favour to the Gods, thy Brother Varuṇa, who loveth sacrifice,

True to the Law, the Ȑditya, who supporteth men, the king, and supporter of mankind. 4-1-2

The building block of the creation is atom, and every thing, which is going on in the creation is due to sun. Hence the fundamental energy has been invoked to bring forward, the natural forces, and the Varuṇa, is just like brother of the fundamental energy, who loveth sacrifice. It indicates the formation of atom, and its interaction with other atoms. The sun support the creation, under the cosmic principles, it has been indicated by saying true to the law. The Ȑditya indicate the sun.

Do thou, a Friend, turn hither him who is our Friend, swift as a wheel, like two carpole in rapid course.

O Agni, find thou grace for us with Varuṇa, with Maruts who illuminate all. 4-1-3

The Agni- fundamental energy has been invoked to grant the oxidation and reduction reactions, they maintain equilibrium in the nature and the living-beings, through synthesis and degradation, as a friend in the nature, they work in a cyclic manner, and the oxidation and reduction reactions are swift, as a wheel, and are just like two carpole in their course. These reactions are reversible reactions, and operate in the cyclic manner, along with the function of **electromagnetic bond energy**.

Varuṇa, with Maruts- the Varuṇa-atom constitute the building block of the creation, the Maruts- water clouds are life resource on the earth, hence, oxidation and reduction reaction, with Varuṇa atom, and Maruts water have been invoked.

Do thou, who knowest Varuṇa O Agni, put far away from us the God's displeasure.

Best Sacrificer, brightest One refulgent remove thou far from us all those who hate us. ṽ g. 4-1-4

It has been indicated that for life on the earth, the best sacrificer is *Varuṇa-atom*, the displeasure of the natural forces, may disintegrate the body.

Be thou, O Agni, nearest us with succour, our closest Friend while now this Morn is breaking.

Reconcile to us Varuṇa, be bounteous: enjoy the gracious juice; be swift to hear us. ṽ g. 4-1-5

It has been indicated that closest friend with birth of life on the earth, is **Agni- as life energy**, the birth has been indicated by *breaking of morn* symbolically. The cellular body consist of atoms, hence, the *Varuṇa*-has been invoked for development of the cellular body with bounteousness.

Excellent is the glance, of brightest splendour, which the auspicious God bestows on mortals,-

The God's glance, longed-for even as the butter, pure heated, of the cow, the milch-cow's bounty. ṽ g. 4-1-6

It has been indicated that the *Varuṇa* - atom is the building block of the creation, which has been bestowed by the Gods-the elementary charged particles. Even its splendour can be seen in the butter, which consists of atoms, which has been synthesized by the milk cow. The milk cow is metaphor for the plants and food, which is **the source of life with nutrition, and chemical energy**. It has been indicated symbolically.

Three are those births, the true, the most exalted eagerly longed- for, of the God, of Agni.

He came invested in the boundless region, pure, radiant, friendly, mightily res-plendent. ṽ g. 4-1-7

Three are those births- The cosmic energy with its three birth places came in to the existence. The birth places of *Agni*-energy are sun in the sky, ionosphere in the heaven, and earth-the place of terrestrial fire-chemical energy. Accordingly, the fundamental energy appears in the boundless region of the solar system. It has been indicated.

With three births, how it (*Agni*) appears, in the boundless region, it indicates the beginning of the creation and life on the earth, with generation of electromagnetic bond energy, chemical energy, and life-energy.

This envoy joyeth in all seats of worship, borne on his golden car, sweet-tongued Invoker:

Lovely to look on, with red steeds, effulgent, like a feast rich in food, joyous for ever. ý g. 4-1-8

The three Immortal, *Agni*-energy, born on the golden-car- the cell-body, and enjoy all the functions in the living-beings. They are lovely to look in the cell body only, with red steeds, who supply food for their joy for ever, the cell body consume the food, through metabolism, it has been indicated by tongue, and spread it further, just like a invoker.

It has been indicated that these three energy, enjoy the life in the cellular body, with supply of food material, synthesized by the photosynthesis. They appear with birth, and disappear with end of life cycle. They are Immortal, it has been indicated by - they *joyous for ever*.

Allied by worship, let him give man knowledge: by an extended cord they lead him on ward.

He stays, effectual in this mortal's dwelling, and the God wins the share in his possession. ý g. 4-1-9

For the knowledge of the human-beings, it has been indicated that the three Immortal energy, although disappear with the end of life cycle, from the cell body, which is the mortal place of dwelling of life of these energies, where, the natural forces have there share in the life of the cell body. They carry him on the process of evolution, onward with an extended cord. The continuity of life principle has been expressed symbolically.

Let Agni- for he knows the way--conduct us to all that he enjoys of God-sent riches,

What all the Immortal have prepared with wisdom, Dyaus, Sire, Begetter, raining down true blessings. ĳ g. 4-1-10

It has been indicated that the whole play of the creation and life on the earth, is regulated by the fundamental energy for us, he enjoy the resources of the natural forces.

The Immortal energies- electromagnetic bond energy, chemical energy of photosynthesis, and life-energy, with their functions in the cell-body, have prepared *Dyaus*-sky, Sire- heaven and earth as parents, and they are begetter of rains on the earth with blessings for life. It has been indicated by-

What all the Immortal have prepared with wisdom, Dyaus, Sire, Begetter, raining down true blessings. Accordingly the sky and earth with rains came in to the existence from immortal elementary charged particles. How the immortal fundamental energy has generated the cosmic principles of the creation, it has been expressed symbolically.

Birth of Solar System

In house he rose into existence at great heaven's base, and in this regions bosom; Footless and headless, both his ends concealing in his Bull's lair drawing him self together. ĳ g. 4-1-11

Origin of the nebula in the primitive condition of cosmos has been indicated. The Bull's lair is a symbolic expression for fundamental energy.

The fundamental energy rose in to the existence with generation of elementary charged particles, with infinite boundary from the central-point, the base is the central point of the solar system enclosing a vast infinite area in the cosmos. The infinite area has been indicated by *Footless and headless*. It has been expressed, that the fundamental energy, from which the visible world came into the existence, is only one-fourth part. The rest is in the infinite cosmos.

It has been expressed that the solar system, which is in our vicinity of sight, its both end are enclosed by the fundamental

energy, it is present within it, and as well as it has enclosed it from all the side. *Both his ends concealing in his Bull's lair drawing him self together*, it has been expressed that the fundamental energy is integral part of the functions going in the nature, it has been indicated by *drawing him self together*.

Wonderful first he rose aloft, defiant, in his bull's layer, the home of holy Order, Longed for, young, beautiful, and far-resplendent; and seven dear friends sprang up unto the Mighty. ý g. 4-1-12

It has been indicated that the nebula was shining, young, beautiful, when it rose, it was concealed in the bull's layer-fundamental energy '*the place of holy order*'. The generation of white visible light has been indicated symbolically as seven dear friends.

Here did our human fathers take their places, fain to fulfil the sacred Law of worship. ý g. 4-1-13

Splendid were they when they had rent the mountains: others, around, shall tell forth this their exploit. ý g. 4-1-14

It has been indicated that from the nebula with *Big-bang*, the solar system came into the existence, and accordingly our ancient human fathers took their places under the cosmic principles.

They sang their song, prepared to free the cattle; they found the light; with holy hymns they worshiped.

The movements of the elementary charged particles has been indicated by '*They sang their song*', Accordingly, with their movements, a pressure with vacuum has been generated in the nebula, and the clouds of the charged particles with explosion have been distributed in the solar system in the shape of planets. It has been indicated by *and prepared to free the cattles*, the cattle is the symbolic expression for the building block material of the planets. The presence of the sun in the solar system has been indicated by saying that *they found the light; with holy hymns they worshiped*.

In this way formation of the solar system has been indicated.

Eager with thought intent upon the booty, the men with their celestial speech threw open.

The solid mountains firm compact, enclosing, confining Cows, the stable full of cattle. ÿ g. 4-1-15

It has been indicated symbolically that the source of the charged particles nebula, was having clouds of charged particles, they look, just like mountains, enclosing the charged particles, with building block material, it has been indicated *confining Cows, the stable full of cattle.*¹⁵

They have the potentiality to feed the creation, just like cow, through their magnetic energy and infrared rays. Accordingly it has given the way for the origin of the human-beings, with a potentiality to synthesize the carbon skeleton, just like booty.

The milk Cow's earliest name they comprehended: they found the mother's thrice seven noblest titles.

This, the bands knew, and sent forth acclamation: with the Bull's Sheen Red One was apparent. ÿ g. 4-1-16

It has been indicated that in the earliest time of the creation, the mother-nature, came into the existence with thrice seven fuels. The rotation of the sun at its axis has generated the year with twelve months, six seasons, and three centres of reaction sky, heaven and earth. They have given the way for evolution of the creation, with conversion of Red light energy into chemical energy. It has been indicated by: *with the Bull's Sheen Red One was apparent* ÿ g. 4-1-16, they regulate the system, just like 21 fuels.

The turbid darkness fled, the heaven was splendid; uprose the bright beam of celestial Morning.

SÊrya ascended to the wide expanse, beholding deeds of men both good and evil. ÿ g. 4-1-17

Accordingly, with time the turbid darkness fled, through the turbid darkness, the magnetosphere, around the earth and ozone layer in the upper atmosphere has been indicated, they have given the way for the visible sun-light on the earth. The bright beam of sun-light rose with origin of the solar system. It has been indicated by *celestial Morning*, symbolically. Where, sun is the soul and eye of the creation, which behold the deeds of men both good and evil.

Then, afterwards they looked around, awakened, when first

they held that Heaven allotted treasure.

*Now all the Gods abide in all their dwellings, Varuṇa, Mitra,
be the prayer effective. ĩ g. 4-1-18*

It has been indicated in the last three hymns, that when the awakened intellectuals, looked around with deep observation, they have observed the heaven allotted treasure, where all the natural forces are working in an integrated manner. The *Varuṇa- atom and visible light- Mitra* are shaper of the creation, they are worth to pray.

I will call hither brightly-beaming Agni, the Herald, all supporting, best at worship.

He hath disclosed, like the milch cow's pure udder, the Soma's juice when poured from beakers. ĩ g. 4-1-19

It has been indicated that next in the series is brightly -beaming Agni, who has opened the door of life consciousness, who support all, is best at worship.

The plants, support the whole system through photosynthesis, they feed the creation, just like cow's pure udder, it is just like that prepared *Soma* juice poured from beakers. Hence, the plants are best for worship.

The freest God of all who should be worshipped, the guest who is received in all men's houses,

Agni who hath secured the God's high favour,- may he be gracious, to us JĒtavedas. ĩ g. 4-1-20

The next in the series, the God of all who should be worshipped is the guest in the all human body- consciousness, accordingly the terrestrial fire *JĒtavedas* may be gracious to us.

Hymn II Chemical energy

In this hymn, the role of chemical energy has been expressed. The immortal chemical energy, resides in the mortal living-beings, it has been indicated by Immortal among mortal's houses, a God amongst the God. The chemical energy is generated by the natural factors, and in the naturally synthesized cell body. It increases in the cellular bodies, with food. It is the source of vitality, in plants and animals, equally, which are in existence or to be born in future.

The plants and animals have been expressed as both the races.

The Faithful One, Immortal among mortal's houses a God among the Gods, appointed envoy,

Priest, best at worship, must shine forth in glory: Agni shall be raised high with man's oblation. y g. 4-2-1

The chemical energy of food has been invoked, the cell body is mortal's house, and it resides in the cell body, like an Immortal, with metabolism, it increases in the body. It has been indicated.

Photosynthesis

Born for us here this day, O son of Vigour, between both races of born beings, Agni,

Thou farest as an envoy, having harnessed, Sublime One ! thy strong-muscled radiant stallions. y g. 4-2-2

The chemical energy has been invoked to born, which is the source of vitality for, both the races- plants and animals.

I laud the ruddy steeds who pour down blessings, dropping oil, fleetest through the thought of Order,

Yoking red horses, to and fro thou goest between you Deities and mortal races. y g. 4-2-3

The chemical energy has been invoked as Ruddy steeds, it moves in the living-beings, through the food chains, it has been indicated that the Red wavelength of light is converted into the chemical energy, through photosynthesis, the food synthesized in the cell body, has been expressed by *dropping oil, fleetest through the thought of Order*, the chemical energy, with food, moves to and fro, among the mortal living-beings. It has been expressed by *Yoking red horses*.

Good guidance hast thou for the priest, O Agni, who, Youngest God! with out-poured Soma serves thee.

Ruler of the men, joyous God, bring treasure splendid and plentiful to aid the toiler. y g. 4-2-13

It has been indicated that young cells, with life, serve the purpose of food synthesis.

Now all that we, thy faithful servants, Agni, have done with feet, with hands and with our bodies,

The wise, with toil, the holy rite have guided, as those who frame a car with manual cunning. ṽ g. 4-2-14

It has been indicated that the cell body has synthesized the chlorophyll, with their skill and framed a car for the photosynthesis, it has been indicated symbolically.

Light reaction

May we seven sages first in rank, regender, from Dawn the Mother, men to be ordainers.

May we, Ṟngirases, be sons of Heaven, and radiant, burst the wealth containing mountain. ṽ g. 4-2- 15

It has been indicated that for the photosynthesis, the seven sun-rays of visible light are ranked according to their wavelength, with sun-rise is the mother source and the cell body arrange it in order. The Ṟngirases-water clouds are the source of water for it.

As in the days of old our ancient fathers, speeding the work of holy worship, Agni Sought pure light and devotion, singing praises, ;they cleft the ground and made red Dawns apparent ṽ g.4-2-16

It has been indicated, that with holy work of our ancient natural forces and factors, they have remove the obstacle, and the visible light appear on the earth, accordingly the red wavelength of light became apparent.

Gods, doing holy acts, devout, resplendent, smelting like ore their human generations,

Enkindling Agni and exalting Indra they came encompassing the stall of cattle. ṽ g. 4-2-17

It has been indicated that the natural factors have purified the Red wavelength of light, just like ore, and enkindled the Agni, with exalting Indra. The exalting Indra, indicate the excitation of the electron during **photophosphorylation**. Accordingly, the chemical energy came encompassing the biological world.

Strong One! he marked them- and the Gods before them - like herds of cattle in a foodful pasture.

There they moaned forth their strong desire for mortals, to aid the True, the nearest One, the living. ṽ g. 4-2- 18

It has been indicated that the chemical energy of food resides in

the cell body, just like herds of cattle in the foodful pasture, the strong One-metabolic energy, consume the nearest food for metabolism, through oxidation, with an aim to provide vitality to the cell body, and accordingly the chemical energy, with action, move forward, just like living-creatures move. It has been expressed symbolically.

We have worked for thee, we have laboured nobly-- bright Dawns have shed their light upon our worship--

Adding a beauty to the perfect Agni, and the God's beauteous eye that shines for ever. ĳ g. 4-2-19

It has been expressed, by the cell body in an anthropomorphic manner symbolically, that we have worked with labour, for conversion of the light energy into the chemical energy, the rising sun has shed the light for it, and the chemical energy is just like beautiful eye of the nature, which shines for ever.

Hymn III **Rudra - Reduction**

In the nature, the oxidation and reduction reaction operate simultaneously, when these reactions are going on the living-beings, they help in vitality and development of the body, the same oxidation and reduction reaction, disintegrate the cellular body after death. It has been described in this hymn.

The *Rudra*- lord of worship, the *Rudra* has been expressed as the priest of both worlds. It indicates that when the **Rudra-oxidation and reduction** reactions are operating in the living-beings, it gives development with vitality, with ageing or death, the same, reactions destroy the body. Hence *Rudra* has been expressed as the priest and lord of both worlds (life and death).

Win to assist you, Rudra, Lord of worship, Priest of both worlds, effectual Sacrificer,

Agni, invested with his golden colours, before the thunder strike and lay you senseless. ĳ g. 4-3-1

This shrine have we made ready for thy coming, as the fond dame attires her for her husband,

Performer of good work, sits down before us, invested while these flames incline to meet thee. ÿ g. 4-3-2

A song of the praise sing to the God Immortal, whom the stone, presser of the sweet juice, worships. ÿ g.4-3-3

It has been indicated, that the cellular body has been prepared, just like shrine for *Rudra*, just like a lady prepare herself for her husband, in the same fashion, we have prepared our body for lord *Rudra*.

Reduction reaction

I crave the cow's true gift arranged by order: through raw the, she hath the sweet ripe juice, O Agni.

Though she is black of hue with milk she teemeth, nutritious, brightly shining, and all-sustaining. ÿ g.4-3-9

In the cell body, the reduction reaction is related with the synthesis. It has been indicated by *cow's true gift*. The synthesis of the glucose by the plants is gift of mother-nature, during the photosynthesis. It has been indicated.

The glucose has been expressed *through raw*, through the respiration, it gives the vital energy, and the intermediary products of the respiratory cycle, help in development of the body, with synthesis of fats and proteins. It has been expressed by, *she hath the sweet ripe juice*. The glucose is a carbon compound, its nature has been expressed symbolically by *she is black of hue*. The nature of the fats and proteins has been indicated by *nutritious, brightly shining, and all-sustaining*.

Agni the Bull, the manly, hath been sprinkled with oil upon his back, by Law eternal.

He who gives vital power goes on unswerving, P, -ni the Bull - white light hath milked the pure white udder. ÿ g. 4-3-10

It has been indicated that under the cosmic principles, the Bull-fundamental energy has generated the chemical energy in the cell body, it has synthesized the glucose. The synthesis of the glucose has been indicated by *oil upon his back symbolically*. It has been indicated that carbon assimilation has given it a vital power, which move *unswerving in the nature*. The *P, -ni-white* visible light has

generated the glucose, through photosynthesis, just like *pure white udder*, the white colour of the glucose has been expressed metaphorically through pure white udder.

Photolysis

With reduction of carbon di oxide, the glucose molecule is synthesized in the cell body. For the reduction reaction hydrogen is required. It has been indicated.

By Law the ऋgirases cleft the rock asunder, and sang their hymns together with the cattle.

Bringing great bliss the men encompassed Morning: light was apparent at the birth of Agni. ऋg.4-3-11

The ऋgirases-water clouds brought the water, the water undergo photolysis. It has been indicated symbolically by *and sang their hymns together with the cattle*. The photolysis of water has brought the great bliss for the living-beings, with evolution of life. It has been indicated by the men encompassed Morning. The Morning is symbolic expression for origin of life, and with this, just like light apparent with birth of *Agni*, in the same fashion, the life has evolved, with synthesis of assimilated carbon, and the man-living-beings encompassed with life energy.

By Law the immortal Goddesses the waters, with meath -rich waves, O Agni and uninjured. ऋg.4-3-12

It has been expressed that the under cosmic principles, the immortal natural forces, the waters, with rich waves of food (meath) energy has established in the nature, which is moving uninjured, just like a strong courser, lauded in his running, sped to flow onward swiftly and forever. In the same way, the chemical energy is moving rapidly, uninjured, it means without harm or degradation, as an Immortal it is moving for ever. ऋg.4-3-12

In this way the *Agni* has been invoked for safety and protection, during the course of life.

Hymn IV Word Power and Chemical energy

In this hymn, the journey of the chemical energy has been

explored symbolically in anthropomorphic manner.

Put forth like a wide- spreading net thy vigour; go like a mighty king with his attendants.

Thou following thy swift net, shootest arrows: transfix the fiends with darts that burn most fiercely. ÿ g. 4-4-1

Forth go in rapid flight thy whirling weapons: follow them closely, glowing in thy fury.

Spread with thy tongue the winged flames, O Agni; unfettered, cast thy firebrands all around thee. ÿ g. 4-4-2

It has been expressed that with its vitality and vigour, the chemical energy has spread, its network, the components of the nature are just like her attendants, she is moving just like king, with its whirling weapons it burn the solid components, it consumed them with oxidation, the metabolism, is just like his tongue with winged flames. In this way the food chains and food webs, with movement of the chemical energy in the nature, has been indicated.

Here of free choice let each one serve these richly, resplendent day by day at eve and morning.

So may we honour thee, content and joyous, passing beyond the glories of the people. ÿ g. 4-4-9

It has been indicated that the living-beings, with their functions, enrich the chemical energy day by day, with every morning and evening, round the clock. Even after death, they enrich the nature with organic-matter. it has been expressed by *passing beyond the glories of the people*.

Whoso with good steeds and fine gold, O Agni, comes nigh thee on a car laden with treasure,

His Friend art thou, yea, thou art his Protector whose joy is to entertain thee duly. ÿ g. 4-4-10

The living cellular body has been expressed as car laden with treasure, and good steeds, his body is just like gold, he is going near to the chemical energy, with ageing. The chemical energy is protector and friend of the living-beings, his joy in the life is to entertain the chemical energy. It has been indicated.

Through words and kinship I destroy the mighty: this power I have from Gotam my father,

Mark thou this speech of ours, O thou Most Youthful, Friend of the House, exceeding wise, Invoker. ĳ g. 4-4-11

It has been indicated that the network of the chemical energy, is mighty in all respect, the fossil places of the chemical energy, are just like forts, they can be broken, and energy can be extracted with power of sound energy.

It has been expressed symbolically, *through words and kinship I destroy the mighty:*

Hymn V

Vai,,vÈnar energy- The source of fossil fuel

How shall we give with one accord oblation to Agni, to Vai,,vÈnar the Bounteous?

Great light, with full high growth hath he uplifted, and as a pillar bears the roof, sustain it. ĳ g. 4-5-1

It has been expressed that the *Vai,,vÈnar*-energy, is just like the pillar of the creation, which sustain the biological world.

Reproach not him who, God and self reliant, vouchsafed this bounty unto me a mortal,--

Deathless discerner, wise to me the simple, Vai,,vÈnar most manly, youthful Agni. ĳ g. 4-5-2

It has been indicated that to a mortal, the *Vai,,vÈnar*-energy is bountiful and youthful gift of nature.

Sharp pointed, powerful, strong, of boundless vigour, Agni who knows the lofty hymn, kept secret.

As the lost milch-cow's track, the doubly Mighty, -- he hath declared to me this hidden knowledge. ĳ g. 4-5-3

It has been expressed, that the chemical energy, move in boundless region with its vigour, with death of the living-being, chemical energy, lost the path of food-chain, with this, it become double Mighty, it is a hidden knowledge of *Vai,,vÈnar*-chemical energy.

May he with sharpened teeth, the Bounteous Giver, Agni, consume, with flame most fiercely glowing, Those who regard not Varuṇa's commandments and the dear steadfast laws of sapient Mitra ṽ g. 4-5-4

Those, who do not follow the *Mitra* and *Varuṇa's* commandments, It has been indicated that *Varuṇa*-atom is the building block of the cellular body and *Mitra*- visible-light is the source of creation, those, who do not follow the principles of life, the flames of *Agni* consume them most fiercely. It has been indicated.

Like youthful women without brothers, straying, like dames who hate their lords, of evil conduct,

They who are full of sin, untrue, unfaithful, they have engendered this abysmal station. ṽ g.4-5-5

It has been indicated, that those, who do not follow the principles of life and ethics, they have polluted the abysmal station of life on the earth, just like youthful women without brothers.

To me weak innocent, thou, luminous Agni, hath boldly given as 'twere a heavy burthen,

This P,—ḥa hymn, profound and strong and mighty, of seven elements, and with offered dainties. ṽ g. 4-5-6

It has been expressed symbolically, that the *Vai, vḥnar*-energy has offered many delicate, delicious gifts on the earth. The profound, strong and mighty of the seven-rays, is in the background of the fossil fuel. It has been indicated by *P,—ḥa hymn*, symbolically.

So may our song that purifies, through wisdom reach in a moments him the Universal,

Established on the height, on earth's best station, above the beauteous grassy skin of P,—ni. ṽ g.4-5-7

It has been expressed that the sound our song hymns, spread in the universe in a moment. The importance of sound-energy has been indicated.

Of this my speech what shall I utter further? They indicate the milk stored up in secret,

When they have thrown as 'twere the cow's' stall open. The bird protects earth's best and well loved-stations. ÿ g. 4-5-8

The best loved-station on the earth are forests, they are protected by birds. They are the future source of fossil fuels.

This is the Great Ones' mighty apparition which from of old the radiant Cow hath followed.

This, shining brightly in the place of Order, swift, hasting on in secret, she discovered. ÿ g. 4-5- 9

It has been expressed that it is the tradition from ancient time, that forests are converted into fossil-fuel, which is shining in the place of order in secret, the fossil fuels has followed the path. The fossil fuels are the source of energy. It has been indicated by radiant cow, symbolically.

He then who shone together with his Parents remembered P, – ni's fair and secret treasure.

The cow's most lofty station, the Bull's tongue, of the flame bent forward, tested. ÿ g. 4-5-10

It has been expressed, that he who knows, the secret of fossil fuel, he knows the secret station of the visible light. It means, he has the knowledge of the photosynthesis. The energy of fossil fuel is just like Bull's tongue, to test the intensity of the flame.

With reverence I declare the Law, O Agni; what is comes by thine order, JÈvedas.

Of this, whate'er it be, thou art the Sovran, yea, all the wealth that is in earth or heaven. ÿ g. 4-5-11

It has been expressed, that under cosmic principles, whatever, we receive, is due to the terrestrial fire, he is Sovran lord of the life on the earth, the natural wealth, which is present in the heaven or in earth, is due the terrestrial energy.

What is our wealth there from, and what our treasure? Tell us O, JÈvedas, for thou knowest.

What is our best course in this secret passage: we, unapproached, have reached a place far distant. ÿ g. 4-5-12

The speaker of the speech is Vamdeo composer of the hymn, he is asking the question symbolically to the terrestrial fire, in actual

sense he is talking in the council of intellectuals.

It has been expressed that through extracting the energy sources of the nature, we have reached at a place far distant, we should know, what is our wealth? We are passing on the secret passage on the earth, with life? Only the terrestrial fire knows better.

What is the limit, what the rules, the guerdon? Like fleet-foot courser's speed we to the contest.

When will the Goddesses, the Immortal's Spouses, the Dawns, spread over us the Sun-Gods splendour? ÿ g. 4-5-13

It has been expressed that in the blind competition for extracting the resources, what is the limit, what the rules, what is the reward, we are getting? We are only competing with each other, when we will be awakened to realize our duties? It has been expressed by when the Dawns, will spread over us, the sun God's splendour?

Un satisfied, with speech devoid of vigour, scanty and frivolous and inconclusive,

Where-fore do they address thee here, O Agni? Let these who have no weapons suffer sorrow. ÿ g. 4-5-14

The speaker was unsatisfied with the attitude of the councillors, they could not draw any conclusion, and all were divided on the issue of peace on the earth. The threat of nuclear war has been reflected in his speech. Accordingly, he has addressed Agni? *Let these who have no weapons suffer sorrow.* It indicates that some countries may have developed safety device from nuclear threat, those who have no weapons of safety, they are likely to suffer.

The majesty of him the Good, the Mighty, aflame, hath shone for glory in the dwelling,

He, clothed in light, hath shone most fair to look on, wealthy in boons, as a home shines with riches. ÿ g. 4-5- 15

It has been indicated that the majority in the council were developed countries, and strong, they were suffering from ego, for their glory. They were clothed in light, wealthy in boons, just like a home shines with riches.

It seems that nuclear war was unavoidable, accordingly, in the

next hymn, How after catastrophe, again the development restart has been indicated, through the secondary succession.

Hymn VI- Secondary succession

The secondary succession is a process, it start after natural catastrophe, it is a rapid process of evolution in comparison to primary succession. The raw material for development and evolution is already available in the nature.

Priest of our rite, stand up erect, O Agni, in the God's service best of sacrificers.

For over every thought thou art the Ruler: thou furtherest e'en the wisdom of the pious. yg. 4-6-1

Agni- fundamental energy is just like priest, in the creation sacrifice, he has been invoked to active in the service of charged particles - God's, as a sacrificer. It has been expressed that for every thought, action, or wisdom of pious, he is the ruler.

He was set down mid men as Priest unerring, Agni, wise welcome in our holy synods.

Like Savitar he hath lifted up his splendour, and like a builder raised his smoke to heaven. yg. 4-6-2

Agni- fundamental energy has been set in the middle of living-beings, just like Priest, without any err, she has been invoked to come the synods of natural forces, just like savitar has lifted up his splendour with catastrophe, just like a builder raised his smoke to heaven, and light cut off short while, in the same fashion, with catastrophe the splendour of sun-light become gloomy.

The glowing ladle, filled with oil, is lifted; choosing God's service to the right he circles.

Eager he rises, like new wrought pillar which, firmly set and fixed, anoints the victims. yg. 4-6-3

It has been expressed that with time again the glowing ladle is ready to accept, choosing the God's services to the right he circles. It indicates that the cell body is ready, with the help natural forces, and protoplasm is streaming in circles, so that life energy, may generate.

The cell body is eager to rise, like the new wrought pillar, which can establish the biological world.

When sacred grass is strewn and Agni kindled, the Adhvaryu rises to his task rejoicing.

Agni the Priest, like one who tends the cattle, goes three times round, from of old he wills it. y g. 4-6-4

It has been indicated by the sacred grass, that with photosynthesis, the chemical energy kindled, Adhvaryu- the cellular components, started their work just like Adhvaryu sings the song, Accordingly, the process of evolution set in motion, with life cycles of the living-beings through birth, life and death, it has indicated by like one who tends the cattle three times round, with regeneration from old.

Agni him self the Priest, with measured motion, goes round, with sweet speech, cheerful, true to Order.

His fulgent flames run forth like vigorous horses; all creatures are affrighted when he blazes. y g. 4-6-5

The Agni- fundamental energy is him self is Priest, which goes round, with motion, under cosmic principles. His flames run forth like vigorous horses, and accordingly, it has speed up the process of evolution

Beautiful and auspicious in thine aspects, O lovely Agni, terrible when spreading,

Thy splendours are not covered by the darkness: detraction leaves no stain upon thy body. y g. 4-6-6

It has been expressed, that with this the lovely, auspicious chemical energy, spread terribly, with photosynthesis, path of visible light was open, his splendours were not covered by the darkness.

Naught hindered his production, Bounteous Giver: his Mother and his Sire were free to send him.

Then as friend benevolent, refulgent, Agni shone forth in human habitations y g.4-6-7

The earth and heaven, were helping him just like Mother and his Sire, Accordingly the Agni- fundamental energy appeared in the

form of human habitations, with time. It has been indicated.

He, Agni, whom the twice five sisters, dwelling together, in the homes of the men engendered,

Bright like a spear's tooth, wakened in the morning, with powerful mouth and like an axe well-sharpened ÿ g. 4-6-.8

It has been indicated symbolically, that in the living-beings, genetic material, speed-up the process through the sharp functions of DNA, which undergo duplication, with the help of twice five sisters- the ten bond energy, in between four nucleotide pairs of DNA, it has been indicated by twice five sisters, symbolically.

These thy Bay Coursers, Agni, dropping fames, ruddy vigorous, speeding straightly forward,

And red steeds, wonderful of mighty muscle, are to this service of the Gods invited ÿ g. 4-6-9

It has been indicated that with time the environmental conditions has given the way for evolution, the Bay coursers-DNA, spread, with help of chemical energy, where red wave length of light, are in the service of natural factors, just like steeds.

These brightly-shining flames of thine, O Agni, that move for ever restless, all subduing,

Like falcons hasting eagerly to the query, roar loudly like the army of the Maruts. ÿ g. 4-6-10

It has been expressed that the brightly shining flames of the chemical energy, move restless, just like falcon roar loudly to see the water clouds.

To thee O flaming God, hath prayer been offered. Let the priest laud thee: give to him who worships.

Men have established Agni as Invoker, fain to adore the glory of the living Agni. ÿ g. 4-6-11

Agni has been invoked, just like invoker, for prosperity and glory.

Hymn VII

Whom ᳚pnavan and Bh, gus caused to shine bright coloured in the wood, spreading it from home to home ÿ g. 4-7-1

It has been indicated that the red wavelength of light - was

accepted for the **Photosynthesis**, the *Jpnavan-water and Bh, gu-chlorophyll* have initiate the process to spread it in the plants.

Vivasvans envoy living men have taken their ensign, swift-genetic material DNA ÿ g. 4-7-4

The synthesis of genetic material DNA- *Vivasvan* has given the way for the organic evolution.

That as food spreads forth in this earthly udder, Gods may rejoice them in the home of order

Agni hath looked benevolently-minded on the wealth -giving the spring of radiant Mornings. ÿ g.4-7-7

It has been expressed that as the food chains in the nature spread the food in the nature, and the natural forces enjoy them in the cell body, in the same fashion the chemical energy of photosynthesis has given the radiant spring of morning for evolution of the living-beings. Accordingly, the food has spread on the earth in the form of food chains and food webs, where Gods-natural forces enrich the nature with their functions.

Bird of each rite, skilled in an envoy's duties, knowing Both worlds and which lies between them.

Thou goest from of old a willing Herald, knowing full well heaven's innermost recesses ÿ g.4-7- 8

Bright God, thy path is black: light is before thee: thy moving splendour is the chief of wonders.

When she, yet unimpregnate, hath conceived thee, even when newly born thou art an envoy. ÿ g.4-7-9

Yet newly born, his vigour is apparent when the wind blows upon his fiery splendour.

His sharpened tongue he layeth on the brushwood, and with his teeth e'en solid food consumeth. ÿ g.4-7 -10

When he hath borne off food with swift flame swiftly, strong Agni makes himself a speedy envoy.

Follows the rustling of the wind, consuming, and courser-like, speeds, drives the swift horse onward. ÿ g.4-7 -11

The journey of the solar winds from sun to the earth has been expressed. The speed of the solar wind is wonderful, his flames are

sharp, they can consume all the things even the solid foods, and move forward.

The praise of Agni

In succeeding hymns from VIII to XII the Agni energy has been praised for its holy work on the earth. It has been indicated that Agni shines brightly by neighbourhood of sun, splendid to see, it shows even at night time, and food is fair to look on in thy beauty. The poetic wisdom, thoughts, and the hero, who wins the booty, all are due to the Immortal Agni, which bring prosperity and wealth at morning and evening.

Agni hath looked, benevolently-minded, on the wealth-giving spring of radiant Morning.

Come, A, vins to the dwelling of the pious; SÊÿË God is rising with his splendour. ÿ g 4-13-1

The sun is the source of solar wind, which is the first birth of *Agni*, then during its journey from sun to earth, it is trapped by the earth's magnetosphere, the entry of the solar-rays into the earth's atmosphere has been termed as second birth of *Agni*, it has been expressed by *the spring of radiant Morning* symbolically. The A, vins-nucleotide pairs of the DNA have been invoked, so as to indicate the source of origin of the genetic material.

Savitar, God hath spread on high his lustre, waving his flag (scattering the dew-drapsa) like a spoil-seeking hero.

Their established way go Varuṣa, and Mitra, what time they make the sun ascent the heaven. ÿ g 4-13-2

Him whom they made to drive away the darkness, Lords of sure mansions, constants to their object.

Him who beholds the universe, the Sun-God, seven strong and youthful Coursers carry onward. ÿ g 4-13-3

The journey of the solar flares and sun-wind with seven-rays of sun has been indicated. They drive away the darkness, with light.

Spreading thy web with mightiest Steeds thou comest, rending apart, thou God, the black hued-mantle.

The rays of SÊÿË tremulously shining sink, like a hide, the darkness in the waters. ÿ g 4-13-4

The strong solar wind moving with mightiest rays in speed enter into the earth's atmosphere, through the **magnetosphere**, which act as boundary between the sun and earth. It has been indicated by *the black hued-mantle*. The entry of the sun light has been indicated by shining sink, like a hide, the darkness in the waters.

How is it that, unbound and not supported, he falleth not although, directed downward?

By what self power moves he ? Who hath seen it ? He guard the vault of heaven, a close-set pillar. y g. 4-13-5

The magnetosphere is a life supporting pillar, regarding the nature of magnetosphere, a thought provoking question has been asked?

Hymn 14 Ozone Layer

The hymn looks like imitation of the preceding, but it is not so, it indicate about the other life supporting source, the presence of the ozone layer in the atmosphere of the earth. It has been indicated by *NĒstyas* and *Red-dawn*. It indicates that synthesis of the molecular structure of *A,,vins* is related with the formation of ions in the magnetosphere, but function depends on the chemical energy of photosynthesis. It has been indicated by *NĒstyas and Red dawn*. Red dawn is the symbol of beginning of photosynthesis and *NĒstyas* are related with functions of DNA with oxidation and reduction reactions.

The God hath looked even Agni JĒtavedas, to meet the Dawns refulgent in their glories.

Come on your chariot, ye who travel widely, come to this sacrifice of ours NĒstyas. y g 4-14-1

It has been indicated that the natural forces have prepared the platform for the terrestrial fire, 'to meet the Dawns', is a symbolic expression for the beginning, just like sun rises in the morning, accordingly, the *NĒstyas have been invoked to come*, *NĒstyas* are related with functions of DNA with oxidation and reduction reactions.

Producing light for all the world of creatures, God Savitar hath

raised aloft his banner.

Making his presence by sunbeams, SÊrya hath filled the firmament and earth and heaven. ÿ g 4-14-2

The red dawn is come, riding with brightness onward, distinguished by her beams gay-hued and mighty.

Dawn on her noble-harnessed car, the Goddess, awaking men to happiness, approacheth. ÿ g 4-14-3

It has been indicated after the entry of the sunlight from the ozone layer, it has filled the earth and heaven, and the lord *Savitar* has stimulated the sunlight with shining. It has given the way for the photosynthesis.

May those most powerful steeds and chariot bring you, O A,,vin, hither at the break of Morning.

Here for your draught of meath are Soma juices; at this our sacrifice rejoice, ye Mighty. ÿ g. 4-14- 4

It has been indicated that with the entry of sunlight with red wave-length into the earth's atmosphere, is just like the morning for the photosynthesis and synthesis of the A,,vin- nucleotide pairs of DNA, it has been indicated. Through, the *Soma juices*, the generation of life energy in the cell body has been indicated.

How is it that, unbound and not supported, he falleth not although, directed downward?

By what self power moves he ? Who hath seen it? He guard the vault of heaven, a close-set pillar. Rg. 4-14- 5

The ozone layer is a life supporting pillar, regarding the nature of ozone layer, a thought provoking question has been asked?

Hymn 15 The Immortal chemical energy

After the entry of the visible sunlight with red wavelength of light, on the surface of the earth, the red wavelength of light is just like a messenger. After the conversion of light energy into the chemical energy, it acts, under cosmic principles, for the functions of nature and the living-beings. It has been indicated symbolically by *He who is kindled eastward for S,ªjaya DevavÊta's son*, the

S, ऋjaya DevavÈta's son, symbolically represent living-being.

Agni the herald, like a horse, is led forth at our solemn rite.

God among Gods adorable'ÿ g.4-15-1

Three times unto our solemn rite comes Agni like a charioteer.

Bearing the viands to the God.ÿ g.4-15-2

Round the oblations hath he paced, Agni the Wise, the Lord of Strength,

Giving the offerer precious boons. ÿ g. 4-15-3

He who is kindled eastward for S, ऋjaya DevavÈta's son,

Resplendent, tamer of the foe.ÿ g.4-15-4

It has been indicated that the chemical energy move among the living-beings, just like herald of horse, and it performs the solemn rite of the life on the earth.

So mighty be the Agni whom the mortal hero shall command.

With sharpened teeth and bountiful.ÿ g.4-15-5

Day after day they dress him, as they clean a horse who wins the prize,

Dress the red Scion of the sky.4-15-6

It has been expressed that the chemical energy, after the conversion came into the command of natural forces. They prepare it, just like a horse is prepared to win a prize in the race, in the same fashion the Red wavelength of light under-go preparation for photosynthesis, under natural forces.

When Sahadeva's princely son with two bay horses thought of me,

Summoned by him I drew not back. 4-15-7

And truly those two noble bays I straight way took when offered me. from Sahdeva's princely son. ÿ g. 4-15- 8

Long, O ye A,,vin, may he live, your care, ye Gods, the princely son of Sahadev, Somaka. ÿ g. 4-15- 9

Cause him the youthful prince, the son of Sahadev, to enjoy.

Long life O A,,vin, O ye Gods. 4-15-10

Symbolically the nature of electromagnetic energy and the chemical energy has been indicated. It has been expressed that after

the conversion of the electromagnetic energy into the chemical energy, it will not be converted back in the reverse direction. It has been indicated symbolically by ***I drew not back.*** 4-15-7. the two noble bays are electromagnetic energy of light. *Sahadev, Somaka* is symbolic expression for the electromagnetic energy. Accordingly, with conversion of light energy into the chemical energy, the A,,vin-nucleotide pairs of DNA have received long life for enjoyment of the son of *Sahadev*. It has been indicated symbolically that Chemical energy and DNA is the cause of evolution of life and human-beings, just like *Sahadev*.

Hymn 1 Life supporting system

The life supporting system has developed on the earth gradually. It has been explained in succeeding hymns. The magnetosphere and ionosphere are the regions in the atmosphere of earth, where the fundamental particles are converted into the ions.

In the hymns 16, and 17, a detailed process of the ionization and formation of ozone layer in the atmospheric layers has been described. In the hymn 18 the generation of atom has been indicated.

The Magnetosphere and Ionosphere

The magnetosphere and ionosphere are the regions in the atmosphere of earth, where the fundamental particles are converted into the ions, **Maghavan-charged ions.**

The rotation of the earth at its axis has developed an internal energy source, with this earth's magnetic field and magnetosphere came in to existence, which has provided a shield against solar wind. As we know that earth's atmosphere extend up to magnetopause, which acts as boundary between the earth and space. The magnetosphere is formed by the interactions of the solar wind particles-the electrons and protons, which constitute the hot ionized-plasma, with sun's magnetic field. As a result of solar wind geomagnetic field interactions, mass momentum and energy are transferred from solar wind to magnetosphere and complex pattern of several current systems have generated in the different parts of

magnetosphere, which have provided electrical power for various processes in the magnetosphere.

The shield of magnetosphere, which causes obstruction, has been indicated by *V, tra* as obstacle in the course of solar-rays. The solar-rays, they come at rest, with reaching in the region of magnetosphere, it has been indicated by *Eta, a came at rest*. The electrical interactions in the magnetosphere, has been expressed by the heroic act of *Indra* with his two tawny bays, through it, he remove the obstacle and open the channels for free flow of the ions, just like the flow of rivers, it has been indicated by *opening the stable of the cattle* for the creation symbolically. The ionized ions have been termed as *Maghavan*.

The mantle shield of the magnetosphere, obstruct the passage of sunlight, the interactions in the magnetosphere, and ionosphere have been described, just like the battle between the solar particles and the natural forces, in the battle, the maghavan come out as successful with the help of *Indra*, who remove the obstacle, and destroy the *Dasyu*, the solar particles have termed as sorcerer, prayer less *Dasyu*, ions are the basic source of nature, hence *Maghavan* is the friend of mankind, and electrical interactions have been termed as heroic act of *Indra*, just like a friend of *Maghavan* -ions. Symbolically, it has been expressed as battle. The successful warrior in the battle is *Maghavan*- ions and the Hero is *Indra*-electricity, they have been invoked symbolically to indicate their importance in the creation.

Impetuous, true, let Maghavan come hither and let his tawny Coursers speed to reach us.

For him have we pressed juice exceeding potent: here, praised with song, let effect his visit. ȳ g. 4-16-1

Unyoke, as at thy journey's end, O hero, to gladden thee today at this libation.

Like U-anÈ, the priest a laud shall utter, a hymn to thee, the Lord Divine, who markest ȳ g. 4-16-.2

When the Bull, quaffing, praises our libation, as a sage paying holy rites in secret,

Seven singers here from heaven hath he begotten, who e'en by

day have wrought their works while singing. ÿ g. 4-16-3

When heaven's fair light by hymns was made apparent (they made great splendour shine at break of morning),

He with his succour, best of Heroes, scattered the blinding darkness so that men saw clearly. ÿ g. 4-16-4

The *Maghavan* has been invoked to unyoke his journey for ionization, it has been indicated that during the course of the solar-rays from sun to earth, in the mid region, the earth's magnetosphere acts as shield against the strong solar wind, and the charged fundamental particles under go ionization, it has been indicated by addressing *Maghavan, Unyoke, as at thy journey's end*, As a result of solar wind geomagnetic field interactions, mass momentum and energy are transferred from solar wind to magnetosphere, the Bull-fundamental energy enhance the process, just like a sage paying holy rites in secret. The strong seven solar-rays, play their role with vibrations, accordingly the sunlight is visible at break of morning.

Indra impetuous One, hath waxed immensely: he with his vastness hath filled earth and heaven.

E'en beyond this his majesty extendeth who hath exceeded all the worlds in greatness. ÿ g. 4-16-5

fakra who knoweth well all human actions hath with his eager Friends let loose the waters.

They with their songs cleft e'en the mountain open and willingly disclosed the stall of cattle. ÿ g. 4-16-6

He smote away the floods' obstructor, V,tra; Earth conscious, lent her aid to speed thy thunder.

Thou sentest forth the waters of the ocean, as Lord through power and might, O daring Hero. ÿ g. 4-16-7

It has been indicated that the electricity-Indra is present everywhere, he is mighty and strong, he has removed the obstacle, with converting the solar particles into the ions, accordingly, he has opened the door of cosmic channels of ions.

When much invoked! the water's rock thou cleftest, SaramÈ showed herself and went before thee.

Hymned by Angirases bursting the cow stalls, much strength

thou foundest for us as our leader. ÿ g. 4-16-8

Symbolically, it has been indicated that the magnetosphere is due to the earth, which check the solar-rays and solar particles, is a store house for the natural wealth, through ionization of the fundamental particles, the fundamental particles have been termed as prayer less *Dasyu*, and the ionization is just like bursting of the cow stalls, they enrich the nature and feed the creation. Through, *SaramÈ* and *Angirases*, symbolically it has been indicated by bursting of the cow stalls-water clouds, that the rains on the earth's surface, and source of the molecules of DNA is in the ionosphere.

The SaramÈ is mother of *Yama's* two dogs, *Yama* represent the chromosome, and two dogs represents, two helix of DNA, accordingly, the mother represent the molecular source of DNA.

Come maghavan, Friend of Man, to aid the singer imploring thee in battle for sunlight.

Speed him with help in his inspired invoking: dawn sink the sorcerer, the prayer less Dasyu. ÿ g. 4-16-9

Hymn XVI Kutsa-sunspots

The sunspots are black spots on the surface of sun. They check the luminosity of sun. They are supposed to be the obstacle for the solar rays. They affect the weather and climate on the earth, with their 11 and 22 years cycle.

The function and importance of the sunspots has been indicated.

Come to our home resolved to slay the Dasyu: Kutsa longed eagerly to win thy friendship.

Alike in form ye both sate in his dwelling: the faithful Lady was in doubt between you. ÿ g. 4-16-10

It has been indicated symbolically, that about nature of the sunspots, the faithful lady- mother nature was doubtful.

Thou comest, fain to succour him, with Kutsa,- a goad that masters both the wind God's horses.

That holding the brown steeds like soil for capture, the sage

may on the final day be present. ÿ g. 4-16-11

*For Kutsa, with thy thousand, thou at day-break didst hurl
down greedy fu-ṣa foe of harvest.*

*Quickly with Kutsa's friend destroy the Dasyus, and roll the
chariot-wheel of SÊrya near us. ÿ g. 4-16-12*

It has been expressed that calm and quiet nature of the sunspots, is just like, *Dasyu*, who check the luminosity and reactions at the surface of the earth, the friend of sunspot-*Kutsa* is *Indra*. The *Indra* - electrostatic energy reacts with the magnetic energy of the sunspots, and with the formation of electromagnetic energy, the sunspots disappear. It has been indicated by saying that *Kutsa's* friend *Indra* has destroyed *Dasyu* and rolls the chariot-wheel of *SÊrya* near us symbolically.

*Thou to the son of Vidathin, ÿji-van, gavest up mighty -
M, gaya and Pipru.*

*Thou smotest down the swarthy fifty thousand, and rentest forts
as age consumes a garment. ÿ g. 4-16-13*

It has been indicated symbolically that the process of sunspots is time consuming process, having fifty thousands of obstacles, just like fiends-*Rak-asas* and their forts, and just like a garment disintegrate in the nature with time. Accordingly with time the sunspots appear on the sun's surface and disintegrate with electrical interactions, it is the source of light and solar particles, just like the son of *Vidathin*, *ÿji-van*, gavest up mighty - *M, gaya and Pipru*.

*What time thou settest near the Sun thy body, thy form,
immortal One is seen expanding.*

*Thou a wild elephant with might invested, like a dread lion as
thou wielded weapons. ÿ g. 4-16-14*

*Wishes for wealth have gone to Indra, longing for him in war
for light and at libation.*

*Eager for glory, labouring with praise songs: he is like home,
like sweet and fair nutrition. ÿ g. 4-16-15*

*Call we for you that Indra, prompt to listen, him who hath done
so much for men's advantage;*

Who, Lord of envied bounty, to a singer like me brings quickly

booty worth the capture.ÿ g.4-16-16

When the sharp-pointed arrow, O thou Hero, flieth mid any conflict of the people,

When faithful One the dread encounter cometh, then be thou the Protector of our body. ÿ g. 4-16-17

Further the holy thoughts of Vamadeo; be thou a guileless Friend in fight for booty.

We come to thee whose providence protects us: wide be thy sway for ever for thy singer. ÿ g. 4-16-18

O Indra with these men who love thee truly, free givers, Maghavan, in every battle,

May we rejoice through many autumns, quelling our foes, as days subdue the nights with splendour.ÿ g. 4-16-19

Now as the Bh,gus wrought a car, for Indra the Strong, the Mighty, we our prayer have fashioned.

That he may, ne'er withdraw from us his friendship, but be our bodies' guard and strong defender.ÿ g. 4-16-20

The sunspots are helpful also, it has been indicated that he is like home, like sweet and fair nutrition.ÿ g. 4-16-15

The Bh,gus wrought a car, for Indra, The chlorophyll has been indicated, as Bh,gu represent chlorophyll, which convert electromagnetic rays of light into chemical energy, it became the vehicle of Indra.

Now Indra! lauded glorified with praises, let power swell high like rivers for the singer.

For thee a new hymn, Lord of Bays, is fashioned, May we, car borne, through song be victors over. ÿ g. 4-16-21

Hymn XVII. Ionization-Maghavan

It has been expressed that for the ionization of the charged particles, *the Indra-* electrostatic energy play major role in the ionosphere, which open the channels of floods of natural forces on the earth. The *V,tra* - is an obstacle in the upper atmosphere, he is just like Dragon, who arrest the solar-rays. The *Maghavan, he who breaketh forts in pieces;* It has been indicated that it is the charged

ions, who have break the clouds of charged particles in to the ions, accordingly, he unsettled the settled clouds, which enrich the nature and man.

Great art thou, Indra; yea, the earth, with gladness, and heaven confess to thee thine high dominion.

Thou in thy vigour having slaughtered V,tra didst free the floods arrested by the Dragon. ÿ g.4-17- 1

Heaven trembled at the birth of thine effulgence; Earth trembled at the fear of thy displeasure.

The stedfast mountains shook in agitation: the waters flowed, and desert were flooded.ÿ g.4-17-2

Hurling his bolt with might he cleft the mountain, while, putting forth his strength, he showed his vigour.

He slaughtered V,tra with his bolt, exalting, and their lord slain, forth flowed the waters swiftly.ÿ g.4-17-3

Thy Father Dyaus esteemed himself a hero: most noble was the work of Indra's maker,

He who begat the strong bolt's Lord who roareth, immovable like earth from her foundation.ÿ g.4-17-4

He who alone o'erthrows the world of creatures, Indra the people's king invoked of many.

Verily all rejoice in him, extolling the boons which maghavan the God hath sent them.ÿ g.4-17-5

All Soma juices are his own foe ever; most gladdening draughts are ever his, the Mighty.

Thou ever wast the Treasure-Lord of treasures: Indra, thou lettest all folk share thy bounty.4-17-6

Moreover, when thou first wast born, O Indra, thou struckest terror into all the people,

Thou, Maghavan, rentest with thy bolt the Dragon who lay against the water floods of heaven.ÿ g.4-17-7

The ever-slaying bold and furious Indra, the bright bolt's Lord, infinite, strong and mighty,

Who slayeth V,tra and acquireth booty, giver of blessings,

Maghavan the bounteous.ÿ g.4-17-8

Alone renowned as Maghavan in battles, he frighteneth away assembled armies.

He brigeth us the booty that he winneth: may we well-loved, continue in his friendship.ÿ g.4-17-9

Renowned is he when conquering and when slaying: it is he who winneth cattle in the combat.

When Indra hardeneth his indignation all that is fixed and all that moveth fear him.ÿ g.4-17-10

Indra hath won all kine, all gold, all horses, Maghavan, he who breaketh forts in pieces.;

Most many with these men of his who help him, dealing out wealth and gathering the treasure.ÿ g.4-17-11

What is the care of Indra for his Mother, what cares he for his father who begat him?

His care is that which speeds his might in conflicts, like wind borne onward by the clouds that thunder.ÿ g.4-17-12

Maghavan makes the settled man unsettled: he scatters dust that he hath swept together,

Breaking in pieces like Heaven armed with lightning: Maghavan shall enrich the man who lauds him.4-17-13

Ozone layer

He urged the chariot-wheel of SÊrya forward: Eta,,a speeding on his way, he rested.

Him the black undulating cloud bedeweth, in this mid-air's depth, at the base of darkness, ÿ g.4-17-14

It has been indicated that after ionization of the charged particles, the ozone layer came into the existence in the atmosphere. It has been indicated by saying that The *Eta,,a*, the speedily moving solar-rays on their way came at rest, in the mid-air's region, where black undulating clouds of gently cool down the solar-rays. The black undulating clouds in the mid air represent the ozone layer in the atmosphere and *bedeweth* indicate the absorption of ultraviolet-rays.

As in the night sacrificing priest ÿ g. 4-17-15

*Eager for booty, craving strength and horses, we singers stir
Indra, the strong for friendship.*

*Who gives the wives we seek, whose succour fails not, to
hasten, like a pitcher to the fountain.ÿ g.4-17-16*

It has been expressed that just like a pitcher is filled with water in the fountain, in the same fashion, the *Indra* - with his electric charge is the source of natural wealth.

*Be thou our guardian, show thy self our kinsman, watching and
blessing those who pour the Soma;*

*As Friend as Sire, most fatherly of fathers, giving the suppliant
vital strength and freedom.ÿ g.4-17-17*

*Be helping Friend of those who seek thy friendship; give life,
when lauded, Indra, to the singer,*

*For Indra, we the priests have paid thee worship, exalting thee
with these our sacrifices.ÿ g.4-17-18*

*Alone, when Indra Maghavan is lauded, he slayeth many ne'er-
resisted V, tras.*

*Him in whose keeping is the well-loved singer, never do Gods
or mortals stay or hinder.ÿ g.4-17-19*

*E'en so let Maghavan, the loud-voiced Indra, give us true
blessings, foeless, men's upholder,*

*King of all creatures, give us glory amply, exalted glory due to
him who lauds thee.ÿ g.4-17-20*

*Now, Indra! lauded glorified with praises, let power swell high
like rivers for the singer.*

*For thee a new hymn, Lord of Bays! is fashioned. May we, car-
borne, through song be victors over.ÿ g.4-17-21*

In this way the seer has expressed the functions going on in the ionosphere, and the atmospheric layers, which are the source of natural forces and nature.

Hymn XVIII Atom- the building block

In this hymn, the origin of nature and natural forces has been indicated symbolically. It has been indicated that the building block of the creation is nature, under the nature atom and DNA came in to the existence first.

It has been expressed that after the ionization, the elementary charged ion were wandering in the nature for many years, it has been indicated by a symbolic conversation between *Indra* and mother-nature. Through the conversation the picture of the primitive micro nature, prior to the formation of atom has been explored. This condition was prevailing on the earth for many thousand months and seasons, during which the electrostatic energy of *Indra* was not in motion. It has been expressed symbolically by that mother-nature kept him in womb, and waxen mighty.

This is the ancient and accepted pathway by which all Gods have come into existence.

Hereby could one be born though waxen mighty Let him not, otherwise, destroy his mother.ÿ g.4-18-1

Not this way go, I forth: hard is the passage. Forth from the side obliquely, will I issue.

Much that is yet undone must I accomplish; one must I combat and the other question. ÿ g. 4-18-2

He bent his eye upon the dying mother: My word I now withdraw. That way I follow.

In TvÊ-æ's dwelling Indra drink the Soma, a hundred worth of juice pressed from the mortar.ÿ g.4-18-3

What strange act shall he do, he whom his Mother bore for a thousand months and many autumn?

Now peer hath he among those born already, nor among those who shall be born hereafter.ÿ g.4-18-4

It has been indicated that the ions, which have generated in the primitive condition, were having similar properties and nature, and those who will born, they can not be compared with *Indra*, to whom mother kept in her womb for many years, it has been indicated by *What strange act shall he do, he whom his Mother bore for a thousand months and many autumn?* It has been indicated that the electrostatic energy was dormant for many years, as soon as, the electrostatic energy-*Indra* became active. He has filled the heaven and earth with his heroic act in the nature. The nature speaks in an anthropomorphic manner and revealed the truth, that the water

floods and bursting clouds are acts of *Indra*-electricity. He has removed the obstacles by bursting the water clouds.

Deeming him a reproach, his mother hid him, Indra endowed with all heroic valour.

Then up he sprang him self, assumed his vesture, and filled, as soon as born, the earth and heaven.ÿ g.4-18-5

With lively motion onward flow these waters, the Holy Ones, shouting, as 'twere, together,

Ask them to tell thee what the floods are saying, what girdling rock the waters burst asunder.ÿ g.4-18-6

Are they addressing him with words of welcome? Will the floods take on them the shame of Indra?

With his great thunderbolt my Son hath slaughtered V, tra and set these rivers free to wander.ÿ g.4-18-7

I cast thee from me, mine, - thy youthful mother: thee, mine own offspring, Ku,Èva hath swallowed.

To him, mine infant, were the waters gracious. Indra my Son rose up in conquering vigour.ÿ g. 4-18-8

Thou art mine own, O Maghavan, whom Vyamsa struck to the ground and smote thy jaws in pieces.

But, smitten through, the mastery thou wonnest, and with thy bolt the D Èsa's head thou crushedst.ÿ g.4-18-9

The Heifer hath brought forth the Strong, the Mighty, the unconquerable Bull, the furious Indra. The young solar particles

The Mother left her unlocked Calf to wander, seeking him self, the path that he would follow.ÿ g.4-18-10

It has been expressed, symbolically that with formation of the ions in the nature, the elementary ions were wandering in the nature, just like the calf left by mother, and imaging that he would follow her. It was due to the electrostatic-potential energy of the ions. It has been expressed that due to the inactivity of the ions in the atmosphere, the mother-nature was barren, just like a widow. It has been expressed by the nature-mother herself symbolically, by asking Indra *My son, these Deities forsake thee*. It means they are

inactive. *Then Indra said, about to slaughter V, tra, O my friend Vi-ṣu, stride full boldly forward.* Symbolically, the Vi-ṣu represents, the young charged solar-particles coming from the sun. Accordingly, how the atom has been generated in the nature and with it the nature exhibits its full functions. It has been indicated metaphorically by *I cooked a dog's intestines.* 13

Then to her mighty Child the Mother turned her, saying, My son, these Deities forsake thee.

Then Indra said, about to slaughter V, tra, O my friend Vi-ṣu, stride full boldly forward. g. 4-18-11

Who was he then who made the Mother widow? Who sought to slay thee lying still or moving?

What God, when by the foot thy Sire thou tookest and slewest, was at hand to give thee Comfort? g. 4-18-12

It has been expressed that due to the inactivity of the ions in the atmosphere, the mother-nature was barren, just like a widow, to give the comfort to the mother-nature, *Indra* call his friend Vi-ṣu for help to come forward.

The Atom

In deep distress I cooked a dog's intestines. Among the Gods I found not one to comfort.

My consort I beheld in degradation. The Falcon then brought me the pleasant Soma. g. 4-18-13

It has been expressed symbolically, that in this deep distressed condition of nature. The formation of atom, has given the comfort to the nature. The nature was unsatisfied with the inactive charged particles.

With the entry of the young solar particles with light, spinning of the electrons around the nucleus, in due course of time, magnetic energy has been generated. The elementary particles electron is negatively charged and the proton is positively charged, and the neutron is neutral, the presence of neutron has been indicated by *I found not one to comfort*, the force, which bind the nucleus is Soma, around which electrons shows vibratory movements, The magnetism with the electrostatic energy has produced the

electromagnetic bond energy. It has been indicated by dog's intestine. Just like the dog's coiled intestine stretch, in the same fashion, the electromagnetic bond energy, stretch and binds the atoms. The generation of magnetism has been indicated by *the Falcon then brought me the pleasant Soma*.

It is the beginning of the infinite nature, the atom, constitutes the building block of the creation, and the electromagnetic bond energy has stretched it in the various directions.

Hymn XIX

The electromagnetic bond energy is working everywhere in the nature, it has been expressed, just like the heroic act of *Indra*.

THEE verily, O Thunder-wielding Indra, all the Gods here, the Helpers swift to listen,

And both the worlds elected, thee the Mighty, High, waxen strong, alone to slaughter V, tra. ÿ g. 4-19-1

The Gods, as worn withheld, relaxed their efforts: thou Indra, born of truth, wast Sovran Ruler.

Thou slewest Ahi who besieged the waters, and duggest out their all-supporting channels. ÿ g. 4-19-2

The insatiate one, extended, hard to waken, who slumbered in perpetual sleep, O Indra,-

The Dragon stretched against the seven prone rivers, where no joint was, thou rentest with thy thunder. ÿ g. 4-19-3

Indra with might shook earth and her foundation as the wind stirs the water with its fury.

Srtiving, with strength he burst the firm asunder, and tore away the summits of the mountains. ÿ g. 4-19-4

They ran to thee as mothers to their offspring: the clouds, like chariots, hastened forth together.

Thou didst refresh the stream and force the billows: thou Indra, settest free obstructed rivers. ÿ g. 4-19-5

Thou for sake of Vayya and Turviti didst stay the great stream, flowing, and all sustaining:

Yea, at their prayer didst check the rushing river and make the floods easy to cross, O Indra. ÿ g. 4-19-6

He let the young Maids skilled in Law, unwedded, like fountains, bubbling, flow, forth streaming onward.

He inundated thirsty plains and deserts, and milked the dry Cows of the mighty master. ÿ g. 4-19-7

Through many a morn and many a lovely autumn, having slain V, tra, he set free the rivers.

Indra hath set at liberty to wander on earth the streams encompassed pressed together. ÿ g. 4-19-8

Lord of Bay Steeds, thou broughtest from the ant-hill the unwedded damsel's son whom ants were eating,

The blind saw clearly, as he grasped the serpent, rose, brake the jar: his joints again united. ÿ g. 4-19-9

It has been indicated, symbolically that electromagnetic bond energy is responsible for degradation with breaking of bonds, the same is responsible for union of the joints, and cure of eyesight.

To the wise man O sage and Sovran Ruler, the man who knoweth all-thine ancient exploits.

Hath told these deeds of might as thou hast wrought them, great acts, spontaneous, and to man's advantage. ÿ g. 4-19-10

Now, Indra! lauded glorified with praises, let power swell high like rivers for the singer.

For thee a new hymn, Lord of Bays ! is fashioned. May we, car-borne, through song be victors over. ÿ g. 4-19-11

XXVI. Indra - Kutsa Sun-spots

The sun-spots play major role in the creation with their cycle of 11 and 22 years. These-spots are high intensity zones of magnetic energy. They check luminosity of the sun, with explosion they are removed, and the cause of magnetic storms on the sun's surface. They influence, weather and climate on the earth.

In a symbolic manner, the truth regarding the *Kutsa*-spots, have been expressed in an anthropomorphic from the mouth of the *kutsa* himself, symbolically.

The *kutsa* speak that he is just like *Manu*, *SÊryÊ*, and the sage *Kak-*

ivÈn, holy singer of foretime. It indicates the importance of magnetic energy symbolically. The sun-spots are zones of high magnetic energy in calm and quiet condition, with electrical activity, the electromagnetic energy generates, and the sun-spot explodes with light and solar flares, hence they have termed as *Ŗrjuni*, white sons of black mother. It has been expressed that sun-spots with explosion, brought the rains on the earth, the natural forces are guided through the sun-spots, and the magnetic storms associated with the sun-spots. It has been indicated that the magnetic energy of sun-spots is just like without car, and brought to *Manu*. It has been indicated symbolically, through *Manu*-living-beings, that the magnetic energy and the consciousness are same.

Before all birds be ranked this Bird, O Maruts; supreme of falcons be this fleet-winged Falcon.
Because strong pinioned, with no car bear him he brought to Manu the God loved oblation. ÿ g. 4-26-4

I was foretime Manu, I was SÊryā: I am the sage Kak-ivÈn, holy singer.
Kutsa the son of Ŗrjuni I master. I am the sapient U,anÈ behold me.
 4-26-1

I have bestowed the earth upon the Ŗrya, and rain upon the man who brings oblation.
I guided forth the loudly-roaring and the Gods moved according to my pleasure. ÿ g. 4-26-2
In the wild joy of Soma I demolished fambara's forts, ninety- and- nine, together;
And, utterly, the hundredth habitation, when helping DivodÈsa Atithigva.4-26-3

Before all birds be ranked this Bird, O Maruts; supreme of falcons be this fleet-winged Falcon.
Because strong pinioned, with no car bear him he brought to Manu the God loved oblation. ÿ g. 4-26-4
When the Bird brought it, hence in rapid motion sent on the wide path fleet as thought he hurried.
Swift he returned with sweetness of the Soma, and hence the Falcon

hath acquired his glory. ÿ g. 4-26-5

Bearing the stalk, the Falcon speeding on-ward, Bird bringing from afar the draught that gladdens.

Friend of the Gods, brought, grasping fast, the Soma which he had taken from you loftiest heaven. ÿ g 4-26-6

The Falcon took and brought the Soma, bearing thousands of libations with him, yea ten thousand.

The bold One left Malignities behind him wise, in wild joy of Soma, left the foolish. ÿ g. 4-26-7

XXVII. The Falcon- Consciousness

It has expressed consciousness in the living-beings is just like a falcon, who fly rapidly, which is confined in the body, and covered just like by hundred fortresses. It has been expressed in an anthropomorphic manner symbolically through the mouth of consciousness. It has been termed as falcon. It has been indicated that the consciousness is present in the womb it self, and arrange the natural forces in order.

‘I, as I lay within the womb, considered all generations of these Gods in order.

A hundred iron fortresses confined me but forth I flew with rapid speed a Falcon. ÿ g.4-27-1

The consciousness has generated it self, it has been expressed in the last verse, symbolically. The beaker represents the cell body, the cell body has been synthesized by the interactions of white visible light, through charged ions- he *Maghavan*. The beaker is filled with white milk, it means the source of nutrition is in the beaker it self, the shining liquid indicate the protoplasm in the cell body, where due to the streaming movements of the protoplasm the life-energy generates at its own, the electromagnetic energy enjoy in it just like Hero. It has been indicated symbolically.

And now let Maghavan accept the beaker, white, filled with milk, filled with the shining liquid;

The best of sweet meath which the priests have offered: that Indra to his joy may drink, the Hero that he may take and drink it to his rapture. ÿ g. 4-27-5

‘I, as I lay within the womb, considered all generations of these

Gods in order.

A hundred iron fortresses confined me but forth I flew with rapid speed a Falcon. ÿ g. 4-27-1

Not at his own free pleasure did he bear me: he conquered with his strength and manly courage.

Straight way the Bold One left the fiends behind him and passed the winds as he grew yet more-mighty. ÿ g. 4-27- 2

When his loud cry from heaven down sped the Falcon, hence hasting like the wind he bore the Bold One.

Then, wildly raging in his mind, the archer K, „Ēnu aimed and loosed the string to strike him.4-27-3

The Falcon bore him from heaven's lofty summit as the swift car of Indra's Friend bore Bhujyu.

Then downward hither fell a flying feather of the Bird hasting forward in his journey. ÿ g. 4-27-4

And now let Maghavan accept the beaker, white, filled with milk, filled with the shining liquid;

The best of sweet meath which the priests have offered: that Indra to his joy may drink, the Hero that he may take and drink it to his rapture. ÿ g. 4-27-5

XXVIII Indra-Soma-Electromagnetic energy

The Indra-Soma represents electromagnetic energy, the synthesis and degradation in the nature is due to the oxidation and reduction by the *Electromagnetic bond energy*, it has been expressed in this hymn that all functions of the nature are related with the electromagnetic energy, and due to this the nature is working as a system.

Allied with thee, in this thy friendship, Soma, Indra for man made waters flow together,

Slew Ahi, and sent forth the Seven Rivers, and opened as it were obstructed fountains. ÿ g. 4-28-1

It has been expressed, that it is due to the electromagnetic energy, due to which, the water is flowing on the earth. The earth's magnetosphere has obstructed the flow of the solar rays, the electromagnetic energy has opened the door for free flow of the seven rays of the visible light. The obstacle, have been expressed as

Dasyus and the Dasas, they are the inert, inactive objects, the electromagnetic energy, disintegrate them with activation. It has been expressed symbolically, that *Indra* has killed the *Dasyus* and object tribes of *Dasas*. The weapons of *Indra* are his, positive and negative charges.

Indu, with thee for his confederate, Indra swiftly with might pressed down the wheel of SÊrya.

What rolled, all life's support, on heaven's high summit was separated from the great oppressor. ÿ g. 4-28-2

It has been indicated that the sun-spots have obstructed the luminosity of the Sun. The electromagnetic energy has removed the obstacle.

Indra smote down, Agni consumed, O Indu, the Dasas are the noontide in the conflict.

Of those who gladly sought a hard-won dwelling he cast down many a thousand with his arrow. ÿ g. 4-28-3

Lower than all besides hast thou, O Indra, cast down the Dasyus, abject tribes of DÊsas.

Ye drave away, ye put to death the foe-men, and took great vengeance with your murdering weapons. ÿ g. 4-28-4

So, of a truth, Indra and Soma, Heroes, ye burst the stable of the kine and horses,

The stable which the bar of stone obstructed; and piercing through set free the habitations. ÿ g. 4-28-5

Like two slight images of girls, unrobed, upon a new-wrought post, So shine the Bay Steeds in their course. ÿ g. 4-32-23

Metaphorically, through the example of two slight images of girls, the picture of the bays-oxidation and reduction, has been projected.

For me the Bays are ready when I start, or start not, with the dawn, Innocuous in the ways they take. ÿ g. 4-32-24

It has been expressed that the oxidation and reduction reactions proceed on their way, without rest.

a. Autotrophic ÿ bhus-cells - The white cow

प्र ऋभुभ्यो दूतमिव वाचमिष्य उपस्तिरे श्वेतरीं धेनुमीळे।
ये वातजूतास्तरणिभिरेवैः परि द्यां सद्यो अपसौ बभूवुः ॥१॥

1. I send my voice as herald to the *ṛbhus*; I crave the white cow for the overspreading.

Wind-spel, the Skilful Ones in rapid motion have in an instant compassed round the heaven. (ṛ gveda 4-XXXIII-1)

The *ṛbhus*-cells have been praised as forerunner-messenger.

The white cow- visible light has been invoked for its overspreading on the earth. The cow is a symbolic expression for the nourishment, the light energy feed the creation through the chemical energy, it has been converted in to the chemical energy during the photosynthesis or chemo-synthesis by the *ṛbhus*-cells. In this way the *ṛbhus* are forerunner, who spread it over the earth and heaven, it has been indicated by the wind spel

Wind spel, the Skilful Ones in rapid motion, it means the air-oxygen released during the process give a rapid motion to the activity of *ṛbhus*-cells, accordingly the chemical energy and Oxygen have spread on the earth and instantly available round the heaven.

यदारुमक्रंभुवः पितृभ्यां परिविष्टी वेषणां दंसनाभिः।
अदिहेवानामुप सख्यमायन्धीरांसः पुष्टिमवहन्मनायै ॥२॥

2. What time the *ṛbhus* had with care and marvels done proper service to assist their parents,

They won the friendship of the Gods; the Sages carried away the fruit of their devotion. ṛ g.4-33-2

It has been asked that at which time the *ṛbhus*- cells have done this marvellous service to assist their parents. The answer has been given that the cells have won the friend ship of the natural forces. It means the first they have adopted them selves to resist in the adverse environmental conditions for life. The sages-the newly formed *ṛbhus* cells, with the cell division, the cells carried away the fruit of their devotion as sage to spread it in the nature.

It means the products of the photo synthesis like oxygen and glucose have been spread in the nature through multiplication of the cells. The parents are the old cells, they under go ageing and

decomposition with death, through this the organic matter with nutrients has modified the physical environment. In this way they have speed up the process of evolution, which is a assistance and service to the parents-*ÿbhus*-cells, through which the cells have acquired the resistance to survive in the nature. It has been expressed by they won the friendship of the Gods;

The Sages carried away the fruit of their devotion, The sages is a symbolic expression for the newly formed cells, they speed up the process of organic evolution through their activities in the nature.

पुनर्ये चक्रुः पितरा युवाना सना यूपैव जग्णा शयाना।
ते वाजो विभ्वो ऋभुरिन्द्रवन्तो मधुप्सरसो नोऽवन्तु यज्ञम्॥३॥

3. *May they who made their Parents, who were lying like posts that moulder, young again for ever,-*

May Vaja, Vibhvan, ÿbhu, joined with Indra, protect our sacrifice, the Soma-lovers. ÿ g.4-33-3

It has been expressed that the *ÿbhus*, who have made their parents young again for ever, they who were lying just like posts that moulder, it means the dead cells were lying as waste, they under go decomposition with the help of *ÿbhus*- micro organisms, they acts as decomposers. In this way they nourish the developing *ÿbhus*-cells and in turn they became young with cell division for ever. *The VĒja, Vibhvan and ÿbhu* represents different stages of the development of *ÿbhu*-cell. They have been prayed that they remain active with *Indra*-charged particles. They generates Soma-life energy, it has been expressed as Soma lovers.

यत्संवत्समृभवो गायरक्ष न्यत्संवत्समृभवो मा अर्पिशन्।
यत्संवत्समर्भन्भासो अस्यास्ताभिः शर्माभिरमृतत्वमाशुः॥४॥

4. *As for a year the ÿbhus kept the Milch-cow, throughout a year fashioned and formed her body,*

And through a year's space still sustained her brightness, through these their labours they were made immortal. ÿ g.4-33-4

How the cell became immortal. It has been explained by saying that the *ÿbhus* kept the milk- cow throughout a year fashioned and formed her body. The milk cow is a metaphor for the chlorophyll as a symbol of nourishment, which feed the cell through

photosynthesis. In the beginning with the synthesis of proto chlorophyll, when it remains active for about a year, with this the cells became immortal. It means they became autotrophic by nature, with a mechanism to synthesize their own food material.

ज्येष्ठ आह चमसा द्वा करेति कनीयान्नीकृणवामेत्याह।
कनिष्ठ आह चतुरस्करेति त्वष्ट ऋभुवस्तत्पनयद्वयो वः॥५॥

5three,-this was the younger's sentence.

Four beakers let us make,- thus spoke the youngest. Tva—E approved this rede of yours, O ÿbhus.ÿ g.4-33-5

The cell division has been indicated through the mouth of eldest ÿbhu-old cell that let us divide the beaker in to two, the younger one said that let us make three and the youngest ÿbhu-cell said let us make four beakers-cells, Tva—E DNA approved this. It means the youngest cell is fit for the cell division.

सत्यमूचुर्नर एवा हि चक्रुर्नु स्वधामृभवौ जग्मुरेताम्।
विभ्राजमानांश्चमसाँ अहेवावेनत्त्वा चतुरो ददान्॥६॥

6. The men spake truth and even so they acted: this God like way of theirs the ÿbhus followed.

And Tva—E, when he looked on the four beakers resplendent as the day, was moved with envy.ÿ g.4-33-6

The men spake the truth and ÿbhus followed it and from the division of the youngest four beakers have been produced and the Tva—E -DNA looked upon the four cup, it means with the cell division the DNA also divided in to four.. With the brightness of the day, it means with the rising of sun the day move ahead. In the same fashion the cell division proceed forward.

It indicates that for the cell division the morning hours play an important role.

द्वादश धून्यदगोह्य स्यातिथ्ये रणऋभवः ससन्तः।
सुक्षेत्राकृण्वन्नयन्त सिन्धुश्चन्वातिष्ठन्नोषधीर्निम्नमार्षः॥७॥

7 When for twelve days the ÿbhus joyed reposing as guests of him who never may be hidden,

They made fair fertile fields, they brought the rivers. Plants spread o'er deserts, waters filled the hollows.ÿ g.4-33-7

It has been indicated that for about the twelve days, when the

cells are the guest of the life energy-consciousness, with this the cells through the cell division spread in all the directions. The life energy maintain its continuity with the cell division, hence it has been said that life energy is guest, who never may be hidden. Accordingly they brought the fertile fields, they brought rivers, plants, which spread over the deserts and the water filled the vacant places.

It means with the cell division, the cell has been proceed towards evolution, with the formation of food chains and food webs in the nature accordingly the living-beings with plants have been evolved, which have been spread over the desert and through the transpiration of water from the surface of the plants, the rains have filled the empty canals. It has been indicated through- They made fair fertile fields, they brought the rivers. The plants spread o'er deserts, waters filled in the hollows.

स्थं ये चक्रुः सुवृत्तं नरेष्ठां ये धेनुं विश्वजुवं विश्वरूपाम्।
त आ तक्षन्त्वृभवौ रयिं नः स्ववसः स्वपसः सुहस्ताः॥८॥

8 May they who formed the swift car, bearing Heroes, and the Cow omniform and all-impelling,

Even may they form wealth for us, -the ÿbhus, dexterous-handed, deft in work and gracious. ÿ g.4-33-8

The formation of the well developed moving cell has been indicated. The inherent quality of the cell division has been expressed as *bearing Heroes*, the importance of the cellular body as food has been expressed by the cow omni-form and all impelling. It means the ÿbhus-cells with their dexterous- handed quality they are deft in work with grace, they have brought the wealth for us.

अपो ह्येषामजुषन्त देवा अभि क्रत्वा मनसा दी ध्यानाः।
वाजो देवानामभवत्सर्कमेन्द्रस्य ऋभुक्षा वरुणस्य विश्वा॥९॥

9 So in their work the Gods had satisfaction, pondering it with thought and mental insight.

The Gods' expert artificer was VĒja, Indra's ÿbhuk-an, Varuṇa's was Vibhvan. ÿ g.4-33-9

With this the natural forces were satisfied with their work worth to be look over. The Gods- nature's natural skilled worker is Vaja, it means youngest VĒja-ÿbhu- cell is the artificer of the

nature through its functions. *The ĩbhuk-an-* mature *ĩbhu* have relation with *the Indra*-generation of the life energy and *Vibhvan*-vigorous cells have relation with *the Varuṣa*-production of biomass.

The VĒja, ĩbhuk-an, and Vibhvan, represent different stages of the cell in nature with the development, they bring prosperity in the nature through their functions.

ये हरी॑ मे॒धयो॒क्था म॑द॒न्त इन्द्रा॑य च॒क्रुः सु॒युजा॒ ये अ॒श्वा।
ते रा॒यस्यो॑षं द्र॒विण॒न्वस्मे॒ धत्त॑ ऋ॒भ॒वः क्षे॒म॒यन्तो॒ न मि॒त्रम्॥१०॥

10 They who, made glad with sacrifice and praises, wrought the two Bays, his docile Steeds, for Indra,-

ĩbhus, as those who wish a friend to prosper, bestow upon us gear and growth of riches. ĩ g.4-33-10

The natural forces with actions and interactions brought for them joy and praise, they wrought two bays for Indra-opposite electrical charges.

It has been prayed that *ĩbhus* may bestow upon us growth with cell division. The *ĩbhus* are friend for those who wish to prosper. It means cells provide healthy body with their functions.

इ॒दाहः॑ पी॒तिमु॒त वो॒ म॑दं धु॒र्न ऋ॒ते श्रान्त॑स्य स॒ख्याय॑ दे॒वाः।
ते नून॑म॒स्मे ऋ॒भ॒वो व॑सू॒नि तु॒तीयै॑ अ॒स्मिन्सर्व॑ने द॒द्यात॑ ॥११॥

11 This day have they set gladdening drink before you. Not without toil are Gods inclined to friendship.

Therefore do ye who are so great, O *ĩbhus*, vouchsafe us treasures at this **third libation**. ĩ g.4-33-11

The third libation- the third phase of life has been indicated. When the cell reach in the third phase of life, the natural forces set the gladdening drink- ageing, it is an indication of the ageing, through it the cells under go decomposition and became the part of nature; it is a source of treasure as organic matter. Hence the *ĩbhus* are great.

b. ĩ bhus Ageing and senescence

ऋ॒भुर्वि॒भ्वावा॒जइन्द्रो॑नोअ॒च्छेम॑य॒ज्ञं र॑त्न॒धेयो॑पयात।
इ॒दीहि॒वोघि॒षणादि॒व्यह्ना॑म॒ घा॑त्पी॒ति संम॑दा॒अग॑मतावः॥ १॥

To this our sacrifice come *ĩbhu*, *Vibhvan*, *VĒja*, and *Indra* with

*the gift of riches, Because this day hath **Dhisana** the Goddess set drink for you : the gladdening draughts have reached you 4-XXXIV-1*

It has been said that our sacrifice, the work which we are doing is for you, and the *ÿbhus*-cells along with *Indra* have been prayed to take part in it with gift of reaches. It means the *ÿbhu*, *Vibhvan*, *VĒja*, and *Indra*, are the source of treasure, which enrich the nature through the gases and organic matter. *Because this day hath Dhisana-*, The heaven and earth has set the time for you, it suggests abundance of food material stored within the cell, with storage of food material within the cell, the cell protoplasm become thick, and permeability of the cell decreases, it is a indication of ageing in nature, hence it has been said that the nature has set the drink- time of ageing for you. The ageing has been indicated by *the gladdening draughts have reached you*

विदानासो जन्मनो वाजरला उत ऋतुभिर्ऋभवोमादयध्वम्।
संवोमदा अर्घतसंपुरिष्टिः सुविरामस्मेरविमेरयध्वम्॥२॥

2. *Knowing your birth and rich in gathered treasure, ÿbhus, rejoice together with the ÿtus.*

The gladdening draughts and wisdom have approached you: send ye us riches with good store of heroes.ÿ g.4-34-2

In a anthropomorphic manner the *ÿbhus* have been addressed that your birth and assembly in the nature is the source of treasure for the nature. You together enjoy the seasonal variations, then with maturity the gladdening drought and wisdom will approach you, with this through your actions grant us the source of natural forces, which are heroes of nature.

It has been said that with their formation in the nature with abundance of nutrients, *ÿbhus* feel gladdening with the seasonal variations, and the gladdening drought-the moment of ageing approach them, their decomposition in the nature is the source of organic matter.

अयं वो यज्ञं ऋभवोकारियमामनुष्वत्प्रदिवौदधिध्वे।
प्रवोच्छाजुषाणासौ अस्थुरभूतविश्वे अग्रियोतवाजाः॥३॥

3. *For you was made this sacrifice, O ÿbhus, which ye, like men, won for yourselves a foretime.*

To you come all who find in you their pleasure: ye all were - even the two elder- VĒjas. ṽ g.4-34-3

The bio-geo-chemical cycle in the nature has been indicated by saying that to you come all who find in you their pleasure:: ye all were - even the two elder- VĒjas. It means the living-beings, who feel pleasure in consuming the cellular fleshy bodies as their food, they will reach to you, it means after the death of the living organisms, their body will be mixed in to the soil as organic matter after decomposition, which will provide the nutrients to the developing cellular bodies to feed them, which reaches to the ṽbhus-cells.

अभूदुवोविधतेरत्तुधेयमिदानरोदाशुषेमत्याय ।

¹ पिबतवाजा कृभवोददेवोमहितृतीयंसवनमदाय ॥ ४ ॥

4. Now for the mortal worshipper, O Heroes, for him who served you, was the gift of riches.

Drink, VĒjas, ṽbhus! unto you is offered, to gladden you, the third and great libation.ṽ g.4-34-4

The mortal worshipper is a term for the living organisms, whose death is certain after completing their life cycle. During the life cycle, they are served by the ṽbhus-cells, which is a gift for them as nourishment. Drink, VĒjas, ṽbhus! It means absorb water, which enhance the metabolic reactions, through which the cells move towards maturity and reached to their third stage of development, after which the ṽbhus-cells move towards ageing, it has been indicated by third and great libation to gladden you

आवाजायातोपनकृभुक्षामहोनेरोद्रविणसोग्रणानाः ।

आवःपीतयोषिपित्वेअह्वामिमाअस्तनवस्वइवग्मन् ॥ ५ ॥

5. Come to us, Heroes, VĒjas and ṽbhuk-ans, glorified for the sake of mighty treasure,

These draughts approach you as the day is closing, as cows, whose calves are newly- born, their stable.ṽ g.4-34-5

The Heroes, VĒjas and ṽbhuk-ans are the developing cells, which have been invoked to participate in the creation-sacrifice, they acts as the source of treasures for the nature, as they synthesize food material for the creation, which may be through primary or secondary production along with exchange of gases and

transpiration.

These drought has approach you, it means ageing is approaching you with thirst, it has been indicated through a metaphor of sun set, which is a symbol of closing day, with this the cow move towards her stable to look after newly born calves, in the same fashion, with maturity of the cell they move towards aging, which is a source of nourishment for the newly born cells as their food. It means with ageing the cell will be converted in to carbon di oxide CO₂ and water with organic matter, which acts as nourishment for the new cells in the nature.

आनपातःशवसोयातनोषेमयज्ञनमसाहूयमानाः।

सजोषसः सूरयोयस्यस्थमाध्वः पातरत्नवाइन्द्रवन्तः॥६॥

6. Come to this sacrifice of ours, ye Children of Strength, invoked with humble adoration.

Drink of this meath, Wealth-givers, joined with Indra with whom ye are in full accord, ye Princes.ÿ g.4-34-6

The Children of Strength is a metaphor for the young developing cells and have been addressed as princes-cells, which have been invoked, where metabolic reactions are at its peak, hence it has been said that consume the food material with respiration, which is a source of by products as wealth of the cell, which has been indicated trough *Drink of this meath, with Indra you are in full accord*, it means in this stage the generation of life energy is in its optimum condition due to the metabolic reactions, which is a assistance for the streaming of the protoplasm and a source of wealth as food for the cells.

सजोषा इन्द्र वरुणेन सोमसजोषाः पाहिर्गिर्वणोमरुद्भिः।

अग्रेपाभिः ऋतुपाभिः सजोषाग्रास्यन्तीभिरत्नधाभिः सजोषाः॥७॥

7. Close knit with Varuṣa drink the Soma, Indra; close-knit, Hymn-lover! with the Maruts drink it :

Close-knit with drinkers first, who drink in season; close-knit with heavenly Dames who give us treasures.ÿ g.4-34-7

The young cells are in close association with Varuṣa, which indicate the production of biomass with increase in gravity, they are in close association of Indra, it indicates the electrical activities in the cell, through which the magnetic energy-Soma generates the

electromagnetic energy in the cell for its living activities, they are in the association with water, it has been indicated through *Maruts*-water clouds, which is the source of water for the absorption by the plants and animals drink it.

Close-knit with drinkers first, who drink in season; close-knit with heavenly dames who give us treasures. It means the *ÿbhus*-cells have close association with the seasonal variations, who are the first to enjoy it with their development. It has been indicated that they are in close association with atmospheric gases, such as carbon di oxide, oxygen and water, which are the source of treasures for us through photosynthesis and respiration.

स॒जोष॑सु॒ आ॒दि॒त्यैर्मा॑दय॒ध्वं स॒जोष॑ स ऋ॒भ॒वः प॑र्व॒त॒भिः।

स॒जोष॑सु॒ दै॒व्यैर्ना॑स॒वि॒त्रा स॒जोष॑सु॒ सि॒न्धु॒रत्न॑धे॒भिः॥८॥

8. *Rejoice in full accord with the Ādityas, in concord with the Parvatas, O ÿbhus; In full accord with Savitar, Divine One; in full accord with floods that pour forth riches.* ÿ g.4-34-8

It has been addressed to the *ÿbhus* that rejoice with the *Ādityas*, the *Ādityas*, represent the twelve month with seasonal variations under temperature pressure gradient, which give the motion for the cellular development, which is a source of development and flow of the food material with translocation and enrich the inner cells of the body through stimulation by the *Savitr*-stimulator-enzymes, it has been indicated by saying O *ÿbhus*; *In full accord with Savitar, Divine One; in full accord with floods that pour forth riches.*

ये अ॒श्वि॒ना ये पि॒तरा॑य ऊ॒ती॒धे॒नुं त॑त्त॒क्षु ऋ॒भ॒वो ये अ॒श्व॒ ।

ये अ॒स॒न्नाय॑ऋ॒ध्न॒गो॒द॒सी ये वि॒भ॒वो॒न॒रः स्व॑प्त्वा॒नि॒च॒क्रुः ॥९॥

9. *ÿbhus, who helped their Parents and the A,,vins, who formed the Milch-cow and the pair of horses, Made armour, set the heaven and earth asunder,-far-reaching Heroes, they have made good offspring.* ÿ g.4-34-9

It has been said that *ÿbhus* have helped their parents. It means the cells provide nourishment and assistance to the older cells. *The A,,vins formed the Milk cow and pair of horses.* It means the nucleotide pairs of DNA are just like milk cow. They nourish the organisms through protein synthesis and enzymes. The milk cow is a metaphor for the protein synthesis through the nucleotide pairs,

which act as milk for development, pair of horses, it is a metaphor for the pair of chromosomes, they have been synthesised from the DNA and act as horse like to give it vigour for the development with cell division, the new cells have been expressed as off-springs.

ये गोमन्तमत वाजवन्तसुवीरर्यि धृत्यवसुमन्तपुरुक्षुम्।
ते अग्रेपाङ्कभवोः मन्दसाना अस्मेधत्तयेचरातिगृणन्ति ॥ १० ॥

10. *Ye who have wealth in cattle and in booty, in heroes, in rich sustenance and treasure,*

Such, O ye ÿbhus, first to drink, rejoicing, give unto us and those who laud our present ÿ g.4-34-10

It has been expressed to the autotrophic cells, that ÿbhus-cells have wealth in cattle and in booty, It means the animals consume the plants as food without consent of the plants, which is the wealth of cattle, it has been indicated by the wealth in *cattle and in booty*.

It has been prayed that ÿbhus that such is your wealth that you have first prepared the food with rejoice, give it to us for prosperity with good health.

नापाभूतनवोती तृषामानिः शस्ताङ्कभवोयज्ञेअस्मिन् ।

समिन्त्रेणमदंश्च संमरुद्धिः संराजभीरत्तुधेयायदेवाः॥११॥

11. *Ye were not for : we have not left you thirsting, blameless in this our sacrifice, O ÿbhus.*

Rejoice you with the Maruts and with Indra, with the Kings, Gods ! that ye may give us riches. ÿ g.4-34-11

It has been explained to the ÿbhus, that we have not left you thirsting, it means we are not responsible for your ageing in the nature, with the sacrifice, you are close to us, we rejoice you with the water, Indra-energy and the natural factors, you are the king of natural forces, they may give us rich nature with fresh air.

c. ÿ bhus-Developing cellular body

इहोप यात शवसो नपातः सौधन्वना ऋभवो मापं भूत।

अस्मिन्हि वः सर्वे रत्नधेयं गमन्त्विन्द्रमनु वो मदासः॥१॥ ४-३५-१

1. *Come hither, O ye Sons of Strength, ye ÿbhus; stay not afar, ye Children of Sudhavan.*

At this libation is your gift of treasure. Let gladdening drop approach you after Indra's. ÿ g.4-35-1

The children of Sudhanvan- it means children of coaservates, which have been developed from the *Sudhanvan*, children of strength represents well developed mature *ÿbhu-* cell, which are the part of the human body, they have been invoked, it has been prayed that stay not afar, it means remain with us, so that we may long live, *at this libation is your gift of treasure*, it means with aging the cells acts as a natural resource, which is their gift, *let gladdening drop approach you after Indra*, it has been prayed that the *ÿbhus-* cells may not undergo ageing before the disappearance of life energy.

आर्गवृभूणामिह रत्नधेयमभूत्सोमस्य सुषुतस्य पीतिः।

सुकृत्या यत्स्वपस्यया च॑ एकं विचक्र चमसं चतुर्धा॥२॥

Hither is come the ÿbhu's gift of riches; here was the drinking of the well - Soma pressed Soma.

Since by dexterity and skill as craftsman ye made the single chalice to be fourfold. ÿ g.4-35-2

*ÿbhus-*cells have been praised that their gift of richness has reached to us, it means through the natural resources, which are the life resource as food and respiration has reached to us, *here is the drinking of the well - Soma pressed Soma, - Soma pressed Soma*, it means it has been expressed that in the multi-cellular bodies, the cells are interconnected, and from cell to cell, life energy generates in a integrated manner, which has been termed as well of Soma, *The ÿbhus-*cells in the multi-cellular organisms have been developed through cell division in a fourfold manner, which is a act of *ÿbhu-*cell as a skilled craftsman, where life energy - Soma is generating in a integrated manner, hence it has been asked in a symbolic fashion to the young *ÿbhus--*cells that come and enjoy well of *Soma-pressed Soma*.

व्यकृणोत चमसं चतुर्धा सखे वि शिक्षेत्यब्रवीत।

अथैत वाजा अमृतस्य पन्थां गणं देवानामृभवः सुहस्ताः॥३॥

3. Ye made fourfold the chalice that was single: ye spake these words and said O Friend, assist us;

Then VĒjas! gained the path of life eternal, deft handed ÿbhus, to the God's assembly. ÿ g.4-35-3

The ÿbhu-cell, has converted the single cell in to a

multi0cellular body through cell division in a fourfold manner, after the development of the multi-cellular body, they speak that you are friends assist us. It has been indicated that the multi-cellular organisms have come in to the existence through cell division from a single cell, which have similar origin and synonym to each other as friend, where the *VEja*- young cells through cell division are eternal in the assembly of the natural forces and factors, which have synthesized the multi-cellular body and feeding it.

कि॒मयः॑ स्वि॒च्चम॑स ए॒ष आ॑स॒ यं का॒व्येन॑ च॒तुरो॑ विच॒क्र।
अथा॑ सु॒नुध्वं॑ स॒र्वनं॑ म॒दाय॑ पा॒त ऋ॒भवो॑ म॒धुनः॑ सो॒म्यस्य॑ ॥४॥

Out of what substance was that chalice fashioned which ye made fourfold by your art and wisdom?

It has been asked that out of which substance, with your cleverness, you have fashioned the cell, which has been dividing in a fourfold manner with your art of wisdom? ĩ g.4-35-4

श॒च्या॒कर्त॑ पि॒तरा॑ यु॒वाना॑ श॒च्या॒कर्त॑ च॒मसं॑ दै॒वपा॑नम्।
श॒च्या॒ हरी॑ ध॒नु॒तरा॑वत॒ष्ट्रेन्द्र॒वाहा॑वृ॒भवो॑ वा॒जरत्नाः॑ ॥५॥

5. Ye with your cunning made your parents youthful; the cup, for Gods to drink ye formed with cunning;

With cunning, ĩbhu rich in treasure fashioned the two swift Tawny Steeds who carry Indra. ĩ g.4-35-5

The answer has been given that ĩbhu-cell has prepared a cup for the natural forces to act in it, with their wisdom and made their parents young, it means in the early primitive conditions, coaservates have been formed, which were having inorganic substances as the symbol of richness, under natural forces, with the formation of the two types of charged particles, electrical activity was there with, it has been indicated by *two swift Tawny Steeds who carry Indra*, with the energy transformation and division, the developing ĩbhush became young and youthful.

यो वः॑ सु॒नोत्य॑भि॒पित्वे॑ अ॒ह्नां ती॒व्रं वा॑जासः स॒र्वनं॑ म॒दाय।
तस्मै॑ र॒ यिमृ॑भ॒वः स॒र्ववी॑र॒मा त॑क्षत वृ॒षणो॑ म॒न्दसानाः॑ ॥६॥

6. Whoso pours out for you, when days are closing, the sharp libation for your joy, O VEjas.

For him O mighty ĩbhush, ye rejoicing have fashioned wealth with plenteous store of heroes. ĩ g.4-35-6

It has been indicated that when days are closing, it means with the sunset, whoso pours out libation for the joy of *ÿbhus*-cells, their actions with libation has fashioned wealth with plenty of heroes. It means the time of sunset is important for the cellular activities and metabolism, during this period with cell division the cells synthesize the products, they are transported to the neighbouring cells they are the source of long life with many cells.

प्रातः सुतमपिबो हर्यश्च माध्यन्दिनं सर्वनं केवलं ते।
समृधुभिः पिबस्व रत्नधेभिः सखीयाँ इन्द्र वकृषे सुकृत्या ॥७॥

7. *Lord of Bay Steeds, at dawn the juice thou drunkenest: thine, only thine, is the noon- day libation.*

Now drink thou with the wealth bestowing ÿbhus, whom for their skill thou madest friends, OIndra.ÿ g.4-35-7

It has been said that the lord of bay steeds, at dawn the juice thou drank: is thine only thine, it means the winning cells have been addressed, which have won the race, through completing their course of life cycle, the metabolic products, which have been synthesised during the morning hours- dawn. The dawn- sun rise also indicate the development of the physical body in the early stages, they consume the food for the development of the cell body, and with maturity of the cells, the food reserve increases in the cells just like that during the noon hours, when the food material synthesised remains there without transfer, in the same fashion with maturity of the cells, the food material accumulates in the cell as reserve food material with a decrease in the metabolism, and the cell products acts as natural wealth with ageing. It has been indicated by Now drink thou with the wealth bestowing *ÿbhus*, it means the products of the cells are the source of nature with organic matter, due to this they became the friend of *Indra* for his activity in the nature.

ये देवासो अभवता सुकृत्या श्येनाइवेदधि दिवि निषेद।
ते रत्नं धात शवसो नपातः सौधन्वना अभवतामृतासः॥८॥

8. *Ye whom your artist skill hath raised to God head have set you down above in heaven like falcons.*

So give us riches, Children Sudhanvan, O Sons of Strength; ye have become immortal.ÿ g.4-35-8

With the activities of the *ÿbhus* in the nature, with their interactions in the nature, the *ÿbhus* have acquired the status of natural resource and their importance has been established on the earth and heaven, it has been indicated that the natural forces have set you like falcons. The falcon is a metaphor for the atmospheric gases.

So give us riches, Children *Sudhanvan*, O Sons of strength; the youngest *ÿbhus*-cells with optimum metabolic activities and cell division have been invoked as children of *Sudhanvan*, and strength, which are immortal with cell division as they preserved their identity through the cell division.

य तृतीयं सर्वं रत्नधेयमकृणुध्वं स्वपस्या सुहस्ताः।

तद्भवः परिष्कृतं व एतत्सं मदैभिरिन्द्रियेभिः पिबध्वम्॥१॥ ४-३५-९

9. The third libation, that bestoweth treasure which ye have won by skill, ye dexterous-handed,-

This drink hath been effused for you, *ÿbhus*: drink it with high delight, with joy like *Indra*. *ÿ g.4-35-9*

It has been indicated that with the old third stage of life, the old cells are the source of treasure through their cellular parts, which they have synthesized during the life period, it has been prayed that with aging this drink has been effused and enjoy this moment as the joy of *Indra*, it means with ageing the cell will under go decomposition and *Indra*- life energy will be free in the nature, which has been expressed as joy of *Indra* and in the same manner the aging cells will be decomposed in the nature, it should be enjoyed like joy of *Indra*.

d. *ÿ bhus-Vibhvan*- Vigorous cells

अनश्नो जातो अनभीशुर्व्वथ्योऽं स्थस्त्रिचक्रः परि वर्तते रजः।

महत्तद्गो देव्यस्य प्रवाचनं द्यामृभवः पृथिवीं यच्च पुष्यथ॥१॥

1. The car that was not made for horses or for reins, three-wheeled, worth of lauds rolls round the firmament.

That is the great announcement of your Deity, that, O ye *ÿbhus*, ye sustain the earth and heaven. 4. XXXVI-1

It has been expressed that the *ÿbhu*'s car, about which we are talking is not made for horses or for reins, even than the car is three

wheeled, which rolls round the firmament, which is worth to be praised.

In a symbolic fashion the through the three wheel of *ṽbhu*, it has been indicated that the *ṽbhu*- cell has three stages in life, in the nature newly formed cell under go development, with maturity, they became young and after maturity, they became old and undergo ageing with decomposition of the cell body, through microbial actions. It has been indicated through the three wheels of *ṽbhu*-cell. The living creation, which came in to the existence from the *ṽbhu*-cell, they are moving round the firmament with their various forms. Further it has been indicated that the world of the living-beings in the heaven and earth has been sustained by the *ṽbhus*-cells. It means the world of living-beings has been evolved from a single cell, and they exhibits same functions at cellular level, due to their activities in the nature, they *ṽbhus*, sustain the Biological world on the earth and heaven.

स्थं ये चक्रुः सुवृत्तं सुचेतसोऽविह्वरन्तं मनसस्पतिं ध्यायाम्।
तां ऊ न्वर्ष्यस्य सर्वनस्य पीतय आ वो वाजा ऋभवो वेदयामसि॥२॥

2. *Ye Sapient Ones who made the lightly rolling car out of your mind, by thought, the car that never errs,*

You being such, to drink of this drink offering, you, O ye VĒjas, and ye ṽbhus, we invoke. ṽ g. 4-36-2

It has been expressed that the *ṽbhu*- made the lightly rolling car, it means in the beginning, the coaservates showing movements came in to the existence, and with the generation of life energy, they became immortal with cell division, hence the car-cell, which has been synthesised by the *ṽbhu* never errs. As such the young and mature cells have been expressed as O ye VĒjas, and ye *ṽbhus*, due to their importance in the nature with cell division, they have been invoked.

तद्वो वाजा ऋभवः सुप्रवाचनं देवेषु विश्वो अभवन्महित्वनम्।
जिह्वी यत्सन्ता पितरां सनाजुरा पुनर्युवाना चरथाय तक्षथ॥३॥

3. *O VĒjas, ṽbhus, reaching far among the Gods this was your exaltation gloriously declared,*

In that your aged Parents, worn with length of days, ye wrought again to youth so that they moved at will. ṽ g. 4-36-3

It has been expressed that *ÿbhus*-cells, with their actions and interactions in the nature, they became the part of nature, which is their highest exaltation, in the nature the cell under go cell division and the cell again become young, the cell, which under go cell division is parent and young cells are his off-springs, hence it has been expressed symbolically that *ÿbhu*-cell, you have made your parents young again, which exhibits their functions in the nature at their own.

एकं वि चक्रं चमसं चतुर्वयं निश्चर्मणो गार्मरिणीत धीतिभिः।
अथा देवेष्वमृतत्वमानशं श्रुष्टी वाजा ऋभ्वस्तद्व उक्थ्यम्॥४॥

4. *The chalice that was single ye have made fourfold, and by your wisdom brought the Cow forth from the hide.*

So quickly, mid the Gods, ye gained immortal life, VĒjas and ÿbhus, your great work must be extolled. ÿ g. 4-36-4

The cell division has been expressed by saying that the chalice-cell, which was one, you have increased it in a fourfold manner, the cow is a symbol of nourishment, hence it has been said that for their nourishment with their wisdom, they brought the cow from the hide, it means the cells during their development synthesize the protochlorophyll from the outer wall of the cell, it has been indicated symbolically *through cow forth from the hide*. With this among the natural forces and factors, *ÿbhus* have gained the immortality.

ऋभुतो रविः प्रथमश्रवस्तमो वाजश्रुतासो यमर्जाजनन्नरः।
विभ्वतष्टो विदग्धेषु प्रवाच्यो यं दैवासोऽवथा स विचर्षणिः॥५॥

5. *Wealth from the ÿbhus is most glorious in renown, that which the Heroes. Famed for vigour, have produced*

In synods must be sung the car which Vibhvan wrought: that which ye favour, Gods ! is famed among mankind. ÿ g. 4-36-5

The heroes are young cells, as *Vibhvan*, they vigorously synthesize the food material, it has been expressed through, *Wealth from the ÿbhus*, it means the organic matter, which have been synthesized by the living beings through the cellular metabolic functions is a source of organic matter in the nature, through it, the natural forces are working in the nature, which is equally important for the mankind as they are the part of nature. It has been indicated

through God-natural factors and forces have been famed among the mankind.

स वाज्यर्वा स ऋषिर्वचस्यया स शूरो अस्तापृतनासु दुष्टरः।
स रायस्योषं स सुवीर्यं दधे यं वाजो विभ्वौ ऋभवो यमाविषुः ॥६॥

6. Strong is the steed the man a sage in eloquence, the bowman is a hero hard to bear in fight,

Great store of wealth and manly power hath he obtained whom Vaja, Vibhvan, ÿbhus have looked kindly on. ÿg. 4-36-6

It has been indicated the man is sage due to the strong life energy in him. His power is due to the cellular functions of VĒja, Vibhvan, and ÿbhus.

श्रेष्ठं वः पेशो अर्धं धायि दर्शितं स्तोमो वाजा ऋभवस्तं जुजुष्टन।
धीरांसो हि ह्य कवयो विपश्चितस्तान्व एना ब्रह्मणा वेदयामसि ॥७॥

7. To you hath been assigned the fairest ornament, the hymn of praise: VĒjas and ÿbhus for therein,

For ye have lore and wisdom and poetic skill; as such, with this our prayer we call on you to come. ÿg. 4-36-7

The ÿbhus have been praised just like as ornament of the body, through, which the body exhibits its functions with metabolism, which has been expressed as their poetic skill and wisdom, through which they synthesize the food material, it has been indicated metaphorically.

युयमस्मभ्यं क्षिषणाभ्यस्परि विद्वांसो विश्वा नर्याणि भोजना।
युमन्तं वाजं वर्षशुष्ममुत्तममा नो र्यिमृभवस्तक्षता वयः ॥८॥

8. According to the wishes of our hearts may ye, who have full knowledge of all the delight of men,

Fashion for us, O ÿbhus, power and splendid wealth, rich in high courage, excellent, and vital strength. ÿg. 4-36-8

The ÿbhus-cells have been praised for their power to give wisdom, courage and vitality with strength. It indicates that these all are related with the cellular functions and health.

इह प्रजामिह र्यिं रराणा इह श्रवो वीरवत्तक्षता नः।
येन वयं चितयेमात्यन्यान्तं वाजं चित्रमृभवो ददा नः ॥९॥

9. Bestowing on us here riches and offspring, here fashion fame for us befitting heroes.

Vouchsafe us wealth of splendid sort, O ÿbhus, that we may make us more renowned than others. ÿ g. 4-36-9

The ÿbhus-cells have been invoked to give richness with off springs and all sort of success in life, because whatever is going on in the nature and the natural resources are ultimately due to the cellular functions of the living-beings. It has been prayed that we may be more successful than the others.

e. ÿ bhus-The young cells-Power house

In the nature the young cells are most active, they synthesize the food material through photosynthesis and respiratory metabolism as metabolic products for the self and for others consumers also, hence *VĒjas and ÿbhuk-ans* have been praised for their functions.

उप॑ नो वाजा॑ अध्व॑ रमृ॑भुक्षा॑ देवा॑ यात॑ प॒थिभिर्दे॒वयानैः॑।
यथा॑ य॒ज्ञं मनु॑षो वि॒क्ष्वा॒ऽसु॑ द॒धिध्वे॑ र॒णवाः॑ सु॒दिने॒ष्वह्म॑॥१॥

1. Come to our sacrifice, VĒjas, ÿbhuk-an, Gods, by the paths which Gods are wont to travel,

As ye, gay Gods, accept in splendid weather the sacrifice among these folk of Manus. ÿ g. 4-37-1

The *VĒjas and ÿbhuk-an* have been prayed to take part in the creation sacrifice, through them the natural forces are accustomed to work in the nature, the splendid weather on the earth is due to them and sacrifice-actions and interactions among the mankind belongs to the ÿbhus-cells.

ते वो॑ ह॒दे म॒न॑से स॒न्तु य॒ज्ञा जु॒ष्टासो॑ अ॒द्य घृ॒तनि॑र्णिजो गुः।
प्र वः॑ सु॒तासो॑ हर॒यन्त॑ पू॒र्णाः क्र॒त्वे द॒क्षाय॑ ह॒र्षय॑न्त पी॒ताः॥२॥

2. May these rites please you in your heart and spirit; may the drops clothed in oil this day approach you.

May the abundant juices bear you onward to power and strength, and when imbibed, delight you. ÿ g. 4-37-2

It has been indicated that the functions, which have been their in the cells are for the cell it self, it has been prayed that the food synthesized during the day time may reach to them, the food synthesized during the day time by the green plants cells has been indicated by *may the drops clothed in oil this day approach you*, the

power of the cell function is the sap within the cell, it has been indicated by the *abundant juices bear you*, the dormant cells became active with imbibition of water, it has been indicated by *when water is imbibed, delight you*.

त्र्युदायं देवहितं यथा वः स्तोमो वाजा ऋभुक्षणे ददे वः।
जुह्वे मनुष्वदुपरासु विक्षु युष्मे सचा बृहद्विषु सोमम्॥३॥

3. Your **threefold** going near is God appointed, so praise is given you, VĒjas and ÿbhuk-ans.

So Manus- like, mid younger folk I offer, to you who are aloft in heaven, the Soma. ÿ g. 4-37-3

The ÿbhus reached to their end with the three stages of life and after aging under go decomposition, with this they became the part of nature, it has been indicated by *Your-three-fold going near is God-appointed*, it signifies that this phenomenon is a natural phenomenon. In this way the ÿbhus are like man and younger folk, they are preparing *soma* for self and for others. In this way all organisms are interconnected, so I offer my prayers to you like men, you are above the heaven due to the *Soma* within you. It has been indicated.

पीवोअश्वाः शुवद्रथा हि भूतार्यः शिप्रा वाजिनः सुनिष्काः।
इन्द्रस्य सूनो शवसो नपातोऽनु वश्चेत्यग्रियं मदाय॥४॥

4. Strong, with fair chains of gold and jaws of iron, ye have a splendid car and wellfed horses.

Ye Sons of Strength, ye progeny of Indra, to you the best is offered to delight you. ÿ g. 4-37-4

Symbolically it has been said that the ÿbhus- cells are very strong to resist in the nature, they can face adverse environmental conditions efficiently through adaptations, in this way their nature is hard like iron, the multi cellular organisms, where cells are arranged in a chain, they are just like chains of gold, and in the same manner they are interconnected. With these interconnections, they assist each other. It has been termed as fair chains of gold. *The ÿbhu's car*, cell is splendid and well fed-horses, it means the cells are having their own feeding mechanism, where cell organelles are like horse, they carry it on its path of life. In this fashion the cells are quite strong in the nature, they are progeny of *Indra*, it is a

symbolic expression for life energy, due to the movement of the charged particles in the initial stage of their development, through it they came in to the existence. Hence they have been termed as the progeny of *Indra*-electrostatic charge.

ऋभुषुक्षणो रयिं वाजं वाजिन्तमं युजम्।
इन्द्रस्वन्तं हवामहे सदासार्तममश्चिन्म॥ ५॥

5. *ṛbhuk-ans! Him, for handy wealth, the mightiest comrade in the fight,*

Him, Indra's equal, we invoke, most bounteous ever, rich in steeds. ṛg. 4-37-5

ṛbhuk-ans are newly formed cells, they are mightiest comrade in the fight of life, due to their vigorous activities in the nature with optimum condition of metabolism, hence they have been considered equal to *Indra*, the *ṛbhuk-ans* have a strong source of life energy, due to the streaming of protoplasm and metabolic reactions, which enhance the generation of life energy, it has been termed as rich in steeds.

सेदृभवो यमवथ यूयमिन्द्रश्च मर्त्यम्।
स धीभिरस्तु सनिता मेधसाता सो अर्वता॥६॥

6. *The mortal man whom, ṛbhus, ye and Indra favour with your help,*

Must be successful, by his thoughts, at sacrifice and with the steed. ṛg. 4-37-6

It has been said that the mortal man, who is favoured by the *ṛbhus* and *Indra*, he must be successful with his thoughts at sacrifice and with steed, it means it has been indicated that with the healthy body, healthy mind is there, accordingly the person will be successful in life with strong source of life energy, it has been expressed as favour of *ṛbhu* and *Indra*.

वि नो वाजा ऋभुक्षणः पथश्चितनं यष्ट्वे।
अस्मभ्यं सूरयः स्तुता विश्वा आशास्तरिषणि॥७॥

7. *O VĒjas and ṛbhuk-ans, free for us the paths to sacrifice, Ye princes, lauded, that we may press forward to each point of heaven. ṛg. 4-37-7*

It has been prayed to *VĒjas* and *ṛbhuk-ans* that make the path

of life easy, with the supply of fresh air from heaven, it has been indicated by *we may press forward to each point of heaven*.

तं नो वाजा ऋभुक्षणे इन्द्र नासत्या रयिम्।
समश्च चर्षणिभ्य आ पुरु शस्त मघत्तये॥८॥

8. *O VĒjas and ÿbhuk-ans, ye NĒsĒtyas, Indra, bless this wealth, And before other men's the steed, that ample riches may be won.*

For the welfare in the life with strong life energy, *VĒjas and ÿbhuk-ans, ye NĒsĒtyas, Indra* have been invoked, it means through the well developed functions of the new and young cells, the *NĒsĒtyas*- two reactions-oxidation and reductions will act with *Indra*-electrical charge, through which ample riches may be won, it has been indicted through the functional aspects related with *the Indra and NĒsĒtyas*.

e. Dadhikras-Life energy in the cell

The hymn of *Dadhikras*, start with you two, the two are *VĒjas and ÿbhuk-an*, they represents the gifts, the gift, which was granted by *Trasadasyu* in earlier era. It means, they are talking about the energy, which was generated earlier first in the atom. In a atom, due to the movements of the charged electrons around the nucleus the magnetic energy generates, it acts as bond energy with the electrostatic energy of the nucleus. The bond energy is responsible for the synthesis and degradation of the materialistic substances in the nature. It has been indicated here through *Trasadasyu*, who has granted it to *Puru-a*, it means the fundamental energy, which has been described in *the Puru-a sĒkta* metaphorically, with its imagination in the form of *Puru-a*. With the synthesis of the materialistic substances in the nature, *the ÿbhus* have been synthesized chemically from the materialistic substances in the nature. Accordingly, it has been said that *VĒjas and ÿbhuk-an*, you came as gift. The gift to the nature is due to the life-energy. Accordingly the living-beings exhibit their functions in the nature. Their functions have been expressed through *Dadhikras*-life energy, and *DĒdhikrĒvan* is the place of dwelling of *Dadhikra*-life energy in the human body. The life energy has been described through the metaphor as a warrior or brave king. The journey of life-consciousness in the nature is just like a battle under the

adverse conditions. Hence the *Dadhikra's* nature has been expressed as war like steed.

उ॒तो हि वा॑ दा॒त्रा सन्ति॒ पूर्वा॑ या पू॒रुभ्य॑स्त्रा॒सद॑स्युर्नि॒तो॒शे।
क्षे॒त्रा॒सां द॑दथ्यु॒र्वरा॑सां घ॒नं द॑स्यु॒भ्यो अ॒भिभू॑तिमुग्रम्॥१॥

1. From you two came the gifts in days a foretime which *Trasadasyu* granted to the *Puru-a*.

Ye gave the winner of our fields and plough-lands, and the strong smiter who subdued the *Dasyus*. *yg. 4-38-1*

It has been said that you two *VĒjas* and *ṽbhuk-an*, came as gifts, as in earlier time the gift, which was given by *Trasadasyu* to *Puru-a*, these two are new and young *ṽbhus*-cells, which are the source of nature as gift, through the *Trasadasyu* and *Puru-a*, it has been indicated that the magnetic energy, which has been generated in the Atom and in the cells is the same, due to this the atoms and the *ṽbhus* have their existence.

Ye *VĒjas* and *ṽbhuk-an* gave the winner of our fields and plough-lands, it means the *ṽbhus*-cells are the source of green fields in the nature, through the evolution from the primitive *ṽbhu*-cell, due to this the biological diversity is there, *the strong smiter who subdued the Dasyus* is life energy, who is all round strong from the cellular components, who bind it in the cell have been termed as *Dasyu*..

उ॒त वा॑जिनं॒ पुरु॑नि॒षिध्वा॑नं दधि॒क्रामु॑ ददथ्यु॒र्विश्व॑कृ॒ष्टिम्।
ऋ॒जि॒ष्यं श्ये॑नं प्रु॒षित॑प्सुमा॒शुं च॒कृत्य॑म॒र्यो नृ॑पति॒ न शूर॑म्॥२॥

2. And ye gave mighty *Dadhikras*, the giver of many gifts, who visiteth all people,

Impetuous hawk, swift and of varied colour, like a brave King whom each true man must honour. yg. 4-38-2

And ye gave mighty *Dadhikras*, it means with the evolution from the *VĒjas* and *ṽbhuk-an*, the *Dadhikra*-life energy came in to the existence as a vigorous courser, where *Dadhikras* in plural form represents the biological diversity with life, the gift of the nature is due to the living- beings, which are the source of natural forces and factors, the presence of life energy in the living-beings has been expressed by saying, *who visits all people*, the life forms with having multicoloured structures are due to the presence of life

energy, which carry forward the cell with evolution like a brave king, hence the life energy is swift and strong having a rapid insight with its various forms and colours among the living-being, the life energy must be honoured by all.

यं सीमनु॑ प्रवतेव॒ द्रवन्त॑ विश्वः॑ पूरुर्म॑दति॒ हर्षमाणः॑।
प॒द्भिर्गृ॑ह्यन्त॑ मेधयुं॒ न शूर॑ रथतु॒रु॑ वा॒तमिव॑ ध्रजन्तम्॥३॥

3. Whom as 'twere down a precipices and his heart rejoices,
Springing forth like a hero fain for battle, whirling the car and
flying like the tempest. ि g. 4-38-3

The speedy motion of the life energy as a vigorous courser in the nature has been compared by saying that the *Dadhikra*-life energy has speed like water, which 'twere down from the clouds. He is like a warrior, who is going on war with joy like a hero, who on his car-cell body, flying like tempest wind.

यः स्मरु॑न्ध्या॒नो ग॒ध्या॑ स॒मत्सु॑ स॒नुत॑स्त्ररति॒ गोषु॑ गच्छन्।
अ॒वि॒कृ॑जो॒ वि॒दथा॑ नि॒चि॒क्य॑न्ति॒रो अ॑रति॒ पर्या॑प॒ आयोः॑॥४॥

4. Who gaineth precious booty in the combats and moveth,
winning spoil among the cattle;

Shown in bright colour, looking on the assemblies, beyond the
churl, to worship of the living. ि g. 4-38-4

As a warrior in the battle of life, it gains precious booty, it means during the period of life, the cellular body-*ṛbhus*-cells synthesize the food materials with development, it has been expressed as precious booty, and which move among the cattle as winning spoil, it means it forms the food chain and food web in the nature. Due to the feeding mechanism, the living beings shows bright colours and the group of communities, over looking the churl, they worship the living. It means the life energy avoids the non-living and it worships the living-beings with life.

उ॒त स्मै॑न॒ वस्त्र॑मथि॒ न ता॒युम॑नु॒ क्रोश॑न्ति॒ क्षितयो॑ भ॒रैषु॑।
नी॒चा॒र्य॑मानं॒ जसु॑रि॒ न श्ये॑नं॒ श्रव॑श्चाच्छा॒ पशु॑म॒र्च्य॑ यू॒थम्॥५॥

5. Loudly the folk cry after him in battles, as 'twere a thief who
steals away a garment;

Speeding to glory, or a herd of cattle, even as a hungry falcon
swooping downward. ि g. 4-38-5

Through the metaphors the importance of the life energy has

been indicated, that as in the battle the folk cry to see the *Dadhikras*-living enemies for the sake of life. In the same manner just as to see a thief, who steals away a garment and man cry. In a similar way when a hungry falcon swooping downward, to see him the birds cry. In the same fashion the man cry in the herd of cattle for glory. It has been indicated through the metaphors that all the functions of the living beings are for the life energy.

उ॒त स्मा॑सु प्र॒थमः॑ सं॒रिष्य॑न्नि॒ वैवे॑ति॒ श्रेणि॑भ्यो॒ रथी॑नाम्।
स्त्रजं॑ कृ॒ण्वानो॑ ज॒न्यो न॒ शुभ्वा॑ रेणु॒ रेहि॑हत्कि॒रणं द॑द॒द्यान्॥६॥

6. And fain to come forth first amid these armies, this way and that with rows of cars he rushes,

Gay like a brides man, making him a garland, tossing the dust, champing the rein that holds him. ÿ g. 4-38-6

The movement of the life energy is like a warrior, who is dressed beautifully like a bride's man. The life energy is he, who appear first just like the fain, who goes first in the race of armies, and with the rows of cars he rushes, he is like a bride's man, they make him garland and tossing the dust, move forward champing the rein that holds him.

It means during the journey of life, the life energy has been dressed with cell body, in which it appears first as a warrior in the battle of life. His companion are cell organelles and parts of the body, they are rushing with him like the rows of car. The life energy move straight forward like a hero, the cellular body is like a rein, the physical cell body holds him. It has been indicated through the metaphor.

उ॒त स्य॑ वा॒जी स॒हुङ्ग॑रि॒कृता॒वा शु॒श्रूष॑माणस्त॒न्वा स॒मर्ये॑।
तु॒रं य॒तीषु॑ तु॒र्यञ्च॑ जि॒ज्योऽधि॑ भ्रु॒वोः कि॑रते॒ रेणु॑मृ॒ञ्चन्॥७॥

7. And that strong Steed, victorious and faithful, obedient with his body in the combat,

Speeding straight on amid the swiftly pressing, casts o'er his brows the dust he tosses upward. ÿ g. 4-38-7

The victorious life energy as strong steed is faithful and obedient with his body in the battle of life. Accordingly the life energy move straight forward with speed among the obstacles just like a warrior move forward with tossing the dust.

उ॒त स्मा॑स्य त॒न्यतो॑रि॒व द्यो॑र्ऋ॒घाय॑तो अ॒भियु॑जो भय॒न्ते।
य॒दा स॒हस्र॑म॒भि पी॒मयो॑धो॒र्धुर्व॑र्तुः स्मा भवति भी॒म ऋ॒जं॑न्॥८॥

8. And at his thunder, like the roar of heaven, those who attack tremble and are affrighted;

For when he fights against embattled thousands, dread is he in his striving; none may stay him. y g. 4-38-8

The life energy is like warrior, who fight against embattled thousands, his thunder is like roar of heaven and those, who attack him tremble and are affrighted. It means during the journey of life, the life energy resists against the natural factors, which inhibit or bind it in the cell, the individual's actions in the life are related with the life and for the life. The life energy is so strong that none may stay against him in his efforts.

उ॒त स्मा॑स्य प॒नय॑न्ति ज॒ना जू॑ति कृ॒ष्टिप्रो॑ अ॒भिभू॑तिमा॒शोः।
उ॒तैर्मा॑हुः स॒मिथे॑ वि॒यन्तः॒ परा॑ दधि॒क्रा अस॑त्स॒हस्रैः॑॥९॥

9. The people praise the swiftness of this fleet Steed who giveth men abundance.

Of him they say when drawing back from battle. Dadhikras hath sped forward with his thousands. y g. 4-38-9

The people praise the swiftness of the Dadhikra-life energy as fleet steed, It give many things in abundance. It has been said that when he draws back from battle, Dadhikras hath sped forward with his thousands it means the life energy sped forward with his thousands in its various forms, and the people think that enemies have been killed. It has been indicated that life energy is eternal.

आ दधि॒क्राः श॑र्व॒सा पञ्च॑ कृ॒ष्टीः सूर्य॑इ॒व ज्योति॑षा॒पस्त॑तान।
स॒हस्र॑साः श॒तसा॑ वा॒ज्यवा॑ पृ॒णक्तु॑ म॒ध्वा स॒मिमा॑ वचो॒सि॑॥१०॥

10. Dadhikras hath o'erspread the Fivefold People with vigour, as the Sun lightens the waters,

May the strong Steed who winneth hundreds, thousands, requite with sweetness these my words and praises. y g. 4-38-10

It has been said that Dadhikras- life energy has been spread over the fivefold people, it means over five types of the living-beings as a vigorous courser. The living beings have been classified in to the five types of animals in general, because they act as food material for each other as a part of nature. The life energy has been

compared with the evaporation of water, it has been indicated by *the Sun lightens the water with rising of the sun*. It has been indicated that life energy disappears from the body just like the water evaporates from the surface. It has been prayed that the strong steed-life energy is the winner of hundreds and thousands of obstacles in the battle of life, accept my prayers and blessed me with sweetness in life.

f. Stallion *DĒdhikrĒvan* -life energy in the human body

After indication that life energy has been spread over in all the living beings, the *Dadhikras*-life energy has been praised as Stallion *DĒdhikrĒvan*, which is the dwelling place of life energy in the physical world in an advanced form.

आशुं दधि॒क्रां तमु॒ नु ष्ट॑वाम॒ दिव॑स्पृथि॒व्या उ॒त च॑र्किराम।

उ॒च्छन्ती॑र्मा॒मुष॑सः॒ सूद॑यन्त्वति॒ विश्वा॑नि॒ दुरि॑तानि॒ पर्ष॑न्॥१॥

1. *Now give we praise to Dadhikras the rapid, and mention in our laud the Earth and Heaven.*

May the Dawn flushing move me to exertion, and bear me safely over every trouble. 4-39-1

The Earth and Heaven have been addressed, that now we will praise *Dadhikras*-life energy, loudly with rapid mention of his names with praise. The life energy-consciousness may bear us and grant safety from all the troubles.

म॒हश्च॑र्क॒र्म्यव॑तः॒ क्रतु॑प्रा दधि॒क्राव्णः॒ पुरु॑वार॒स्य वृ॑ष्णः।

यं पुरु॑भ्यो दी॒दिवांसं॒ नानि॑ द॒दथु॑र्मि॒त्रावरु॑णा॒ ततु॑रिम्॥२॥

2. *I praise the mighty Steed who fills my spirit, the Stallion DĒdhikrĒvan rich in bounties,*

Whom, swift of foot and shining bright as Agni, ye, Varuṣa and Mitra, gave to Puru-a. j g. 4-39-2

I praise the mighty steed- life energy, who fills my spirit, the stallion *DĒdhikrĒvan* is rich and kind, he is swift and shining bright as *Agni*, it has been indicated with the praise of life energy that life energy is just like a swift Courser and kind, he is like *Agni*-energy, which has been granted by *the Mitra and Varuṣa to Puru-a*-fundamental energy.

It has been indicated that life energy exists in the body just like mighty steed, the life energy fill up the body with spirit, and the *DĒdhikrĒvan*-life energy carry it forward like a stallion. The life energy-consciousness is shining in the body like *Agni* through the metabolic energy. The life energy has been given by the *Mitra* and *Varuṣa* to *Puru-a*-fundamental energy. where the *Varuṣa* is mass energy and *Mitra* represents visible light, they together with actions and interactions generates the *Puru-a*-life energy in the cell, hence it has been expressed that it has been given by *Mitra* and *Varuṣa* to *Puru-a*-fundamental energy.

यो अश्वस्य दधिक्लाव्यो अकारित्समिद्धे अग्ना उषसो व्युष्टौ।
अनांसं तमदितिः कृणोतु स मित्रेण वरुणेना सजोषाः ॥३॥

3. Him who hath honoured, when the flame is kindled at break of dawn, the Courser *DĒdhikrĒvan*,

Him, of one mind with *Varuṣa* and *Mitra* may *Aditi* make free from all transgression. ṽ g. 4-39-3

It has been said that *DĒdhikrĒvan* should be honoured, when flame is kindled at the break of dawn, the *DĒdhikrĒvan*-Courser. The life energy should be honoured with birth, it has been indicated by saying that when the flame is kindled at break of dawn, it means as with the sun rise, when the flame is kindled with sun light in the morning and the day move forward towards sunset, in the same fashion the Courser- *DĒdhikrĒvan* appears with life in the body with birth, which carry the body towards its end in the nature with death, the movement of life energy in the body has been associated with the physical body and light, hence it has been said that he is of one mind along with *Varuṣa* and *Mitra*, it has been prayed that *Aditi*-nature make us free from all sins, through the *Varuṣa*-mass energy, physical cellular body has been indicated, and *Mitra*- light is the source of food in the nature, they are exhibiting their functions under the *Aditi*-nature in an integrated manner just like one mind in the body.

दधिक्लाव्यं इष ऊर्जो महो यदमन्महि मरुतां नाम भद्रम्।
स्वस्तये वरुणं मित्रमग्निं हवामह इन्द्रं वज्रबाहुम्॥४॥

4. When we remember mighty *DĒdhikrĒvan* our food and strength, then the blest name of *Maruts*,

Varuṣa, Mitra, we invoke for welfare, and Agni, and the thunder-wielding Indra. ṽ g. 4-39-4

How the human body is moving forward towards its course of life. It has been indicated that when we remember mighty *DĒdhikrĒvan*, which is our food and strength in the body, then the best name to bless us is *Maruts*, it means along with life energy, *Maruts* - rain clouds are the source of water, they must be remembered. it means the water is a source of life energy, through the streaming of the sap, which bless us with life along with *Varuṣa*-mass energy of the cells, *Mitra*-light, and *Agni*-metabolic energy are life resource for welfare of the body. *The Indra*-electrical charge manage their functions in the body, it has been indicated.

इन्द्रमिवेदुभये वि ह्वयन्त उदीराणा यज्ञमुपप्रयन्तः।
दधिक्लामु सूदनं मर्त्यार्थं ददयुर्मित्रावरुणा नो अश्रम्॥५॥

5. *Both sides invoke him as they call on Indra when they stir forth and turn to sacrificing.*

To us have Varuṣa and Mitra granted the Courser Dadhikras, a guide for mortals. ṽ g. 4-39-5

They-mortals, invoke from both sides in every manner *Indra*, when they turn towards sacrifice. It means during the origin of life energy, the mortal inorganic charged ions-positive and negative, when they have initiated the actions and interactions, they call on *Indra*. It means they have under gone electrical charge activities, with their opposite charges. It has been indicated by “*when they stir forth and turn to sacrificing, both sides invoke Indra*”, it is an indication of the activities of oppositely charged particles.

It has been said that *Dadhikras*-Courser is like a guide for the mortals during the journey of their life, it has been granted by the *Varuṣa*, and *Mitra* as Courser-*Dadhikra*. *The Varuṣa*, is mass energy of the inorganic substances and *Mitra* is visible light. They have provided the initial conditions for the origin of life energy, it has been indicated by saying that *To us have Varuṣa and Mitra granted the Courser Dadhikras- life- energy.*

दधिक्लाव्यो अकारिषं जिष्णोश्चस्य वाजिनः।
सुरभि नो मुखा कर्त्तुं ण आर्यूषि तारिषत्॥६॥

6. So have I glorified with praise strong DÈdhikrÈvan, conquering Steed.

Sweet may he make our mouths; may he prolong the days we have to live. ÿ g. 4-39-6

I have glorified with praise the strong DÈdhikrÈvan-life energy² winning steed in the race of life, he may grant us sweet tongue and long life.

XL DÈdhikrÈvan

दधि॒क्राव्ण॑ इ॒दु नु च॑र्कि॒राम॑ वि॒श्वा इ॒न्मा॒मुष॑सः॒ सूद॑यन्तु।
अ॒पा॒म॒ने॒रुष॑सः॒ सूर्य॑स्य॒ बृ॒ह॒स्प॒ते॒रा॒ङ्गिर॑सस्य॒ जि॒ष्णोः॥१॥

1. Let us recite the praise of DÈdhikrÈvan: may all the Morning move me to exertion;

Praise of Lord of Waters, Dawn, and Agni, B,haspati Sons of ¶ngiras, and SÊryā. ÿ g.4-40-1

Let us praise DÈdhikrÈvan:- life energy-consciousness in the body that he may inspire us to work all the morning. It means with birth during the course of life, DÈdhikrÈvan may give us vitality for work with good health. It has been indicated by saying *may all the Morning move me to exertion*; the praise of lord of waters, Dawn, and Agni, B,haspati Sons of ¶ngiras, and SÊryā. Through this it has been indicated that DÈdhikrÈvan:- life energy in the body is the lord of all, their functions in the body are due to the life energy-consciousness, although they all are the life resources.

स॒त्वा भ॑रिषो ग॒विषो॑ दु॒व॒न्य॒स॒च्छ॒व॒स्यादि॑ष उ॒ष॒स॒स्तु॒रण॑य॒सत्।
स॒त्यो द्र॒वो द्र॒वरः॑ प॒तङ्ग॑रो दधि॒क्रावे॑ष॒मूर्ज॑ स्व॒र्जन॑त्॥२॥

2 .Brave, seeking war and booty, dwelling with the good and with the swift, may he hasten the food of Dawn.

May he the true, the fleet, the lover of the course, the bird² like DÈdhikrÈvan, bring food, strength, and light. ÿ g. 4-40-2

The life energy- consciousness has been termed as brave, seeking war and booty as a warrior, during the course of life cycle, the life energy may accelerate the production of food material as indicated by *may he hasten the food of Dawn*, it means the development of the body is due to the presence of life energy in the body, which carry forward the body towards its destiny in the

nature as a warrior, the development and synthesis of the body is his booty during the war of life, he inter acts with others as a good and swift.

The food of dawn, it means, birth of the physical body is like Dawn- sun rise, and as the day move forward towards sun set, where sun, accelerate the movement of the day towards sun set, in the same fashion, life energy- consciousness accelerates the development of the body with nourishment towards its end in the nature, just like the day move towards the sun set. It has been indicated by the food of Dawn.

The life energy has been described as true, fleet and lover of course, It means the life energy-*DĒdhikrĒvan*, dwelling in the body, carries forward the body on the path of life, where life energy is lover of body, which is flying just like bird in nature, he may feed us with food, strength and light, it means the functions of the body are due to the life energy ² *DĒdhikrĒvan* The birth of the body with life energy has been indicated through the metaphors.

उत स्मास्य द्रवतस्तुरण्यतः पूर्णं न वेरु वाति प्रगर्धिनः।

श्येनस्यैव ध्वजतो अङ्कसं परि दधिक्लाव्णः सहोर्जा तरित्रतः ॥३॥

3. *His pinion, rapid runner, fans him on his way, as of a bird that hastens onward to its aim,*

And, as it were a falcon's gliding through the air, strikes DĒdhikrĒvan's side as he speeds on with might. ĩ g. 4-40-3

The life energy has been described metaphorically as rapid runner on the path of life with his pinion and fans, who carry forward him with speed, it means the pinion is the symbol of food inhalation and fans- rapidly carry him with speed on the path of life with nourishment, it is just like a bird, who is flying rapidly towards his destination.

During the journey, when life energy moving rapidly towards its destination. Just like falcon, who is gradually coming down and some one strikes to bring him in a specific position, in the same way natural factors strikes *DĒdhikrĒvan* -life energy, from all sides to check his speed, through ageing, it has been indicated by *strikes DĒdhikrĒvan's side*- the path of life energy.

With birth the body move forward rapidly towards maturity and

old age, it has been indicated metaphorically through the falcon.

उ॒त स्य॒ वा॒जी क्षि॒पणिं॑ तु॒रग्य॑ति ग्री॒वायां॑ ब॒द्धो अ॒पि क॒क्ष आ॒सनि॑।
क्र॒तुं दधि॒क्रा अनु॑ संत॒वीत्व॑त्थाम॒ङ्गुलं॑ स्यन्वा॒पनी॑फणत्॥४॥

4. Bound by the neck and by the flanks and by the mouth, the vigorous Courser lends new swiftiness to his speed.

Drawing himself together, as his strength allows, Dadhikras springs along the windings of the paths. yjg. 4-40-4

It has been indicated that life energy is bound in the body, through neck, flanks and by the mouth, it means the existence of the life energy in the body depends on the food, he eat, through mouth and neck, with development of flesh, which are the symbols of nourishment, through which the body became healthy, they bound the life energy in the body, with the nourishment, the vigorous Courser- DĒdhikrĒvan, have new swiftiness and speed, which work together with the body up to a limit, up to which the life energy, allows the body to exhibit its function, then, Dadhikras the life energy move rapidly towards its destiny in the nature with winding up its ways through ageing of the concern organs.

It has been indicated that life energy bound in the body through nourishment, and the life-energy disappear gradually with ageing.

हंसः शु॒चि॒षद्व॒सुं र॒न्तरि॑क्ष॒सद्धो॑ता वे॒दिष॑दतिथिर्दु॒रोण॑सत्।
नृ॒षद्व॒रस॑द॒तस॑द्व्यो॒मस॑द॒ब्जा गो॒जा ऋ॒तजा॑ अ॒द्रिजा॑ ऋ॒तम्॥५॥

5. The Haṣṣa homed in light, the Vasu in mid-air, the priest beside the altar, in the house the guest,

Dweller in noblest place, mid men, in truth, in sky, born of flood, kine, truth, mountain, he is holy law. yjg. 4-40-5

The life energy-consciousness has been described metaphorically just like a Haṣṣa homed- dwelling in the light, just like the Vasu in mid air, and just like a priest beside the altar. It means with their existence, the respective places are known, in the same fashion the body is known with life energy, who is a guest dwelling in the body.

The life energy has been described as holy law, dwelling in noblest places, in men, in truth, in kine and in the mountains. Due to the life energy, the sky has its existence. Born of floods, it indicate that the creation came in to the existence from the clouds

of the fundamental charged particles, the clouds have spread in the different directions like floods, due to this the creation has its existence.

Through this it has been indicated that the creation has come in to the existence from the fundamental energy through the floods of fundamental particles, he is dwelling at all places, It has been expressed by saying that he is holy law.

12. Creation A System the Hymn of the Supreme - *AsyavÈmġya SÊkta*

Most of the knowledge, which is deeply concern with the processes of the creation, through which the creation came in to the existence has been expressed through the metaphoric riddles and their answers are also in the form of metaphoric riddles. ĳ g. 1-164 is having 52 verses. It has almost full knowledge of the creation. Vedic seers, under the laws of phonetics have developed the language code in the form of metaphors and riddles, so that the maximum information may be coded in the hymns. The words are only simple symbols to stimulate the thought about related phenomenon. It is also evident from the fact that during the compilation of the hymns to save a single syllable was equivalent to the celebration as that the birth of a male child. The composer of this *sÊkta* is seer *Dirghtamas*. It gives the idea of an intellectual discussion during the conference, which is known as *BrÊhmodhya CarcÊ* in the Atharvaveda, it has been divided in two hymns with 50 verses with new addition with change in sequence of the verses in the 9th book.

The questions have been raised just like a head of the Institute ask the question to test the knowledge of the students regarding the creation indicating a particular phenomenon. The answers have been given in a similar fashion. The *sÊkta* reveals the secret of the creation and life on the earth systematically.

The Solar System in the Riddles

अस्य वामस्य॑ पलितस्य॒ होत॑स्तस्य॒ भ्राता॑ मध्य॒मो अस्त्य॑क्षः ।

तृतीयो॑ भ्राता॑ धृत॒पृष्ठो अ॒स्यात्रा॑पश्यं॒ वि॒श्वं सृ॒जत॑ पु॒त्रम् ॥१॥

Of this pleasant (vama) hoary invoker- of him the brother is the midmost (a,na); his third brother is Ghee backed (Gh,t p,—ha); there I saw the seven sons of chief of the world ĳ g. 1-164-1.

The first riddle gives the idea about creation that the supreme fundamental energy, which has been invoked in the creation sacrifice, guarded by him (sun), his middle brother is *Asnaha*- air and the third brother is *Gh,t p,—ha*- organic matter. Here I have

seen seven sons of the *Vi,,vapatim*-The chief of the world. ÿ g.1-164-1,

It has been indicated that guarded by the supreme is the sun in the heaven, his brother in the middle is air and his third brother is on the earth *Gh, tap, —ha* the seven sons are seven rays of the sun, who feed the creation on the earth through photosynthesis., Accordingly it has been indicated that sun is the main source of energy on the earth, the middle atmosphere is the second centre, who feed the creation through ionosphere processes, his third brother *Gh, t p, —ha*, who feed the creation on the earth through the organic matter synthesized through photosynthesis, the whole play on the earth is due to the conversion of light energy in to the chemical energy through photosynthesis, hence the seven rays have been termed as seven sons of the *Vi,,vapatim*-The chief of the world. In this way the Vedic seers have drawn the attention towards the three main centres of the creation, sky (sun), air- atmosphere and plants on the earth.

सप्त यू॒जन्ति॑ रथ॒मेक॑चक्र॒मेको॑ अ॒श्वो॑ वहति सप्त॒नामा॑।

त्रि॒नाभि॑ चक्र॒मजर॑म॒नुर्व॑ यत्रे॒मा वि॒श्वा भुव॑नाधि॒ तस्थुः॑॥२॥

Seven harness (yuj) a one wheeled chariot; one horse, having seven names, draw (vah) it; of three naves (is) the wheel unwasting, unassiled where on stand all these existence. ÿ g. 1-164-2

The seven harness of one wheeled chariot are seven planets of the solar system, the solar system has been termed as one wheeled chariot. One horse having seven names is sun, which has seven visible rays and is responsible for the working of the solar system. The three naves are sun in the sky, who feed the creation through its nuclear reactions at its surface, the second nave of the creation is the middle atmosphere, where, magnetosphere processes feed the creation through ionization. The third nave is on the earth, where plants nourish the living-beings at its surface through their autotrophic nature. On these three naves (centre) the creation has its existence these three centres are working without rest.

इ॒मं रथ॑मधि॒ ये सप्त॑ तस्थुः सप्तच॑क्रं सप्त व॒हन्य॑श्वाः।

सप्त॑ स्वसारो अ॒भि सं न॑वन्ते यत्र॒ गवां॑ निहिता सप्त॒ नाम॑॥३॥

The seven they stand on this chariot- seven horses draw it, seven wheeled; seven sisters utter songs of praise together, in whom the names of the seven cows are treasured. yṅ. 1-164-3

The solar system has been termed as a chariot, where seven planets of the solar system drive the solar system through their movement around the sun as horse, the planets are rotating at their axis, due to this they have magnetic field and the magnetosphere around them, which is responsible for the movement of the solar system, hence they have been termed as seven wheels of the chariot. The seven sisters are seven visible rays, who feed the living beings like a cow on the earth, through the photo-synthesis, due to this the world of living beings came in to the existence through evolution, where human beings are highly evolved . The human beings utter praise songs which has seven syllables.

During the assembly of the intellectuals in a very respectable manner the questions have been raised regarding the creation system that how it is sustained?

को ददर्श प्रथमं जायमानमस्थन्वन्तं यदेनस्था बिभर्ति।

भूम्या असुरसृगात्मा क्वस्वित्को विद्वांसमुप गात्रष्टुमेतत्॥४॥

Who hath beheld him as he sprang to being, seen how the boneless One supports the bony?

Where is the blood of earth, the life, the spirit? Who may approach the man who knows, to ask it? yṅ. 1-164-4

The questions have been raised regarding the creation system that how it is sustained? Who has seen the process of creation? How the boneless one supports the bony? Where is the blood of earth, the life, the spirit?

पाकः पृच्छामि मनसाविजानन्देवानामिना निहिता पदानि।

वृत्से वृष्कयेऽधि सृप्त तन्नुन्वि तलिरे कवय ओतवा उ॥५॥

Unripe in mind, in spirit undiscerning, I ask of these the God's established places; For up above the yearling Calf the sages, to form a web, their own seven threads have woven. yṅ. 1-164-5

The other question about the creation that where is the station of the natural forces under which the yearly calf (the living

creatures on the earth) weave a web through its own seven threads.

The question regarding the God's established places is thought provoking. It has been indicated that the living-beings are just like sages, who weave the food webs in the nature by their own functions. The person, who has raised the question know the cause of food chain and food webs in the nature, but he want to know the god's established places, through which the creation is working as a system.

अचिंक्त्वाञ्जिकितुषष्टिदत्र कवीनृच्छामि विद्वने न विद्वान्।

वि यस्तुस्तम्भ षळिमा रजांस्यजस्य रूपे किमपि स्वदेकम्॥६॥

I ask unknowing, those who know, the sages, as one all ignorant for sake of knowledge. What was that One who in the Unborn's image hath established and fixed firm these world's six regions. yṅ. 1-164-6

The other question regarding the creation is also thought provoking. It means the person, who has raised the question knows that the unborn fundamental energy has established and fixed firm the world's six regions. He is asking about the nature, and image of the unborn energy, under which the creation is working as a system. इह ब्रवीतु य ईमुङ्ग वेदास्य वामस्य निहितं पदं वेः।

शीर्ष्णः क्षीरं दुहते गावो अस्य वृत्रि वसाना उदकं पदापुः॥

Let him who truly knows (here) tell the set down track of this pleasant bird; the kine extract milk from his head; clothing themselves in a wrap, they drunk water with the foot.yṅ. 1-164-7

The question about the lovely bird's securely founded station is also a thought provoking question for the thinkers. The person, who has asked the question, is well acquainted with the photosynthesis. The pleasant bird is sun, from where the kine extract milk from his head. It indicates about the visible solar rays (VIBGYOR), which are coming on the earth's surface from the head of the sun. These rays are trapped by the plants for the photosynthesis, which acts as milk-food (*k-hir*) for the living-beings hence the visible rays of the sun have been compared with the milk and plants as kine. The absorption of water by the green plants has been indicated through the drinking of water with the foot, they represent root system. He has asked the question to his pupil about the source of the factors,

which are responsible for photosynthesis. j g.-164-7

The questions which have been raised in the stanza from 4 to 7, their answers have been given systematically.

को ददर्श प्रथमं जायमानमस्थुन्वन्तं यदनुस्था बिभर्ति।

भूम्या असुरसृगात्मा क्वस्वित्को विद्वांसमुप गात्रष्टमेतत्॥४॥

Who hath beheld him as he sprang to being, seen how the boneless One supports the bony?

Where is the blood of earth, the life, the spirit? Who may approach the man who knows, to ask it? j g. 1-164-4

The questions have been raised regarding the creation system that how it is sustained? Who has seen the process of creation? How the boneless one supports the bony? Where is the blood of earth, the life, the spirit?

1. Who has seen him as he sprang to being?

Its answer has been given through the metaphor of the mother, father and calf.

The supreme fundamental energy has been designated as father of the creation the micro nature, which came in to the existence in the early stages with the formation of the fundamental particles, it has been termed as mother,

माता पितरमृत आ बभ्राज धीत्यग्रे मनसा सं हि जग्मे।
सा बीभ्रत्सुर्गर्भरसा निविद्धा नमस्वन्त इदुपवाकर्मयुः॥८॥

The Mother gave the Sire his share of Order: with thought, at first she wedded him in spirit.

She the coy Dame, was filled with dew prolific: with adoration men approached to praise her. j g. 1-164-8

During the pre-cosmic conditions the mother-nature was in dormant condition along with the Supreme-fundamental energy, *she wedded him in spirit and the coy Dame, was filled with dew prolific*, it means the mother-nature became active with the formation of the charged particles, which is the first seed of creation and the developing creation has been termed as calf.

युक्ता मातासौद्धुरि दक्षिणाया अतिष्ठद्दर्शो वृजनीष्वन्तः ।
अर्षामेद्वत्सो अनु गामपश्यद्विश्वरूप्यं त्रिषु योजनेषु॥९॥

Yoked was the Mother to the boon Cow's car-pole: in the dank rows of cloud the Infant rested.

Then the Calf lowed, and looked upon the Mother, the Cow who wears all shapes in three directions. j g. 1-164-9

The formation of the ions in the region of ionosphere has been termed as cow's car-pole. The ions from the ionosphere feed the creation like a cow. The cloudy atmosphere of the ions in the upper atmosphere has been termed as *infant rested*, which when came on the lower surface, they get converted in to atoms and the molecules, it has been termed as "*the calf lowed* and looked upon the Mother-nature, it means in this manner the infinite-nature, who has all different shapes in the three regions sky, Atmosphere and the earth came in to the existence.

तिस्त्रो मातृस्त्रीन्पितृन्बभूवदेकं ऊर्ध्वस्तस्थौ नेमव ग्लापयन्ति।
मुन्नयन्ते दिवो अमुष्यं पृष्ठे विश्वविदं वाचमविश्वमिन्वाम्॥१०॥

Bearing three Mothers and three Fathers single he stood erect: they never make him weary.

There on the pitch of heaven they speak together in speech all knowing but not all - impelling. Rg. 1-164-10

The three regions- the sun in the sky, middle atmosphere and earth, where the activity of the nature is at its peak, these regions have been termed as three mother and three father, because the fundamental particles, ions, atom and the molecules have been synthesized in the presence of the fundamental energy but the fundamental energy remains unaffected and the seers talk on the earth that we know all this but it is not sufficient.

2. How the boneless One supports the bony?

The answer of this question has been given that the boneless nature supports the creation through the *SEŚvatsar-Kala*-year, months and the seasons occurring during the year. It is the wheel of order.

The wheel of order

द्वादशारं नृहि तज्जरायुर्वर्ति चक्रं परि द्यामृतस्य।
आ पुत्रा अग्ने मिथुनासो अत्र सप्त शतानि विशतिश्च तस्थुः ॥११॥

Formed with twelve spokes, by length of time, un-weakened,

rolls round the heaven this wheel of during order.

Herein established, joined in pairs together, seven hundred Sons and twenty stand, O Agni. Rg. 1-164-11

The *sÈŠ vatsar* ²*KÈla*- year, which have twelve months with seven hundred and twenty days and nights (three hundred and sixty days) This *KÈla*-Time is rolling round the heaven. It is related with the rotation of the earth around the sun and movement of the earth at its axis. It is the wheel of order.

The Sun and Moon

पञ्चपादं पितॄं द्वादशाक्रतिं दिव आहुः परे अर्धे पुरीषिणम्।

अश्वमेअन्य उपरे विचक्षणं सप्तचक्रे षळर आहुरपितम्॥

They call him in the farther half of heaven the Sire five ²footed, of twelve forms, wealthy in watery store.

These others say that he, God with farseeing eyes, is mounted on the lower seven wheeled, six -spoked car. Rg.1-164-12

The seers have expressed that about the wheel of order there are other views are also there. The twelve months of seven hundred and twenty days and night having five seasons (when rainy season of four month) with watery store, it means the time related with the moon has been indicated. *Rg.1-164-12a*

These others say that the wheel of order is having six seasons with the seven rays of sun, it means the time related with the movement of the sun at its axis has been indicated, where six seasons have two month each. *Rg. 1-164-12b*

पञ्चारे चक्रे परिवर्तमाने तस्मिन्ना तस्थुर्भुवनानि विश्वा।

तस्य नाक्षस्तप्यते भूरिभारः सुनादेव न शीर्यते सनाभिः॥१३॥

Upon this five-spoked wheel revolving ever all living creatures rest and are dependent.

Its axle, heavy-laden, is not heated: the nave from ancient time remains unbroken. Rg. 1-164-13

The five seasons, the year will have five seasons when the rainy season is considered as of four month and rest four season of two month each. This wheel of the year is related with the moon is eternal on which all creatures are dependent.

सनेमि चक्रमजरं वि वावृत उतानायां दश युक्ता वहन्ति।

सूर्यस्य चक्षु रजसैत्यावृतं तस्मिन्नापिता भुवनानि विश्वा ॥१४॥

The wheel revolves, unwasting, with its felly: ten draw it, yoked to the far-stretching car-pole.

The Sun's eye moves encompassed by the region: on him dependent rest all living creatures. y g. 1-164-14

It has been indicated here that the wheel of year related with the sun is without ageing, which spread in all the ten directions along with it sun's eye move encompassed by the region, on him all the creatures have been dependent.

साकंजानां सप्तथमाहरेकजं षळिष्टमा ऋषयो देवजा इतिङ्ग।

तेषां-मिष्टानि विहितानि धाम्शः स्थात्रे रैजन्ते विकृतानि रूपशः ॥१५॥

Of the co-born they call the seventh single ²born; the six twin pairs are called y-is, Children of Gods.

Their good gifts sought of men are ranged in order due and various in their form move for the Lord who guides. y g. 1-164-15

It has been indicated here about the intercalary month and an extra single season as seventh season of one month. When the year is considered as of three hundred and sixty days

Actually the year has three hundred and sixty five days, the remaining five days in due course of time has been shown as extra intercalary month with an extra season of one month.

Through the *SĒṣ vatsar KĒla*-year and the seasons related with the movement of the earth, sun and the moon. It has been indicated that life on the earth is influenced by these at a length.

Through the yearly course of the sun and the seasons how the nature exhibits its functions, it has been indicated in the stanza 16-17, through the metaphor of mother ² nature as cow and her calf as the symbol of the creation

It has been indicated that the creation came in to the existence from the charged-particles. The system is working under *KĒla*- time and the seasonal variations.

The Nature as Cow

स्त्रियःसुतीस्तां उ मे पुंस आहुः पशु यदक्षुण्वान्न वि चेतदुच्यः।

कुर्विर्यः पुत्रः स ईमा चिकेतु यस्ता विजानात्स पितुष्वितासत्॥१६॥

They told me these were males though truly females: he who hath eyes sees this, the blind discerns not.

The son who is a sage hath comprehended: who knows this rightly is his father's father. ÿ g. 1-164-16

It has been expressed earlier in the beginning that the unborn fundamental energy has established and fixed firmly the world's six regions. The nature of the fundamental energy has been revealed that the fundamental energy is only one, but people grasp it, according to their mentality, some consider it male and some consider it female.

The person, who knows it its real nature, he became his father's father in knowledge. It is a thought provoking answer of the question raised about the nature of the unborn fundamental energy.

अवः परेण पुर एनावरेण पदा वृत्सं बिभ्रती गौरुदङ्गस्थात्।
सा कङ्क्रीची कं स्विदर्थं परागात्कृत् स्वित्सूते नहि यूथे अन्तः॥१७॥

Beneath the upper realm, above this lower, bearing her calf at foot the Cow hath risen.

Wither ward to what place hath she departed? Where calves she? Not amid this herd of cattle. ÿ g. 1-164-17

The mother-nature has been compared with the cow due to the nourishing capacity of the nature. The cow is also metaphor for the sunlight, which feed the creation just like mother through the photosynthesis. Accordingly the question is about the rising and setting of the sun. It is a thought provoking question to know the reason of rising and setting of sun at different places of earth at different times.

Where is the blood of earth, the life, the spirit?

अवः परेण पितरं यो अस्यानुवेदं पुर एनावरेण।
कवीयमानः क इह प्र वौचहेवं मनः कुतो अधि प्रजातम्॥१८॥

Who, that the father of this Calf discerneth beneath the upper realm, above the lower,

Showing himself a sage, may here declare it? Whence hath the God like spirit had its rising? ÿ g. 1-164-18

The father ² the supreme fundamental energy of the creation,

who is above the lower as well beneath the upper, but who will explain, that when has sprung the mind-spirit?

The person, who has raised the question, knows that the fundamental is the cause of the creation, and is just like father of the creation, which is present every where, but he want to know that how the consciousness and mind has been generated?

ये अ॒र्वाञ्च॒स्ताँ उ॒ परा॑च आहु॒र्ये परा॑ञ्च॒स्ताँ उ॒ अ॒र्वाच॑ आहुः।
इन्द्र॑श्च॒ या च॒क्रयुः॑ सोम॒ तानि॑ धुरा च यु॒क्ता रज॑सो वहन्ति॥१९॥

Those that come hitherward they call departing, those that depart they call directed hither.

And what so ye have made, Indra and Soma, steeds bear as 'twere yoked to the region's car-pole. y g. 1-164-19

Here in a symbolic fashion they have indicated about the Bio geochemical cycle of the nature through the ancient and recent, for which *Indra* and *Soma* has made the path, it means electromagnetic energy, which is also the bond energy, it decides the path through the synthesis and degradation of the matter in the nature, which has been expressed as recent and ancient.

The whole earth is an ecosystem, which maintains its equilibrium in between its different components through the circulation of the nutrients and chemicals through Bio-geo-chemical cycle on the earth. This bio-geo-chemical cycle has been termed as **Blood of the earth**, the path of the cycle is set by **the Soma and Indra** ² electromagnetic bond energy.

The Life and spirit

द्वा सु॒पु॒ष्पा सु॒यु॒जा सखा॑या स॒मानं वृक्षं॑ परि॒ षस्व॑जाते।
तयो॒रु॒न्यः पि॒प्पलं॑ स्वा॒द्वत्य॑नं श्र॒न्नन्यो॑ अ॒भि चा॑क॒शीति॑॥२०॥

Two Birds with fair wings, Knit with bonds of friendship, in the same sheltering tree have found to being a refuge. One of the twain eats the sweet tree fruitage; the other eating not regardeth only. y g. 1-164-20

On this stanza *SĒyaṣa* says that the two birds are the vital and the supreme spirit, dwelling in one body. The vital spirit enjoys the fruit or rewards of actions while the supreme spirit is merely a spectator.

Through the example of two birds on the same tree, out of which one enjoy the sweet fruit and other one is only a spectator. Here the Vedic seers have indicated about the existence of the DNA (De oxy Ribose Nucleic Acid) in the body, who through its hereditary characters leads the life in the body with its actions, through protein synthesis and regulates the life. The same has been termed as *Jeewatma* ² *bio-soul*, and the other one is life-energy, which is in no way different from the fundamental energy, the same is the supreme spirit in the body as spectator, commonly known as soul. Accordingly the soul in the body and the fundamental energy (*God*) are one and the same

यत्रा सुपर्णा अमृतस्य भागमनिमेषं विदधाभिस्वरन्ति।

इनो विश्वस्य भुवनस्य गोपाः स मा धीर्ः पाकमत्रा विवेश॥२१॥

Where those fine Birds hymn ceaselessly their portion of life eternal, and the sacred synods, There is the Universe's mighty Keeper, he, wise, hath entered into me the simple. jg. 1-164-21

The earth where the creatures enjoy the fruit of life, where the two birds (life energy and bio soul) are living in association, the lord of the creatures has entered in to me. It means the life energy and the supreme fundamental energy is same which is present in the body as life energy. It has been indicated here in a anthropomorphic manner that *the Universe's mighty Keeper, he, wise, hath entered into me the simple.*

यस्मिन्वृक्षे मध्वदः सुपर्णा निविशन्ते सुवते चाधि विश्वे।

तस्येदाहुः पिप्पलं स्वाद्वरे तन्नोन्नशद्यः पितरं न वेद॥२२॥

The tree where on the fine Birds eat the sweetness, where they all rest and procreate their offspring- Upon its top they say the fig. is luscious: none gaineth it who knoweth not the father. Rg. 1-164-22

The earth where in the creation the beautiful creatures eat the sweet fruits of life, they enjoy the life and produces off-springs, at the top of their life they say that life is beautiful, but he, who knows not his generator father, he is in the dark, he gains nothing. It means one should know the purpose of life?

पाकः पृच्छामि मनसाविजानन्देवानामेना निहिता पदानि।

वृत्से वृष्कयेऽधि सृप्त तन्नुन्वि तल्लिरे कुवयु ओतवा उ॥५॥

Unripe in mind, in spirit undiscerning, I ask of these the God's established places; For up above the yearling Calf the sages, to form a web, their own seven threads have woven. ÿ g. 1-164-5

The answer of the above question has been given systematically, through the formation of atom and ionosphere processes in the upper atmosphere. Accordingly the origin of the nature has been indicated, which feed the creation just like mother.

The God's established places ?

The question is regarding the secret places of the natural forces, through which the creation has its existence. The creation is just like a song of fundamental energy, accordingly question has been asked answer has been given that how the song of creation has been fabricated by the fundamental energy. It has been indicated the just like the flow of sound waves, the charged particles are flowing from the cosmos, they fertilize the earth with life without rest.

यद्वायुत्रे अधि गायत्रमाहितं त्रैष्टुभाद्वा त्रैष्टुभं निरतक्षत।

यद्वा जगज्जगत्वाहितं पुदं य इतत्तद्विदुस्ते अमृतत्वमानशुः ॥२३॥

How on the GÈyatrī the GÈyatrī was based, how from the Tristup they fashioned the Tristup forth, How on the Jagatī was based the Jagatī, they who know this have won them² selves immortal life ÿ g. 1-164-23

On this stanza SÈyaḥ says: They who know the station of Agni upon the earth, VÈyu that was fabricated from the firmament and that the station of the sun, which is placed in the heaven. It means he who knows the process of the creation, he obtain immortality.

The question has been asked about the GÈyatrī - the fundamental particles, how they have generated the Tristup-atom, and from the atom how the ions have been formed?

गायत्रेण प्रति मिमीते अर्कमर्केण साम त्रैष्टुभेन वाकम्।

वाकेन वाकं द्विपदा चतुष्पदाक्षरेण मिमते सृप्त वाणीः॥२४॥

With GÈyatrī he measures out the praise-song, SÈma with praise-song, triplet with the Tristup. The triplet with the two or four- foot measure and with the syllable they form seven metres ÿ g.1-164-24

The answer has been given in the same fashion that with *GĒyatrĪ*- the fundamental particles, He - the fundamental energy measures out the praise song, with the praise song *SĒma*, triplet with the *Tristup*. Accordingly triplet with the two or four - measure and with syllable they form seven meters.

In a symbolic fashion, it has been expressed that from the fundamental energy first *GĒyatrĪ*-the charged particles have been generated, with the spinning movements of the charged particles around the nucleus, the magnetic energy has been generated, accordingly the atoms have been formed, and the charged particles electron, proton and neutron have been bound in the atom, just like triplet, from the triplet with two or four foot and with the syllable the seven meters can be fabricated.

The atom has three charged particles electron proton and neutron, it has been indicated by triplet.

In an atom positively charged protons and neutrons constitute the nucleus, around which vibrating clouds of negatively charged electrons move in elliptical orbits, due to the vibratory movements and spin of electrons, magnetic energy is generated. The magnetic energy with the electrostatic force of the nucleus produces electromagnetic energy, which binds the atoms of similar nature. The atoms of the different elements can produce diatomic molecules, even poly atomic complex molecules and chains of thousand of atoms like RNA and DNA can be produced. In this fashion the atom is the building block of the creation. It has been indicated symbolically through two or four foot and even with syllables they form meters.

It has been indicated in a symbolic manner that how the atoms, molecules and the matter can be formed in the nature.

जगतां सिन्धुं दिव्यस्तभा यद्रथन्तरे सूर्यं पर्यपश्यत्।

गायत्रस्य समिधस्तित्र आहुस्ततो मुह्य प्र रिरिचे महित्वा॥

With JagatĪ the flood in heaven he established and saw the sun in the Rathantara SĒman. GĒyatrĪ hath, they say, three brands for kindling: hence it excels in majesty and vigour. j g. 1-164-25

The JagatĪ is the place in the atmospheric ocean, where the high energetic solar winds are trapped by the earth's magnetosphere, (GĒyatrĪ's three bands are three fundamental particles) where the three fundamental particles- electron, proton and neutron are

converted into the ions, hence it excels in majesty and vigour. It has been expressed that the high energetic solar winds are just like the flood in heaven, they are trapped by the earth's magnetosphere, it has been indicated by the sun in the *Rathantara SÈman*, the base of the creation is ions of the molecules, hence it has been expressed symbolically that with *Jagati - ions*, he get the establishment ÿ g.1-164-25

The Nature as milk Cow

The ionosphere processes going on in the region of magnetosphere, feed the creation just like milk, accordingly the nature came in to the existence, the same has been termed as milk cow, how she nourish the creation, just like cow feed her calf, it has been indicated metaphorically.

उषं ह्वये सुदुर्गां धेनुमेतां सुहस्तो गोधुगुत दोहदेनाम्।
श्रेष्ठं सुवं संविता सावित्रोऽर्धाद्धो घर्मस्तदु षु प्र वोचम्॥२६॥

I invoke the milch-cow good for milking so that the milkier, deft of the hand, may drain her. May Savitar give goodliest stimulation, the caldron is made hot; I will proclaim it. ÿ g. 1-164-26

Here it has been indicated that those who know the importance of the upper atmosphere, they can extract much more from the nature for their welfare. The upper atmosphere, is just like milk cow, and the *Savitar* is the stimulator

हिङ्कृण्वती वसुपत्नी वसुनां वत्समिच्छन्ती मनसाभ्यागात्।
दुहामृश्विभ्यां पर्यो अच्येयं सा वर्धतां महते सौभगाय ॥२७॥

She, lady of all treasure, is come hither yearning in spirit for her calf and lowing. May this cow yield her milk for both the A,,vins, and may she prosper to our high advantage. ÿ g. 1-164-27

The nature is treasure of wealth of all kind, she lower down for her calf (creation), it has been proclaimed that the nature may yield her milk for the A,,vin (DNA) - living-beings.

It has been indicated that due to the ionosphere processes in the upper atmosphere, the nature came in to its full functions with natural forces on the earth. She is feeding the creation just like mother. She may yield her milk for the A,,vins. The A,,vins represent

nucleotide pairs of DNA, the DNA is universally present in the living-beings. Hence, it has been proclaimed that she may yield her milk for the A,,vins -living-beings.

गौरमीमेदनु वत्सं मिषन्तं मूर्धानं हिड्ढकृणोन्मातवा उ ।

सुक्लानं घर्ममभि वावशाना मिमाति मायुं पयते पर्योभिः॥२८॥

The cow hath lowed after her blinking youngling; she licks his forehead as she lows to from it. His mouth she fondly calls to her warm udder and suckles him with milk while gently lowing. y g. 1-164-28

The mother- nature lowed after her calf (creation) and feed the creation just like a milk cow.

अयं स शिङ्गे येन गौरभीवृता मिमाति मायुं ध्वसनावधि श्रिता।

सा चित्तिभिर्नि हि चुकार मर्त्यं विद्युद्भवन्ती प्रति वन्निमौहता॥२९॥

He also snorts, by whom encompassed round the Cow lows as she clings unto the shedder of the rain.

She with her shrilling cries hath humbled mortal man, and, turned to lightening, hath stripped off her covering robe. y g. 1-164-29

The mother cow-- The nature make noise with thundering and lightening, just like the mother cow make noise around her calf, in the same fashion the nature come nearer to the creation through rains and surround the creatures. The nature synthesizes the natural components and the same disintegrate in the nature with removal of the covering robe, it has been indicated by the removal of covering robe symbolically.

The Mystery of life

The mystery of life on the earth has been explored in the stanza from 30 to 33.

अनच्छये तुरगातु जीवमेजदध्रुवं मध्य आ पुस्त्यानाम्।

जीवो मृतस्य चरति स्वधाभिरमर्त्यो मर्त्येना सयोनः ॥३०॥

अपश्यं गोपामनिपद्यमानमा व परा व पृथिभिश्चरन्तम्।

स सध्रीचीः स विषूचीर्वसान् आ वरीवर्ति भुवनेष्वन्तः॥३१॥

य ई चकार न सो अस्य वेदु य ई ददर्श हिरुगिन्नु तस्मात्।

स मातुर्योनां परिवीतो अन्तर्बहुप्रजा निऋतिमा विवेश॥३२॥

That which hath breath and speed and life and motion lies firmly established in the midst of houses. Living by offerings to the Dead he moveth Immortal one, the brother of the mortal. ÿ g. 1-164-30

The living creature shows energy transformation, life and motion, in them, the life energy lies in the midst of houses (cell), he is immortal living in the cell body as brother of the mortals.

In this way the presence of life energy has been indicated.

I saw the Herdsman, him who never stumbles approaching by his pathways and departing. He clothes with gathered and diffusive splendour within the worlds continually travels. ÿ g. 1-164-31

The life energy has been termed as *herdsman*² the guardian, he travel continuously among the creatures with different covering and invisible. It means the life energy is generated at its own and disappears with time at its own with ageing of the cell body. It travels on the earth in different forms with different physical cellular body. The cell bodies are just like clothes.

He who hath made him doth not comprehend him: from him who saw him surely is he hidden. He yet enveloped in his Mother's bosom, source of much life, hath sunk into destruction. ÿ g. 1-164-32

Here the presence of bio-soul (DNA) has been indicated, it has been said that the living-being, who produce the off-spring through reproduction, they are unable to see him and the person who see him he is hidden from him. *Yet he is enveloped in the Mother's bosom, source of life and enter in the sufferings.* It means the bio-soul-DNA is hidden in the body, with the development of the physical body, it face the consequences of life.

The Protector of life² Ozone layer

द्यौर्मै पिता जनिता नाभिरत्र बन्धुर्मै माता पृथिवी महीयम्।

उत्तानयोश्चाम्बोऽ योनिर्न्तरत्रा पिता दुहितुर्गर्भमाधात्॥३३॥

Dyaus is my Father my begetter: kinship is here. This great earth is my kin and Mother. Between the wide-spread world-halves is the birth-place: the Father laid the Daughter's germ within it. ÿ g. 1-164-33

The life on the earth is a puzzle. The truth has been explained through the mouth of the life in an anthropomorphic manner symbolically.” *The sun in the sky is my father, who is the cause of life, earth is my mother, who nourish me and my birth place is in between the world halves, (where ozone layer absorbs the toxic ultra violet rays).*” It means the life has its origin after the formation of the Ozone layer in the atmosphere.

अचि॑कित्वाञ्चि॒कितु॑षश्चि॒दत्र॑ क॒वीनृ॑च्छामि वि॒दने॑ न वि॒द्वान्।

वि यस्तु॑स्तम्भ॒ षळि॑मा रजा॑स्युजस्य॒ रूपे॑ किमपि॒ स्वदे॑कम्॥६॥

I ask unknowing, those who know, the sages, as one all ignorant for sake of knowledge. What was that One who in the Unborn's image hath established and fixed firm these world's six regions. y g. 1-164-6

The question has been raised regarding the one, which is in the image of the unborn fundamental energy, which has firmly established the six regions of the world. It means the infinite nature, under which the creation is working as a system. How the system is working? The answers have been given in a symbolic fashion with questions to stimulate the related thought.

The Creation

1. The *Yajna*- actions and inter-actions- The creation, is a model of *Yajna*- actions and inter-actions. Accordingly, the questions, related with the model have been raised, and the answers have been given with the tune of model.

पृ॒च्छामि॑ त्वा॒ पर॑मन्त॒ पृथि॑व्याः पृ॒च्छामि॑ यत्र॒ भुव॑नस्य॒ नाभिः॑।

पृ॒च्छामि॑ त्वा॒ वृष्णो॑ अश्व॒स्य॒ रेतः॑ पृ॒च्छामि॑ वा॒चः पर॑मं व्योम॥३४॥

I ask thee of the earth's extremist limit where is the centre of the world, I ask thee. I ask thee of the stallion's seed prolific I ask of highest heaven where speech abideth. y g. 1-164-34

The *yajna*- vedi, is the model of the creation sacrifice, accordingly, the questions have been raised, that if, it is the model, then, where is the earth's extremist limit? Where is the centre of earth? Where is the stallion's seed prolific?, which carry it forward? Where is the highest heaven of speech?

The answers have been given through the model, *yajña- vedi*.

इयं वेदिः परो अन्तः पृथिव्या अयं यज्ञो भुवनस्य नाभिः।

अयं सोमो वृष्णो अश्वस्य रेतः ब्रह्माय वाचः परमं व्योम ॥३५॥

This alter is the earth's extremist limit; this sacrifice of ours is the world's centre. The Stallion's seed prolific is the soma; this BrEhmaḥ highest heaven where speech abideth. y g. 1-164-35

The answers have been given through the sacrifice (*Yajña*-actions and interactions) that this sacrifice alter ²*yajña-Vedi* is earth's extremist limit, it means they are drawing attention towards the fact that the earth has come in to the existence through action and interactions under space- time relationship and it will go to its end through the series of actions and interactions as going on in the sacrifice altar- *Yajña-Vedi*.

The answer of the 2nd question has been given thorough the model, that the Gh,ta used in the *Yajña*, the Gh,ta, represent soma, hence, it has been said that *the Stallion's seed prolific is the soma*. It means the centre of the creation lies in the series of actions and interactions, through which the creation is sustained and working as a system, The Soma- magnetic energy is the regulator, who carries the system forward, just like *the Stallion, it carries forward the creation, through the electromagnetic bond energy*. The electromagnetic bond energy is the product of Soma- magnetic-energy. Hence, the electromagnetic bond energy has been termed as stallion's seed prolific is soma.

it has been also explained in the stanza y g. 1-164-50.

The *Yajña*-sacrifice means action and interactions, here it has been said that from actions and interactions again actions and interactions are generated, where according to the cosmic law, *Deva* ² fundamental particles are the first, with their activities, they reach to the height of matter, and with disintegration in the nature, they are converted in to the fundamental particles- *Deva*. It means initially the fundamental particles are the first in the series of action and interactions, through their activities they are converted into the matter and again reached to their original old state of *Deva* ² fundamental particle, which indicates about the natural cycles, through which the natural components are synthesized and

disintegrated in the reversible direction with breaking of the bond energy.

The stallion's seed prolific is Soma- it means the *Soma*² magnetic energy, which is present in all the planets, asteroids, *Nak-atras* and the sun, matter and in the living creatures, they have the internal energy source as well as they are interconnected with the inter planetary magnetic field, hence *Soma*² magnetic energy has been regarded as the seed prolific, which is generating at its own, due to the movements of the astronomical bodies at their axis. The position of the planets in the universe is also due to the interplanetary magnetic field.

This BrĒhmaḥ highest heaven where speech abideth—The answer has been given in tune of the model, that *this BrĒhmaḥa Priest, represent the BrĒhma, just like the VĒc-speech of the Priest is imperishable and remains in the heaven, in the same fashion the heaven is the place of VĒc-speech energy, where the speech abideth*—

It means the *VĒc*-speech is imperishable, and its highest place is in the universe, the place of supreme fundamental energy has been termed as *BrĒhma*'s voice. It means the fundamental energy and the speech energy are synonym in their nature.

The Solar System

सप्तार्धगर्भा भुवनस्य रेतो विष्णोस्तिष्ठन्ति प्रदिशा विधर्मणि।

ते धीतिभिर्मनसा ते विपश्चितः परिभुवः परि भवन्ति विश्वतः ॥३६॥

Seven germs un-ripened yet are heaven's prolific seed: their functions they maintain by Vi-ḥu's ordinance. Endued with wisdom through intelligence and thought they compass us about present on every side. yg. 1-164-36

The seven un-ripened seeds, represents the seven planets of the solar system, the life is present only on the earth and other seven planets are without life and climate, hence, they have been termed as unripe, their functions are dependent on the sun.

Their functions they maintain by Vi-ḥu's ordinance, the Vi-ḥu represent the solar rays, it has been expressed that the planets of the solar system are working under the cosmic principles of sun and solar rays. The influence of the seven planets of the solar system on

the earth has been indicated. They influence the life and climate on the earth through their magnetic field and the infrared rays, hence it has been said that they compass us about and present on every side.

The origin and evolution of the creation has been indicated symbolically.

The VĒc - energy

न वि जानामि यदिवेदमस्मि निण्यः सन्नद्धो मनसा चरामि।

यदा मार्गमथमजा ऋतस्यादिद्वाचो अश्नुवे भागमुस्याः ॥३७॥

What thing I truly am I know not clearly: mysterious fettered in my mind I wander. When the first-born of holy Law approached me, then of this speech I first obtain a portion. yg. 1-164-37

Thr root cause of the creation, *When the first-born of holy Law approached me, then this speech,* it means, through the VĒc-energy, the men speak in the society. When the seer has traced the root cause of the creation, then he express that with this I got the answer, that how, we have reached at the height of speaking in the council in the creation. The knowledge, which he has obtained, is just like a small portion. He has explained the same, in a systematic order.

The physical building block

अपाङ्म्राडैति स्वधया गृभीतोऽमर्त्यो मर्त्येना सयोनिः

ता शश्नन्ता विषूचीना विद्यन्ता न्यश्रुत्यं चिक्व्युर्न नि चिक्व्युर्न्यम् ॥३८॥

Back forward goes he grasped by strength inherent the Immortal born the brother of the mortal. Ceaseless they move in opposite direction: men mark the one and fail to mark the other. Rg. 1-164-38

The generation of the magnetic energy in the womb of the atom has been expressed, through the Immortal born the brother of mortal. The movements of the charged particles, has been indicated by *Ceaseless they move in opposite direction:* The men can mark the movements of the charged particles, but he is unable to mark the generation of magnetic energy in the atom. The magnetic energy grasped the strength with formation of the electromagnetic energy. It is the inherent strength of the atom, and building block of the creation. It has been indicated.

In this way the formation of the atom has been indicated, the

atom is the building block of the creation.

It has been indicated that with birth the bio soul - DNA exhibit dual function, which record the thoughts and deeds in forward direction, which is grasped by strength inherent in the DNA, on another side the bio soul- DNA develop the physical body with hereditary characters. It has been expressed by *Immortal born the brother of the mortal. Ceaseless they move in opposite direction:*

The language of the thought energy is immortal and physical body under go ageing and finally decayed in the nature. It has been indicated by saying that they move in opposite direction without rest. The people mark the decay of the body but fail to mark the fate of bio-soul-thought energy.

The Source of Creation and functions

ऋचो अक्षरं परमे व्योमन्यस्मिन्देवा अष्टि विश्वे निषेदुः।

यस्तन्न वेदु किमुचा करिष्यति य इत्तद्विदुस्त इमे समासते॥३९॥

Upon what syllable of holy praise-song as 'twere their highest heaven the Gods repose them ² Who knows not this, what will he do with praise-song? But they who know it well sit here assembles. j g. 1-164-39

It has been indicated that the highest heaven is the place of praise songs, the Gods repose them. It means the $V\ddot{E}c$ ² speech-energy is imperishable and remains in the universe, he, who knows not this fact, what he will do with chanting the praise songs? The people who knows this, they work and sit together in the assembly. In this fashion the importance of $V\ddot{E}c$ - energy has been indicated with a thought provoking question mark, on simple recitation of the praise songs of the Vedic hymns.

The Nature - the source of chemical energy

सुयवसाद्भगवती हि भूया अथो वयं भगवन्तः स्याम।

अद्धि तृणमघ्न्ये विश्वदानीं पिब शुद्धमुदुक्मचरन्ती॥४०॥

Fortunate mayst thou be with goodly pasture and may we also be exceeding wealthy. Feed on the grass O cow at every season and coming hitherward drink limpid water. j g. 1-164-40

The sun is the soul and eye of the creation. The light energy of the sun has been compared with cow, the cow feed the calf with

milk, in the same fashion the sunlight feed the creation with photosynthesis by the plants and evaporation of water from the surface of the earth, it bring rains, hence it has been prayed to sunlight that feed on the grass and drink limpid water symbolically.

In this way, symbolically, **the nature has been welcomed, with treasure of natural wealth**, O cow at every season feed on the grass- the importance of white light, photosynthesis, and **chemical energy**, for the living-beings has been indicated. The importance of water in the nature has been indicated by drink limpid water.

The Cosmic source of the creation

गौरीर्मिमाय सलिलानि तक्षत्येकपदी द्विपदी सा चतुष्पदी।

अष्टापदी नवपदी बभ्रुवर्षी सहस्राक्षरा परमे व्योमन्॥४१॥

Forming the water-floods the GÈuri)buffalo hath lowed one footed or two footed or four footed she, Who hath become eight footed or hath got nine feet the thousand syllable in the sublimest heaven. y g.1-164-41

In the primeval condition of the creation, the charged particles have been generated, which feed the creation just like buffalo. According to SÈyaḥ, GÈuri is VÈc-speech, it has been expressed that just like the GÈuri - VÈc-speech spread in all the direction. In the same fashion the charged particles have spread in countless channels in sublimite heaven.

The sublimite heaven is expression for the appearance of space from the unfathomed cosmos.

तस्याः समुद्रा अधि वि क्षरन्ति तेन जीवन्ति प्रदिशश्चतस्रः।

ततः क्षरत्यक्षरं तद्विश्रुमुप जीवति॥४२॥

From her descend in streams the seas of water; thereby the world four regions have their being. Thence flows the imperishable flood and thence the universe hath life. y g. 1-164-42

It has been expressed that the charged particles have descending from the cosmic ocean in countless channels, just like streams of sea water. They have filled all the four quarters of the world with existence.

शकुमयं धूममारादपश्यं विधूवतां पर एनावरेण।

उक्षाणं पृश्निमपचन्त वीरास्तानि धर्माणि प्रश्रुमान्यासन्॥४३॥

I saw from far away the smoke of fuel with spires that rose on high that beneath it. The Mighty men have dressed the spotted bullock. These were the customs in the days a foretime. y g. 1-164-43.

The smoky clouds of the charged particles constitute the nebula with generation of internal force. It has been expressed by the smoky clouds of fuel with spires that rose on high,

The formation of the nebula in the primeval condition of the solar system has been expressed by 'The Mighty man Soma, the Supreme energy has dressed the spotted bullock. With the movements of the charged particles, the Soma has occupied the centre. It has taken the first seat, under cosmic principles.

The three rays of life on the earth

त्रयः केशिनं ऋतुया वि चक्षते संवत्सरे वपत् एक एषाम्।

विश्वमेको अग्निं चष्टे शचीभिर्घ्राजिरेकस्य ददृशे न रूपम्॥४४॥

Three with long tresses show in ordered season. One of them sheareth when the year is ended. One with his powers the universe regardeth: of one the sweep is seen, but his figure. y g. 1-164-44

The three with long tresses, they represent role of three energies, in the life on the earth's surface. They appear with birth of life, and disappear with death. The life cycle of the living-beings, exhibits the functions in an ordered sequence, under the impact of three energies in the life.

Of one of them sheareth when the year is ended,

With birth the life appear, the physical body develop with synthesis, and with the end of the life cycle the body disintegrates in the nature with ageing. The end of life has been indicated by the end of the year symbolically. The synthesis and disintegration in the body is controlled by the **electromagnetic bond energy**, during the life it synthesizes the cellular body, and the same disintegrate the body after death. It has been indicated by *one of them sheareth when the year is ended.*

One with his powers the universe regardeth:

One regardeth from all sides, it is the **chemical energy** of the food, which enhance the metabolic reactions in the body and protect the body from all sides during the life time with food.

of one the sweep is seen, but his figure.

The life energy-consciousness appears with birth and disappears with end of life cycle. The figure of life-energy is invisible.

The life energy- consciousness in the body shows motion but his figure is not seen.

These three energies, shows their impact in orderly sequence under cosmic principles, and remain unaffected. It has been indicated.

In this way the answer of the question, about God's established places, through, which the living-beings have formed the food chains and food webs through, their own food, it has been indicated.

Lovely Bird's securely founded station

Conclusion - the cosmic energy

चत्वारि वाक्परिमिता पदानि तानि विदुर्ब्राह्मणा ये मनीषिणः ।

गुहा त्रीणि निहिता नेङ्गयन्ति तुरीयं वाचो मनुष्या वदन्ति॥४५॥

Speech hath been measured out in four divisions the BrEhmans who have under standing knows them. Three kept in close concealment causes no motion of speech men speak only the fourth division. ि g. 1-164-45

It has been indicated here that the speech has four measuring division, the men speak only the fourth, the rest three are concealed. It means men speak only the fourth the *Vaikhri-vÈc*. The three other *Para*, *Pa-yanti* and *Madhyama* remain dormant. It also reveals the truth that man is acquainted with only one fourth of the *VÈc*-speech energy and the rest three-fourth in secret.

It has been indicated metaphorically through the four division of *VÈc* - speech that three-fourth of the cosmic fundamental energy is invisible in the cosmos and the visible world is only one-fourth of it, through it the fundamental energy exhibit its functions with energy transformation.

इन्द्रं मित्रं वरुणमग्निमाहुः स्थो दिवः स सुपर्णो गरुत्मान्।

ए॒ स॒द्वि॒प्रा॒ बहु॒धा॒ वे॒द॒त्य॒ग्नि॒ य॒मं॒ मा॒तु॒स्त्रि॒श्रान्मा॒हुः॥

They call him Indra, Mitra, Varuṇa, Agni and he is heavenly nobly-winged Garutmān. To what is one, sages give many a title: they call it Agni, Yama, Mātari, van. y. g. 1-164-46

It has been indicated that the creation has come in to existence from an supreme fundamental energy through energy transformation, the different natural forces are his different forms and the *BrEhmin* call the same fundamental energy with the different names. Through its different forms the fundamental energy has established the world's six regions. *Indra* is electricity, *Mitra* is light, *Varuṇa* is gravity, *Agni* is heat, *Agni* is fire, *Yama* is chromosome, *Matari, van* is carbon di oxide, nobly-winged *Garutmān* is magnetic energy, they are different forms of energy, it has been expressed.

In a symbolic way a question has been raised about the secret stations of the creation, through which the creation is working as a system under the control of the Supreme fundamental energy. It has been indicated that the creation is working as a system under the cycles of nature. These cycles are lovely bird's secret stations² it means supreme fundamental energy's secret stations, through which the creation is working as a system. The important cycles operating in the system have been indicated.

The sun-spot cycle

कृष्णं नयान् हरयः सुपर्णा अपो वसाना दिवमुत्पतन्ति।

त आर्ववृत्रन्तसर्दनाद्रुतस्यादिदधुतेन पृथिवी व्युद्यते॥४७॥

Dark the descent: the birds are golden coloured; up to the heaven they fly robed in the waters. Again they descend from the seat of Order and all the earth is moistened with their fatness'. 1-164-47

Dark the descent: The dark is symbol of sun-spots, they regulate the climate on the earth, with their cycle of 11/22 years, with formation of the electromagnetic energy in the sun-spots, they explode and descent with solar flares, they affect the climate with rainfall. It has been indicated by Dark the descent: accordingly with

increase in temperature on the earth, the water vapours fly up to the heaven, just like golden coloured birds, they descend from the seat of order again with rain fall, and all the earth is moistened with water-fatness. It has been expressed.

The Cycle of the year ' _

द्वादश प्रथयश्चक्रमेकं त्रीणि नभ्यानि क उ तच्चिकेत।
तस्मिन्त्साकं त्रिशता न शङ्कवोऽर्पिताः षष्टिर्न चलाचलासः ॥४८॥

Twelve are the fellies and the wheel is single; three are the naves. What man hath understood it? Therein are set together spokes three hundred and sixty which in nowise can be loosened. y g. 1-164-48

It has been indicated here that all the phenomena on the earth are going on under the wheel of year. It has twelve months, three hundred and sixty days with having three centres, Sky, Atmosphere and the earth. It indicates about the yearly cycle of the months and season. Under the wheel of year, the nature exhibits its functions.

The nature as mother

यस्ते स्तनः शशयो यो मयोभूर्येन विश्वा पुष्यसि वार्याणि।
यो रत्नधा वसुविद्यः सुदत्रः सरस्वति तमिह धातवे कः ॥४९॥

That breast of thine exhaustless spring of pleasure where with thou feeds all things that are choicest, Wealth giver treasure finder free bestower bring that Sarasvatī that we may drain it. y g. 1-164-49

The nature is the source of all pleasures and treasure of natural forces. She feed the creation just like the breast of mother feed the child with milk. She has been invoked to bestow knowledge to drain the natural resources from the nature.

The Vāc-speech energy has been invoked as *Sarasvatī*, she is the Goddess of wisdom and knowledge, it has been prayed that the Vāc speech nourishes the world like a mother, you are the treasure of jewels, give us the wisdom to drain it. The importance of the VĒc- speech energy has been indicated, through *Sarasvatī*.

The Bio-geo-chemical cycle

यज्ञेन यज्ञमयजन्त देवास्तानि धर्माणि प्रथमान्यासन्।

ते ह नार्क महिमानः सचन्त यत्र पूर्वे सृष्ट्याः सन्ति देवाः।

By means of sacrifice the Gods accomplished their sacrifice: these were the earliest ordinances. These Mighty ones attained the height of heaven there where the SEdhyas Gods of old are dwelling. y g. 1-164-50

The *Yajna*-sacrifice means action and interactions, here it has been said that from actions and interactions again actions and interactions are generated, where according to the cosmic law, *Deva* ² fundamental particles are the first, with their activity they reach to the height of matter, and the fundamental particles- *Deva*. It means initially the fundamental particles are the first in the series of action and interactions, through their activity they are converted into the matter and again reach to their original old state of *Deva* ² fundamental particle, it indicates about the natural cycles, through which the natural components are synthesized and disintegrated in the reversible direction, through the bio-geo-chemical cycle in the nature.

The Hydrological Cycle

समानमेतदुदकमुच्चैत्यव् चाहभिः ।

भूमिं पर्जन्या जिन्वन्ति दिवं जिन्वन्त्यग्नयः ॥५१॥

Uniform with the passing days this water mounts and falls again. The tempest clouds give life to earth and fires reanimate the heaven. y g. 1-164-51

The hydrological cycle, is regular feature on the earth. It has been indicated, that uniformly the water vapours rise, and falls again. The water clouds with thunder, give life to earth with rainfall, the heat energy reanimate the heaven. This hydrological cycle is source of life on the earth.

The SarasvEn-VÊc-Speech energy

दिव्यं सुपर्णं वायुसं बृहन्तमुपां गर्भं दर्शतमोषधीनाम्।

अभीषतो वृष्टिभिस्तुर्पयन्तं सरस्वन्तमवसे जोहवीमि॥५२॥

The Bird celestial vast with noble pinion the lovely germ of plants the germ of waters, Him who delighteth us with rain in season SarasvEn I invoke that he may help us. y g. 1-164-52

The supreme fundamental energy has been termed as Bird

celestial, which is present in the plants as life-energy, and he is the germ of water, he with the rain, fertilize the earth with seasons, I invoke the *SarasvÊn*- the *VÊc*-Speech energy for help.

The Infinite Supreme lord

विराड् वाग् विराट् पृथिवी विराडन्तरिक्षं विराट् प्रजापतिः।

विराण्मृत्युः साध्यानामधिराजो वभूव तस्य भूतं भव्यं वशे स मे भूतं भव्यं वशे कृणोतु॥

VirÊj (is) speech, VirÊj earth, VirÊj atmosphere, VirÊj PrajÊpati; VirÊj became death, the over-king of the perfectible (sadhya); in his control are what was, what is to be; let him put in my control what was, what is to be.

In the concluding stanza it has been indicated that in the creation every thing is going on in a cyclic manner.

In the Atharvaveda, IX-9 &10 The *Asya VÊmiya SÊkta* has been cited, where in *Atharvaveda IX-10-24*, the image of the supreme fundamental energy has been expressed in the form of *VirÊj VÊc* - Speech energy, *VirÊj Earth*, *VirÊj Universe*, *VirÊj PrajÊpati*-the lord of beings and *VirÊj* became the Death, it means the creation is a system, where the potentiality of *VÊc*-speech energy is infinite, potentiality of the earth is infinite, potentiality of the universe is infinite, potentiality of *PrajÊpati*-the lord of beings is infinite and accordingly the death on the earth's surface became infinite, the death is the over lord of all the materialistic world, in his control are what is and what is to be, let him put in my control, what was and what is to be. *Atharvaveda IX-10-24*

It reflects the quest of the human mind to control over death and nature.

13. Origin of Consciousness

a. Modern Concept

Modern researches in the field of origin of life have demonstrated the a-biotic formation of organic substances in the early pre-biological history of the earth A. I. Oparin (1922), J.B.S. Haldane (1928) and Bungen Burg de Jong (1929), they have suggested that in the primitive conditions, coaservates may get produced, as and when two hydrophilic colloidal solutions carrying

opposite charges are being mixed.

A.I. Oparin (1968) has also suggested that photosynthetic activity can be promoted, when porphyrin is incorporated in the coaservates, this fact has been indicated by the metaphor '*cow from the skin*' in a symbolic manner.

Stanley Miller 1953 has demonstrated that under experimental conditions, the amino acids necessary for the building up of biological systems can be generated.

Now we are well acquainted with fact that first life has originated in water, and for existence of life on the earth, presence of ozone layer in the atmosphere is an essential factor, which absorbs the toxic ultra violet rays. Along with this the discovery of DNA double helix by Watson and Crick, the discovery of genetic code by Nirenberg, and genetic code combinations by A. Korenberg have open new vista in the history of modern science. But the most important aspect of life is consciousness. What is consciousness? On this aspect, the modern science has no answer. On the contrary the Vedic texts have explained the origin and evolution of life on the earth in a similar fashion synonym to our knowledge of modern science. With one step ahead, they have traced evolution of the consciousness also.

b. Vedic cell biology - *ṛbhu* - Cell

Matthias Schleiden and Theodor Schwann have proved first time that animals and plants are made up of cells. All the living organisms are made up of cells, at cellular level, they exhibit the same functions. It is the basis of our modern big biological discoveries.

In the Vedic terminology the cell has been termed as *ṛbhu* and the different stages of the cell have been termed as *ṛbhu*, *ṛbhuk-an*, *Vibhvan* and *VĒja*.

The Nucleus has been termed as *B, haspati*, the DNA has been termed as *Tva—Ē and Vivasvat*, the cell division has been expressed as renewal of parents. The cell has been termed as *ṛbhu*, literary it means *ṛ* to move and *bhu-* to be, they follow each other and in succession they proceeds towards evolution. In the early primitive

condition the consciousness-chetna has been appeared with the movements of the charged particles in side the closed system of the coaservates. Accordingly with space, time and environmental conditions with evolution a prokaryotic cell came in to the existence with inherent quality of energy transformation, growth and multiplication with evolution. The development of the autotrophic cell with photosynthesis and genetic material has given the ways for the organic evolution on the earth.

In the modern biology, the life energy- consciousness has no place at present. Hence, it requires a special attention in particular.

c. Life energy² The consciousness - the life energy has been described as *Chetna*-consciousness, which appears at its own due to the movement of the charged particles in the initial stage and streaming movements of the protoplasm in the cell and it disappears with the ageing of the cells. The consciousness is a form of energy and it is the base of life, it can be defined as life principle related with the movement, with streaming movements of protoplasm life energy is generated, just like due to the spinning vibrations of electrons around the nucleus, magnetic energy is generated in the atom. The life is always connected with an organism and it appears from pre-existing cells only. Once the first cell body has taken its shape, it has maintained its continuity from generation to generation. The same has been expressed symbolically considering the *ÿbhu*-cell as the celestial race with a source of organic matter just like wealth for the nature.

Generation of life energy-

उत्तिष्ठ ब्रह्मणस्पते देवयन्तस्त्वेमहे।

अप प्र यन्तु मरुतः सुदानव इन्द्रप्राशूर्भवा सचा॥

The holy work I wrought before is wrought again: my sweetest hymn is sung to celebrate your praise. Here, O ye ÿbhus, is this sea for all the Gods: sate you with Soma offered with the hallowing word ÿ g. 1-CX-1

The *ÿbhus* (cells) have been praised for their work and it has been said “O ye *ÿbhus*, is this sea for all the Gods”, it means for the natural forces the space in the cell is just like a vast ocean for their activity, which acts with the generation of magnetic life

energy. The *Soma* represents magnetic life energy, which is generated within the cell due to the streaming of protoplasm in the cell. The same is the symbol of life in a cell, where natural metabolic reactions sate the cell with their activities.

The generation of life energy sate the cell on an easy path; it has been indicated by the metaphor of *Soma offered with hallowing word*. Where the cell is just like a vast sea for the activities of the natural components, with their functions, they gratify the cell with generation of life energy through vibrations. The sound of vibration has been expressed by the hallowing word and generation of life energy has been indicated by the *Soma* offered.

त्वामिदं सहसस्युत्र मर्त्यं उपब्रूते धनं हिते।
सुवीर्यं मरुत आ स्वश्व्यं दधीत यो व आचुके॥२॥

When seeking your enjoyment on ward from a far, ye came unto the home of liberal savitÊ

Through the savitÊ the beginning of metabolic reactions has been indicated ÿ g. 1-110- 2

प्रेतु ब्रह्मणस्पतिः प्र देव्येतु स्रुता।
अच्छा वीरं नर्यं पृङ्क्तिराधसं देवा यज्ञं नयन्तु नः॥३॥

SavitÊ gave you immortality, because ye came proclaiming him whom naught can hide. And this drinking- chalice of the Asura, which till that time was one ye made to be fourfold ÿ g. 1-110- 3

Proclaiming him whom naught can hide.- It has been indicated that with generation of life energy, the ÿ**bhu**s came in contact of sap-protoplasm and *savitÊ*-stimulator-enzymes; with this the generation of life energy with streaming of protoplasm and the metabolic reactions gave them immortality through cell division in a fourfold manner. It means once the generation of life energy has started in the cell body, it has maintained its continuity through cell division from generation to generation in a fourfold manner, it has been expressed in the words of ÿ**bhu**- *ye came proclaiming him whom naught can hide* ÿ g. 1-110- 3

The synthesis of chlorophyll and development of autotrophic nature has been indicated by cow from the skin. The cow is metaphor for nourishment and skin is for protoplasmic cell wall.

Life Energy- The life energy is symbol of consciousness in the living-beings, it is generated in the cell body at its own with streaming of protoplasm and disappear with the ageing of the cell body. The nature of the life energy is synonym to the energy generated in an atom due to the spinning vibrations of the electrons around the nucleus, it interconnect the cellular body in the same fashion just as bond energy bind the atoms. It is a sort of magnetic energy the same has been described as *Soma*.

Evolution of the Life energy- Consciousness

The consciousness is a form of the fundamental energy. It generates at its own in side the closed system due to the movements of the charged particles, later on this function has been taken over by the protoplasmic streaming movements in side a cell. With the evolution of multi-cellular organisms the cells are inter-connected hence the consciousness is having a common appearance.

The evolution of the living-beings and their various forms are due to the evolution of the DNA base sequence with complexity of genetic code. It means for the whole external evolution of the living- beings DNA is the main genetic material, which through its genetic code maintain its continuity in the living-beings and carries the hereditary characters from one generation to another generation. In this way DNA on one hand regulates the course of life through the hereditary characters in the living-beings, and streaming of the protoplasm in the living cells provides it life- consciousness with the metabolic reactions as its food. It gets further strength through the movement of the sap in plants and circulation of blood in the animals. In human-beings and the higher animals it gets further strength with evolution through the development of the nervous system. It means the movement of the sap in plants, circulation of the blood in the animals and the nervous system are the sources of the consciousness. They are related with the physical cell body, heart and the brain. These three centres work together, with the inactivity of any one centre the other two centres are also became inactive in succession. In the medical terminology it is known as physical death, cardiac arrest and coma. It means the human body has three centres of the consciousness. The physical cell body, it

constitute one centre, the second one is heart, the electromagnetic activity of the heart can be measured by the ECG-Electro Cardiogram, the third one is the brain, its electromagnetic activity can be measured by EEG-Electro Encephalogram.

The three centres of the consciousness in the human body have been invoked for prosperity and used to worship of *Rudra* for welfare from the disease.

Tryambka we worship, sweet augments of prosperity.

As from its stem the cucumber, so may I be released from the death, not raft of immortality ÿ g.7-59-12

During life the three energies shows their impact in orderly sequence under cosmic principles and remain unaffected, it has been indicated by त्रयः केशिनं ऋतुया वि चक्षते

त्रयः केशिनं ऋतुया वि चक्षते संवत्सरे वपतु एक एषाम्।

विश्वमेको अग्निं चष्टे शचीभिर्धार्जिरेकस्य ददृशे न रूपम्॥४४॥

Three with long tresses show in ordered season. One of them sheareth when the year is ended. One with his powers the universe regardeth: of one the sweep is seen, but his figure. ÿ g. 1-164-44

. The synthesis and disintegration in the living cell body is controlled by the **electromagnetic bond energy**, during the life it synthesizes the cellular body and the same disintegrate the body after death.

One with his powers the universe regardeth:

One regardeth from all sides, it is the **chemical energy** of the food, which enhance the metabolic reactions in the body and protect the body from all sides during the life time.

Of one the sweep is seen, but his figure.

The life energy-consciousness appears with birth and disappears with end of life cycle.

The life energy- consciousness in the body shows motion but his figure is not seen.

The three energies shows their impact in orderly sequence under cosmic principles, it has been indicated in ÿ gveda.

The DNA present in the living-beings is responsible for the

hereditary characters, and it has the genetic information about the events of life, in the form of genes and the genetic code, which decides the course of life in the living-beings. The consciousness is only a spectator in the body, it regulates the cell body for its survival, accordingly under space, time and the environmental conditions, the cell body searched the means of adaptation in the nature.

द्वा सुपुर्णा सुयुजा सखाया समानं वृक्षं परि षस्वजाते।

तयोर्न्यः पिप्पलं स्वाद्वत्त्वनं श्रन्न्यो अग्निं चाकशीति॥२०॥

Two birds with fair wings, knit with bonds of friendship, in the same sheltering tree have found refuge,

One of the twins eats the sweet Fig-tree's fruitage; the other eating not regardeth only.

The two birds are the vital and the supreme spirit, dwelling in one body. The vital spirit enjoys the fruit or rewards of actions while the supreme spirit is merely a spectator ÿ g. 1-164-20

The DNA leads the life in the body, through the hereditary characters. The same has been regarded as *JīvĀtman* - BIO SOUL, and the other one is consciousness, which is synonym to the fundamental energy. The same is the supreme spirit in the body as spectator, commonly known as Soul, accordingly the Soul in the body and the fundamental energy (**GOD**) are one and the same. Hence in the *Upni-ads* it has been said that *Atma so Parmatma* means God and Soul are one. It is *JīvĀtman*- bio soul (DNA), who bears the pains of life, which is immortal in the sense that it has maintained its continuity in the living-beings right from its first synthesis in side a cell and remains active through its off-springs. Hence DNA is the same from unicellular to multicellular organisms with a change in its base sequence.

The differences, which we observe that the individual person concern are having different mentality and fate, it is due to the cycle of rebirth under the nature, where for every action there is a reaction it means every individual will have to face the consequences of his deeds with rebirth. After the death of the physical body the thought energy, which is imperishable remains in

the universe, when the thought energy find its suitable language code on the duplicating DNA of the embryo, accordingly the language of the DNA open on the developing DNA, the language decides the fate of the individual as per his past deeds and the development of the physical body will be there as per the parental hereditary characters. Accordingly under the rebirth cycle evolution of the mental qualities from the animal instincts to the human instincts is the aim of life.

यत्रा सुपर्णा अमृतस्य भागमनिमेषं विदधाप्तिस्वरन्ति।

इतो विश्वस्य भुवनस्य गोपाः स मा धीरः पाकमत्रा विवेश॥२१॥

Where those fine Birds hymn ceaselessly their portion of life eternal, and the sacred synods, There is the Universe's mighty Keeper, he, wise, hath entered into me the simple j g. 1-164-21

On the earth, the creatures enjoy the fruit of eternal life. The two birds (life energy and bio soul) are living in association with each other. The lord of the creatures has entered in to me. It has been indicated that the life energy and the supreme fundamental energy, they are one and the same, which is present in the body as life energy. It has been indicated in an anthropomorphic manner.

यस्मिन्वृक्षे मध्वदः सुपर्णा निविशन्ते सुवते चाधि विश्वे।

तस्येदाहुः पिप्पलं स्वाद्वग्रे तन्नोन्नशद्यः पितरं न वेद॥२२॥

The tree where on the fine Birds eat the sweetness, where they all rest and procreate their offspring- Upon its top they say the fig. is luscious: none gaineth it who knoweth not the father j g. 1-164-22

It has been indicated that in the creation the beautiful creatures eat the sweet fruits of life. They enjoy the life and produces offsprings. At the peak of their life they say that fruit of life is luscious. But he, who knows not his generator father, for him all is useless.

The same has been depicted on the seal cat. No. 26 symbolically, where a human figure on the tree enjoying the fruit of life and the animal motif – tiger looking over just like a spectator over its shoulder from below. The tiger represent the consciousness and the human figure represents JīvĒman- bio soul DNA De oxy

ribose Nucleic Acid under the same sheltering tree (human body).



Figure - IV

Consciousness in the human body

The nature of life energy has been indicated with reference to the human body.

पुण्डरीकं नवद्वारं त्रिभिर्गुणैभिरावृतम्।

तस्मिन् यद् यक्षमात्मन्वत् तद् वै ब्रह्मविदो विदुः॥

The lotus flower of nine doors, covered with three strands (guṇa) - what soulful prodigy (yak-a) is within it, that the BrĒhama knower know Ath.10-8-43

अक्लामो धीरो अमृतः स्वयंभू रसेन तृप्तो न कुतश्चिन्नोः।

तमेव विद्वान् न बिभाय मृत्योरात्मानं धीरमजरं युवानम् ॥

The lotus flower of nine doors, it signifies human body, which has nine outlets with three qualities, growth, reproduction and energy transformation. The presence of life energy has been indicated through *Yak-a*.

Free from desire, wise (dhira), and immortal, self existent, satisfied with sap, not deficient in any respect- knowing that wise, un-ageing young soul, one is not afraid of death Ath.10-8-44

The presence of life energy has been expressed that life energy-consciousness is self-existent without desire, eternal, satisfied with the sap. It means the consciousness -life energy generates at its own, through the streaming of the sap for which the sap (water) is essential.

It means life energy- consciousness generates at its own due to the streaming of the protoplasm in the cell. In the multi cellular organisms, circulation of the blood and the nervous system assist it. In the plants movement of the sap assist it. With ageing of the concern organs and the cells the consciousness disappears. The hereditary character from the parents in the DNA regulates the lifecycle of an individual.

Electromagnetic energy

उतैषां पितोत वा पुत्र एषामुतैषां ज्ये उत वा कनिः।

एको ह देवो मनसि प्रविष्टः प्रथमो जातः स उ गर्भेऽ अन्तः॥

Both their father are also their son; both the chief are also the meanest (Kani—ka) of them; the one god, who has entered in to the mind, born the first, and he within the womb Ath. 10-8-28

The presence of electromagnetic energy has been expressed metaphorically.

पुर्णात् पूर्णमुदचति पूर्णं पूर्णेन सिच्यते।

उतो तदद्य विद्याम् यतस्तत् परिषिच्यते॥ २९॥

The full from the full he bends up (ud-ac); the full is poured with the full; also that may we know today, whence that is poured out Ath. 10-8-29

इयं कल्याण्यश्जरा मर्त्यस्यामृता गृहे। यस्मै कृता शये स यश्चकार ज्जरा सः॥

This beautiful one (F) (is) un-ageing, an immortal in the house of a mortal; for whom she (was) made, he lies; he who made (her) grew old Ath. 10-8-26

The creation has been evolved from the fundamental energy under space, time and the environmental conditions. The fundamental energy is unborn, un-ageing, as an immortal it resides in the house of mortals. It has been expressed that the synthesised components of the nature like atom and cells are complete in them selves and as a mortal they under go deterioration with ageing. In the atom and the cell the fundamental energy resides as immortal. It has been indicated that with the reproductive capacity of the cells, the life energy became young through cell division and the old cells under go ageing.

It has been expressed that the fundamental life energy-

consciousness has generated first in the atoms and in the womb. It has been termed as first born, than the fundamental energy proliferate along with the electrostatic energy of the nucleus as electromagnetic bond energy. They together have been termed as both the father and their son. The electromagnetic energy is present in the universe and at micro level in the atom and the cell. Hence it has been termed as chief as well as minute (*kani—ka*)

d. Origin of life- the Prokaryotic Cell- *ṽbhu*

. अयं देवाय जन्मने स्तोमो विप्रैभिरासया। अकारि रत्नधातमः॥

1. For the celestial Race this song of praise which gives wealth lavishly ṽg.1-20-1

The celestial race-cell, the *ṽbhu*-cell has been praised as the divine class or race of the *ṽbhus*, due to the fact that once the *ṽbhu*-cell has developed, it has maintained its continuity through cell division. The three sons of *Sudhanvan*-developing coaservates, who is said to have been descendant of *ṽngirasa* -viscous sap. They were named severally *ṽbhu*-eldest-mature Cell- *Vibhvan-vigorous*, and *VĒja* is youngest (Young new cell). They are collectively called as *ṽbhus* from the name of *ṽbhu* due to their skilful good work for the living-beings, as they are the only source of organic matter on the earth. Hence they have been termed as celestial race, which is the source of organic matter without check.

Theṽbhu represents a mature cell, once it has been synthesized in the nature, it maintains its continuity through the cell division, accordingly at the cellular level all the living organisms exhibits same functions in the nature. Hence the *ṽbhu* has been described as the celestial race.

य इन्द्राय वचोयुजा तत्क्षुर्मनसा हरी। शर्मिर्भिर्यज्ञमाशत॥२

2. They who for Indra, with their mind formed horses harnessed by a word, Attained by works to sacrifice.

Colloidal system-How the *ṽbhu*-cell initially came in to the existence? It has been indicated symbolically through mind, and the **horses harnessed by word** to take part in the creation sacrifice. In this way the appearance of the coaservate drops as closed primitive system with colloidal charged particles has been explained.

The formation of the charged particles in a hydrophilic colloidal system has been indicated by **Horses harnessed**. Where the *Indra*² electrical charge is the first, who has appeared with its +ive and –ive charges, this phenomena is just like the words appear from mind and spread rapidly, in the same fashion the charged particles exhibit movements with generation of vibrating sound, the sound can be grasped by the electrostatic energy of the charged particles just like phonoatomic effect. It has generated the series of actions and interactions as a part of creation sacrifice.

Accordingly with movements of the charged particles and actions and inter actions in a closed system a primary cell body has taken its shape in early primitive condition.

तक्षत्रासत्याभ्यां परिज्मानं सुखं रथम्। तक्षत्रेणुं संबर्द्धयाम्॥३

3. They for the two *NĒsatyas* wrought a light rolling car moving every way: They formed a nectar yielding cow.

Oxidation and reduction-The coaservative drops in the primitive condition has given the place for charged particles, showing movement just like light rolling car with movements in all directions. The two reactions oxidation and reduction have been expressed as two *NĒsatyas*. The energy generated due to these reactions have given the feed back to the drops, just like nourishment to the developing coaservates, it has been indicated by saying that they formed nectar yielding cow. The cow is metaphor for the nourishment.

The *sĒdhanvan*-coaservates-literary it means with internal inherent source of energy.

(The two *NĒsatyas* is a name of an *A,,vins* - wonder workers and other is *Dasra*-wonder worker as destroyer, they have been considered as the horse of the *Indra* and *A,,vins*- nucleotide pairs of the DNA, it means the activity of the DNA is enhanced by oxidation and reduction reactions.)

युवाना पितरा पुनः सत्यमेन्त्रा ऋजूयवः। ऋभवौ विष्टयक्रत॥४

4. The *ÿbhus* with effectual prayers, honest, with constant labour made, their Sire and Mother Young again.

Multiplication- the renewal of the cells by multiplication has

been expressed by saying that they made their parents young again.

To acquire the stage of multiplication, a considerable time period is necessary. It has been indicated by *effectual prayers, honest and constant labour*. Accordingly the process of synthesis with multiplication has been started with feed back of oxidation and reduction reactions,

The same has been indicated through the metaphor that they made *their Sire and Mother Young again*.

सं वो मदासो अग्नेन्द्रेण च मरुत्वता। आदित्येभिश्च राजभिः॥५॥

5. Together came your gladdening drops with Indra by the Maruts girt, with the *Adityas*, with the Kings.

Ageing-Accordingly with time under natural conditions gladdening drop appear with the charged activities of *Indra-Electricity*, water and *Adityas*- (twelve month). The appearance of gladdening drop reveals the fact that together with Indra, water and time the coaservate under go ageing.

It indicates about the beginning of the prokaryotic cell in the nature.

उत त्वं चमसं नवं त्वष्टुर्वस्य निष्कृतम्। अर्कतः चतुरः पुनः॥६॥

6. the sacrifice ladle, wrought newly by the God Tva—*E*'s hand (DNA) Four ladles have ye made thereof.

Cell division-The sacrificial ladles (developing cell) was made new by Tva—*E* with four ladle.

The synthesis of the genetic material with time has been expressed by Tva—*E*-DNA

Tva—*E* is a term for genetic material, it means first genetic material has been synthesized in side the cell, it has given the capacity for cell division during the primitive anaerobic conditions and in turn the cell has been divided in to four.

It indicates that the genetic material has been synthesized in the cell.

ते नो रत्नानि धत्तुं त्रिरा साप्तानि सुवृते। एकमेकं सुशस्तिभिः॥७॥

7. Vouchsafe us wealth, to him who pours thrice seven libations, ye to each. Give wealth, pleased with our eulogies.

The nature-Accordingly with time the nature became enriched with organic matter and gases. It has been expressed in an anthropomorphic manner symbolically, as if nature is asking to the *ṛbhus* to give wealth of organic matter and gases to the nature, who is providing thrice seven libations-thrice seven fuels, they are five major elements, twelve *ṛditya* (twelve months), three atmospheric layers and life energy.

They operate for the safety of the prokaryotic cell in the nature. It has been indicated that with the development of the coaservate in to a prokaryotic cell body, the cell enter in to the control of natural forces and the cells became the source of organic matter and gases in the nature. It has been indicated symbolically in an anthropomorphic manner through asking them *Give wealth, pleased with our eulogies.*

अधारयन्तु वह्नयोऽभजन्त सुकृत्यया। भागं देवेषु यज्ञियम्॥८॥

8. As ministering Priests they held, by pious acts they won themselves, A share in sacrifice with Gods.

The self acquired status in the nature. It means with their function in the nature, the *ṛbhus* them selves have acquired the status just like a priest with a share in the nature along with the natural forces.

The infinite nature- it has been indicated that with the formation of the prokaryotic cell in the nature, the *ṛbhus*- cells became the source of nutrients in the nature along with the natural forces. Accordingly the function of *ṛbhus* is just like priest in the creation sacrifice, they initiate the process of evolution of infinite nature with exchange of gases in the atmosphere and addition of organic matter. It is their share in the creation sacrifice, hence the *ṛbhus* have been mentioned just like as ministering priest.

In this fashion the process of evolution being initiated with the formation of a prokaryotic cell

e. Autotrophic *ṛ bhu*- cell

The most important event for life on the earth is generation of life energy and conversion of light energy in to the chemical energy by chlorophyll. The generation of life energy and synthesis of

chlorophyll in the early primitive condition has been indicated by addressing to the eukaryotic *y̐bhu* in an anthropomorphic manner in a symbolic fashion.

Generation of life energy-

उत्तिष्ठ ब्रह्मणस्पते देवयन्तस्त्वेमहे।

उप प्र यन्तु मरुतः सुदानव इन्द्रप्राशूभवा सचा॥

The holy work I wrought before is wrought again: my sweetest hymn is sung to celebrate your praise. Here, O ye y̐bhus, is this sea for all the Gods: sate you with Soma offered with the hallowing word y̐ g. 1-XL-1

The *y̐bhus* (cells) have been praised for their work and it has been said “O ye *y̐bhus*, is this sea for all the Gods”, it means for the natural forces the space in the cell is just like a vast ocean for their activity, which acts with the generation of magnetic life energy. The *Soma* represents magnetic life energy, which is being generated within the cell due to the movements of electrons in side a closed system and due to the streaming of protoplasm in the cell. The same is the symbol of life in a cell, where natural metabolic reactions sate the cell with their activities.

The generation of life energy sate the cell on an easy path; it has been indicated by the metaphor of *Soma offered with hallowing word*, where the cell is just like a vast sea for the activities of the natural components, with their functions, they gratify the cell with generation of life energy through vibrations. The sound of vibration has been expressed by the hallowing word and generation of life energy has been indicated by the *Soma* offered.

त्वामिद्वि सहसस्युन्न मर्त्यं उपब्रुते धने हिते।

सुवीर्यं मरुत आ स्वश्व्यं दधीत यो व आचुके॥२॥

2. When seeking your enjoyment onward from afar, ye, certain of my kinsmen, wandered on your way,

Sons of Sudhanvan, after your long journeying, ye came unto the home of liberal Savitē y̐ g. 1-110-2

It has been indicated that with generation of life energy, the sudhanvan's sons-prokaryotic cells were moving on their path of development, the formation of the viscous sap has been indicated by the kinsmen-*giras*-sap, from him the *y̐bhu* have descended.

During this long journey, they came in to the home of liberal SavitĒ, the SavitĒ gave them immortality.

प्रेतु ब्रह्मणस्पतिः प्र देव्येतु स्रुता।
अच्छा वीरं नयं पृङ्क्तिराधसं देवा यज्ञं नयन्तु नः॥३॥

3. Savitr gave you immortality, because ye came proclaiming him whom naught can hide. And this drinking- chalice of the Asura, which till that time was one; ye made to be fourfold y g. 1-110- 3

proclaiming him whom naught can hide.- It has been indicated that with generation of life energy, the ybhus came in contact of sap-protoplasm and SavitĒ-stimulator-enzymes; with this the generation of life energy with streaming of protoplasm and the metabolic reactions gave them immortality through cell division in a fourfold manner. It means once the generation of life energy has started in the cell body, it has maintained its continuity through cell division from generation to generation in a fourfold manner, it has been expressed in the words of ybhu- ye came proclaiming him whom naught can hide y g. 1-110- 3

The synthesis of chlorophyll and development of autotrophic nature has been indicated by cow from the skin. The cow is metaphor for nourishment and skin is for protoplasmic cell wall.

Life Energy- The life energy is symbol of consciousness in the living beings, it is generated in the cell body at its own with streaming of protoplasm and disappear with the ageing of the cell body. The nature of the life energy is synonym to the energy generated in an atom due to the spinning vibrations of the electrons around the nucleus, it interconnect the cellular body in the same fashion just as bond energy bind the atoms. It is a sort of magnetic energy the same has been described as Soma.

उप क्षत्रं पृञ्जीत हन्ति राजभिर्भुये चित्सुक्ष्मि दधे।
नास्यं वर्ता न तरुता महाधुने नार्भे अस्ति वज्रिणः॥८॥

8. Out of skin, O ybhus, once ye formed a cow, and brought the mother close unto her calf again. Sons of Sudhanvan, Heroes, with surpassing skill ye made your aged parents youthful as before y g. 1-CX-1

Chlorophyll- The synthesis of chlorophyll from the outer wall of the cell has been indicated by saying “out of skin they formed a cow, and brought the mother close unto her calf again,”

the cow is a symbol of nourishment, which feed the child with her milk just like a mother. The *ṛbhu* cell under go ageing with consumption of food, to check this, the *ṛbhu* has synthesized the chlorophyll pigments from outer wall of the cell at their own; in turn the cell became young with supply of food material through photosynthesis. In this way the young cells get the nourishment, and the source of nourishment became close to them, just like a mother came close to her calf again. It means with the development of autotrophic nature and cell division, the ageing cells became young. It has been indicated by “*ṛbhus, ye made your aged parents youthful as before.*” the daughter cells have been termed as young parents.

f. Development of Eukaryotic cell- *ṛbhu*-

इन्द्रो हरीं युयुजे अश्विना रथं बृहस्पतिर्विश्वरूपामुपाजत।

ऋभुर्विश्वा वाजो देवाँ अगच्छत् स्वर्पसो यज्ञियं भागमैतन॥६॥

6. *Indra hath yoked his Bays, the A.,vin's car is horsed; B,haspati hath brought the Cow of every hue. Ye went as ṛbhu, Vibhvan, VĒja to the Gods Rg. 1-161-6*

For the further evolution Bays of *Indra*, electromagnetic energy carries it towards the evolution. It has given it a push for further evolution. The A.,vin's car is horsed, it means the oxidation and reduction reactions came in to their full functions and *the B,haspati* (nucleus) brought the cow of every hue, the cow is metaphor for the organic matter in the living-beings. It means through the regulation of the metabolic reactions and the genetic material has brought biodiversity in nature, where every cellular organism acting as food for the other through food chains and food webs in the nature. It has been expressed as **cow of every hue**, where plants are primary producers and animals are secondary producers. The cow is a metaphor for nourishment. Accordingly the cells have acquired different stages as *ṛbhu*, *Vibhvan*, and *VĒja* during their life cycle. These three represents three stages of a cell as young, vigorous and old, their functions are under the natural factors.

निश्चर्मणो गामरिणीत धीतिधिर्या जरन्ता युवशा ताकृणोतन।

सौधन्वना अश्वादश्चमत्क्षत युक्त्वा रथमुप देवाँ अयातन॥७॥

7. *Ye by your wisdom brought a cow from out a hide; un to that ancient Pair ye gave again their youth. Out of a horse, Sudhanvan's Sons, ye formed a horse: a chariot ye equipped and went unto the Gods* िग. 1-161-7

f. Horse out of a horse - in the next step of evolution, the िbhus (cells) have developed a self nourishment system, through the development of proto-chlorophyll in the primitive condition the same has been indicated through the 'Cow from the skin.' The cow is metaphor for nourishment, which acts as a horse and the cell became well equipped and young. It means in the primitive conditions, genetic material as RNA or DNA first has been synthesized in side a closed system, then with time proto-chlorophyll has synthesized from the cell wall, (In the primary conditions some compounds may have been deposited on the surface of the cells, which in turn may have given the way for the development of the cell-wall and proto-chlorophyll with time). The synthesis of proto-chlorophyll from DNA has acted as a horsepower for the evolution, accordingly it has been said "Ye (िbhu) brought a horse out of a horse." It means the DNA - genetic material and chlorophyll are like a horsepower for the िbhu-cell. Thus the cell became resistant to survive in the nature through the cell division.

g. The life on the earth

The first life has originated on the earth in the water. The life is associated with three events in the life cycle, birth, life and death under the cosmic principles. Now it is a scientific fact that life on the earth is very much supported by the ozone layer in the atmosphere, for the life water is essential, and the triplet code of DNA with triple bond of hydrogen, regulate the life cycle with hereditary characters. All these facts about the life have been expressed symbolically addressing to the िbhu-cell in an anthropomorphic manner.

The first cell has been synthesized in the seawater and has been termed as िbhu. It has been expressed symbolically by asking a question in an anthropomorphic manner to िbhu-cell.

यदक्रन्दः प्रथमं जायमान उद्यन्त्समुद्रादुत वा पुरीषात्।

श्येनस्य प्रक्षा हरिणस्य बाहू उपस्तुत्यं महि जातं ते अर्वन्॥१॥

1. What time, first springing in to life, thou neighed, proceeding from the sea or upper waters,

Limbs of the deer hadst thou, and eagle pinions, O steed, thy birth is high and must be lauded. y g. 1-163-1

It has been asked that at what time the *y̐bhu* has sprang in to life, the answer has been given that life has originated first in sea or in upper water. The life energy is having a speed like an eagle or Deer. The birth of life is very high, it must be lauded.

युमेन दत्तं त्रित एनमायुनगिन्द्राणं प्रथमो अर्ध्यतिष्ठत्।
गन्धर्वो अस्य रश्मनामगृष्णात्सूरादश्चैवसवो निरतष्ट॥२॥

2. This steed which, Yama gave hath Trita harnessed, and him, the first of all, hath Indra mounted.

His bridle the Gandharva grasped. O Vasus, from out the Sun ye fashioned forth the Courser y g. 1-163-2

It has been expressed that the steed of life is *Trita* harnessed, which has been given by *Yama*, it is an indication towards the three stages of life- childhood, young and old age. The *Yama* represents chromosome, the chromosomes have the information for the development of the physical body, as such it has been said that it has been given by *Yama*, the life has been first mounted by *Indra*. The *Indra* represents electricity, in the early stages due to the movements of the charged particles in the developing coaservates, the life energy has been generated, hence it has been said that *Indra* has mounted first. It has been grasped by *Gandharva* as bridle, the *Gandharva* represents viscous mass of protoplasm, due to the streaming movements of the protoplasm life energy has its existence in the cell, when streaming get blocked, the life energy disappear, hence it has been said that the life energy has been grasped by the *Gandharva* as bridle, where bridle is metaphor for the life energy. *O Vasus*, it is an expression for the a-biotic substances, which have synthesized the *y̐bhu*- cell in the water first, The sun is the main energy source on the earth, hence it has been said that the Courser-the cell has been fashioned by the sun.

असि युमो अस्यादित्यो अर्वन्नसि त्रितो गुह्येन वृतेन।

असि सोमेन समया विपृक्त आहुस्ते त्रीणि द्विवि बन्धनानि॥३॥

3. Yama art thou, O horse; thou art *ṛditya*; Trita art thou by secret operation.

Thou art divided thoroughly from Soma. They say thou hast three bonds in heaven that hold thee ṽ g. 1-163-3

Yama art thou, O horse; thou art *ṛditya*; Trita art thou *ṽbhu*-cell in by secret operation. Due to the vigorous nature of the nature, the *ṽbhu* has been called as Steed metaphorically, which is taking part in the creation sacrifice, it came in to the existence from the Yama-chromosome and due to the twelve *ṛditya*-twelve months under temperature pressure gradient, hence it has been said that thou art Yama, thou art *ṛditya*, Trita art thou by secret operation, - it indicate about the synthesis of *ṽbhu*-cell due to the Triple bond of the nucleotide pairs of the DNA. The genetic material, DNA has the information for the synthesis of the cell body. It bears the hereditary characters to synthesize the cell in nature.

Thou art divided thoroughly from Soma it means the whole synthesis is due to the Soma- magnetic energy, they say thou hast three bonds in heaven, which hold thee, it means Ozone layer in the atmosphere, which absorbs the ultra violet rays and due to which life is present on the earth.

त्रीणि त आहुर्दिवि बन्धनानि त्रीण्यप्सु त्रीण्यन्तः समुद्रे।

उतेव मे वरुणश्छत्सिर्वन्यत्रां त आहुः परमं जनित्रम्॥४॥

4. Three bonds, they say, thou hast in heaven that bind thee, three in the waters, three within the ocean.

To me thou seems Varuṇa, O Courser there where they say is thy sublimate birth place. ṽ g. 1-163-4

It has been expressed that *ṽbhu*-cell has three bonds in heaven, it represents ozone layer in the atmosphere, due to the presence of Ozone layer in the upper atmosphere life is present on the earth, because the Ozone layer absorbs the high energetic ultraviolet rays, and only visible light come on the earth's surface, three bonds in the water, it means two hydrogen and a single atom of oxygen, they constitute the water molecule, the water is a life resource for the *ṽbhu*-cell, three bonds within the ocean, it means in the ocean of

biological world of life, the *Trita* triple bond of the nucleotide pair is main source of the development.

To me thou seems *Varuṣa*, the *yḥhu* seems like *Varuṣa*, it indicates that the cellular mass came in to the existence due to gravity and aggregation of the materialistic substances as a sublimate unit, where the Courser- life energy has its birth place, due to the streaming of the protoplasm in the cell.

In this way in a symbolic fashion the generation of life energy in the cell has been expressed.

To day we know the fact that water is life resource, ozone layer protects the life on the earth, and DNA is responsible for biodiversity in the nature. The same has been indicated.

14. The Organic Evolution

10. One downward to the water drives the crippled cow, other

trims the flesh brought on the carving board.

One carries off the refuse at the set of sun. How did the Parents aid their children in their task?

The Organic Evolution- The evolution proceeds forward in the nature under space, time and environmental conditions with the origin of life- consciousness.

The organic evolution on the earth is related with the ecological succession, with the development of the eukaryotic autotrophic cell. Where photosynthesis on one hand is responsible for the development of the carbon skeleton and DNA is responsible for the genetic modification with multiplication and successive evolution. The consciousness has also shown its evolution simultaneously, with species diversity and complexity in the nature, with modification of the physical environment.

The evolution proceeds forward under Ecological and Physiological Principles - The principles have been explained metaphorically in an anthropomorphic manner.

इदमुदकं पिबतेत्यब्रवीतनेदं वा घा पिबता मुञ्जनेर्जनम्।
सौधन्वना यदि तन्नेव हयैथ तृतीयै घा सर्वे मादयाध्वै॥८॥

8. *Drunk ye this water, were the words ye spake to them; or drink ye this, the rinsing of the MÊnja-grass. If ye approve not even this, Sudhanvan's Sons, then at the third libation gladden ye yourselves* ĳ g. 1-161-8

The importance of the water for life has been indicated through “*ye drink this water or ye drink water through rinsing of MÊnja grass*”, which indicates that animals drink water and plant (MÊnja grass) absorbs water through their root system. Accordingly water provides streaming capacity to the protoplasm and the life energy. It has been indicated that with scarcity of water the ĳbhu-cell will under go ageing them selves. Otherwise the ‘*Gladdening drop*’-ageing will approach the ĳbhu-cell in their third phase of the development.

After indicating the importance of water, they have expressed the ecological and physiological functions in a symbolic fashion

through conversation in an anthropomorphic manner.

आपो भूयिष्ठा इत्येको अब्रवीदग्निर्भूयिष्ठ इत्यन्यो अब्रवीत्।
वर्षयन्ती बहुभ्यः प्रैको अब्रवीदता वदन्तश्चमुसौ अपिशत॥९॥

9. *Most excellent are waters, thus said one of you; most excellent is Agni, thus another said*

Another praised to many a one the lightening cloud. Then did ye shape the cups, speaking the words of truth y g. 1-161-9

Looking to the functions of the *y bhu*-cells in nature, according to one *y bhu* said that water is essential. The second *y bhu* said that *Agni*-energy is most important. The third one praised many factors and said that lightening clouds are important, than the *y bhu* (cell) it self has revealed the truth through a riddle, about the basic principles, under which the ecosystem is working as a system.

श्रोणामेक उदुकं गामवाजति मांसमेकः पिशति सुनयाभृतम्।
आ निष्ठुचुः शकृदेको अपाभृत्किं स्वित्पुत्रेभ्यः पितरा उपावतुः॥१०॥

10. *One downward to the water drives the crippled cow, other trims the flesh brought on the carving board.*

One carries off the refuse at the set of sun. How did the Parents aid their children in their task? y g. 1-161-10

The *y bhu* (cell) has expressed the truth about respiration, photosynthesis and the decomposition of the dead parts, through which the system operates in the nature. The cow is metaphor for the nourishment “One downward to the water drives the crippled cow.” The term ‘*crippled cow*’ has been used for the unwanted CO₂ (carbon di oxide), the water moves in the downward direction in the same fashion carbon di oxide is released from the cell. Which is unwanted in the cell and as such get released during the respiration, but CO₂ is useful too for the photosynthesis and a source for the carbon skeleton of the living-beings, hence the seers have used the term “crippled cow” for the carbon di oxide.

“Another trims the flesh brought on the carving board.” Here the term ‘flesh’ has been used for the food material, which get synthesized during the photosynthesis in the cell (carving board), which get transported through the respiration and intermediary metabolism as food through living-beings in the nature.

“One carries off the refuse at the set of sun.” Here the term ‘set of sun’ has been used for the end of life symbolically, The dead parts under go decomposition through microbes in the nature, in turn waste material get released from the surface, these principles have given the way for the evolution of the living-beings. Hence degradation and decomposition of the waste material by the decomposers has been indicated.

These three important ecological and physiological functions are going on in the nature, through which the nature is working as an ecosystem.

Looking towards the ecosystem a question has been asked “how did the parents aid their children in their task”.

उद्धृत्स्वस्मा अकृणोतना तृणं निवत्स्वपः स्वपुस्यया नरः।
अगोहास्य यदसस्तना गृहे तदुद्येदपृथ्वो नानु गच्छथ॥११॥

11. On the high places ye have made the grass for man, and water in the valleys, by your skill, o Men. ybhus, ye iterate not today that act of yours, you are sleeping in the house of him whom naught can hide y.g. 1-161-11

The parents represent pre-existing living-beings. The answer has been given through the grass for man and water in the valley. Through this biogeochemical cycle has been indicated. It means the pre-existing living-beings are the source of nourishment for the ecosystem, through the development of the soil system. Where after the death the dead organs get converted in to the organic manure and water initiates the growth of the grasses. It means the process of the development of the ecosystem through the succession has been indicated. In an ecosystem, the pre-existing organisms with succession help in the development of soil and the organic matter, which help in the organic evolution of the living-beings.

The work of ybhu (cell) due to which the creation system came in to existence is not for once only but it is repeated due to the fact that “ he is sleeping in the house of him whom nothing can hide”, it means life energy gets generated at its own, through the pre - existing cells with reproduction and cell division.

सुप्मील्य पुर्यसर्पतु कव स्वित्तात्या पितरा व आसतुः।

अशपत् यः कस्मिन् व आददे यः प्राब्रवीत्तो तस्मा अब्रवीतन॥१२॥

12. as, compassing them round, ye glided through the worlds, where had the venerable Parents their abode?

Ye laid a curse on him who raised his arm at you: to him who spake aloud to you ye spake again y g. 1-161-12

It has been expressed in a symbolic manner with addressing the *y bhus*-cells, that you have over spread the world through cell division gradually. It is an indication towards the population of the living-beings in the nature, where are your venerable Parents and their abode?

The parents of *y bhus*-cells are heaven and earth, accordingly the answer has been given in the succeeding verse that the *Maruts* move in the heaven and the earth. The *Maruts*-rain clouds is an indication towards the source of water vapour's energy, as indicated by *Agni*-energy, from the middle atmosphere wind approaches the earth, where *Varuṇa*-gravity, due to the gravitational force water has accumulated in the sea, it has been indicated by *Varuṇa in the sea's gathered waters*. As such the heaven and earth are the guardians of the living-beings, it has been indicated.

सुषुप्त्वांसं ऋभुवस्तदपृच्छतागोह्य क इदं नो अब्रूवुधत्।

श्रानं वस्तो बोधयितारमब्रवीत्संवत्सर इदमुद्या व्यख्यत॥१३॥

When ye had slept your fill, ye *y bhus*, thus ye asked, O thou whom naught may hide, who now hath wakened us? The goat declared the hound to be your wakener. That day, in a full year, ye first unclosed your eyes. Rg. 1-161-13

In an anthropomorphic manner through the conversation between the *y bhus* and the nature, the secret of the dormancy period and the germination of the resting spores have been revealed.

It has been asked that when ye had slept your fill, it means, when you were sleeping, it is an indication towards the dormant condition of the resting spores of the plants. The resting spores are thick walled and are produced by the aquatic plants to face the unfavourable conditions in the nature, with return of the favourable conditions, such as rains, they germinate and produce the new plant.

O thou whom naught may hide, it is a matter of surprise to *ṽbhus*-cells that *to whom naught may hide*, it means once the life energy has been established in the cells, it may not be conceal in any way? And after the sleeping-dormant condition, the *ṽbhus* have asked, *who has wakened us*? The answer has been given through a metaphor of goat and hound. It has been declared by the goat that hound is your waker. The goat is metaphor for the *ṽbhu*-cell, which is a symbolical expression for *ṽbhu*-cell, which take part in the creation sacrifice with oblation of its cell body in the nature through sacrifice-actions and interactions, just like the goat is brought for oblation -sacrifice in the sacrificial rituals. The declaration of the goat that hound is your waker is a metaphor to express the germination of the resting spores, it means just like the goat became active to escape from the eye of the hound to see him, in the same fashion with the return of favourable conditions the germination has been started with the initiation of respiration. It means the respiration is the hound, which has wakened the *ṽbhu*-cell with life energy. It has been indicated

It has been said *that day, in a full year, ye first unclosed your eyes*. It means with the initiation of respiration, the resting cells became active to complete their annual life cycle, it has been indicated through the year and *ye first unclosed your eyes*.

दुवा यान्ति मरुतो भूम्याग्निर्यं वातो अन्तरिक्षेण याति।
अद्भिर्याति वरुणः समुद्रैर्युष्माँ इच्छन्तः शवसो नपातः॥१४॥

14. *The Maruts move in heaven, on earth this Agni; through the mid-firmament the Wind approaches.*

Varuṇa in the sea's gathered waters, O Sons of Strength, desirous of your presence Rg. 1-161-14

The parents of *ṽbhus*-cells are heaven and earth accordingly the answer has been given that the *Maruts* move in the heaven and the earth, the *Maruts*-rain clouds is an indication towards the source of water vapour's energy, as indicated by *Agni*-energy, from the middle atmosphere wind approaches the earth, where *Varuṇa*-

gravity, due to the gravitational force the water has been accumulated in the sea, it has been indicated by *Varuṇa in the sea's gathered waters*, as such the heaven and earth are the guardians of the living-beings, it has been indicated.

With this the *ṛbhus*- the sons of *sudhanvan*, the powerful *ṛbhu* have been praised and their presence in the nature has been desired.

15. The secret of creation

The creation has been evolved from a fundamental energy under space, time and the environmental conditions. How the creation came in to the existence and its source? Who feed the creation and

held it up with homage? It has been explained under holy oil's mysterious title. It explores the secret of creation.

In the atom due to the spinning of the electrons around the nucleus the magnetic energy generates. The magnetic energy in association with the electrostatic energy of the nucleus produces electromagnetic bond energy. It has been expressed as the centre of *Am, ta* for the creation.

The creation has been described as the four horned buffalo, where four horns are symbolic expression for the Atom which has a four dimensional structure (the three fundamental particles and the fourth is generation of the magnetic energy, due to the spinning of the electrons around the nucleus.) it has the base or the essence of the creation, the essence has been termed as Gh,ta-clarified butter, it means the essence of the buffalo milk is Ghee, in the same fashion the four dimension of the atom has the essence of the creation y g.4-58

The creation has been evolved from a fundamental energy under space, time and the environmental conditions. It has been indicated that the fundamental energy is complete in it self and it remains constant in all the state. “*Whence that is poured out*”, it means one should know when it has been generated first Ath. 10-8-29

The answer has been given through the first born in the womb (centre). It means due to the movement of the electrons around the nucleus and due to the movement of the cytoplasm around the nucleus in a cell it has been generated at its own first. It indicates that the components of the nature, which have been derived from the fundamental energy are complete in them selves but under go deterioration with time.

इयं कल्याण्यश्रू मर्त्यस्यामृता गृहे।

यस्मै कृता शये स यश्कारं ज्जारं सः॥

This beautiful one (F) (is) un-ageing, an immortal in the house of a mortal; for whom she (was) made, he lies; he who made (her) grew old Ath. 10-8-26.

The fundamental energy is unborn, un-ageing, as an immortal it resides in the house of mortals. It has been expressed that the

synthesised components of the nature like atom and cells are complete in them selves and as a mortal they under go deterioration with ageing. In the atom and the cell the fundamental energy resides as immortal. It has been indicated that with the reproductive capacity of the cells, the life energy became young through cell division and the old cells under go ageing.

समुद्राद्रुर्मिर्धुमाँ उदारुपांशुना सममृतत्वमानत्।
घृतस्य नाम गुह्यं यदस्ति जिह्वा देवानाममृतस्य नाभिः॥१॥

FORTH from the ocean sprang the wave of sweetness: together with, the stalk it turned to Am, ta.

That which is holy oil's mysterious title: but the Gods' tongue is truly Am, ta's centre ÿg. 4-58-1

It has been expressed that from the ocean of universe the solar winds are the wave of sweetness. It has the stalk of fundamental charged particles; they turned in to **Am, ta** for the creation with formation of the atom.

In the atom due to the spinning of the electrons around the nucleus, the magnetic energy generates. The magnetic energy in association with the electrostatic energy of the nucleus produces electromagnetic bond energy. It has been expressed as the centre of **Am, ta** for the creation. The nucleus of the atom, around which electrons move in the orbits and the magnetic energy generates, the nucleus has been termed as tongue.

Both their father are also their son; both the chief are also the meanest (Kani—ha) of them; the one god, who has entered in to the mind, born the first, and he within the womb Ath. 10-8-28

It has been expressed that the fundamental life energy-consciousness has generated first in the atoms and in the womb. It has been termed as first born, than the fundamental energy proliferate along with the electrostatic energy of the nucleus as electromagnetic bond energy. They together have been termed as both the father and their son metaphorically. The electromagnetic energy is present in the universe and at the micro level in the atom and the cell. Hence it has been termed as chief as well as minute (*kani—ha*)

वृथं नाम प्र ब्रवामा घृतस्यास्मिन्यज्ञे धारयामा नमोभिः।
उप ब्रह्मा शृणवच्छस्यमानं चतुः शृङ्गोऽवमीदगौर एतत्॥२॥

Let us declare aloud the name of Gh, ta, and at this sacrifice hold it up with homage.

So let the BrEhman hear the praise we utter. This hath the four-horned Buffalo emitted ÿ g.4-58-2

The essence of the creation has been described as the four horned buffalo, where four horns are symbolic expression for the Atom which has a four dimensional structure ²(the three fundamental particles and the fourth is generation of the magnetic energy, due to the spinning of the electrons around the nucleus.) It has the base or the essence of the creation, the essence has been termed as *Gh, ta*-clarified butter, it means the essence of the buffalo milk is Ghee-clarified butter in the same fashion the four dimension of the atom has the essence of the creation ÿ g 4-58

चत्वारि शृङ्गा त्रयो अस्य पादा द्वे शीर्षे सप्त हस्तासो अस्या
त्रिधा बद्धोर्वृषभो रौरवीति मुहो देवो मर्त्यो आ विवेश॥३॥

Four are his horns, three are the feet that bear him; his heads are two, his hands are seven in number.

Bound with a triple bond the Steer roars loudly: the mighty God hath entered in to mortal's ÿ g.4-58-3

The four horns is a symbolic expression of the DNA, where four horns represents ²four base of the DNA., two head represents two strips of the DNA, three legs represents- a triplet code of the DNA, the seven hands represents seven bonds in between triplet nucleotide pair, with its triple bond the DNA roars loudly just like a steer. It has entered in to mortals (living-beings).

त्रिधा हितं पुणिभिर्गुह्यमानं गवि देवासो घृतमन्वविन्दन्।
इन्द्र एकं सूर्य एकं जजान वेनादेकं स्वधया निष्टतक्षुः॥४॥

That oil in triple shape the Gods discovered lay down within the Cow, concealed by Pañis.

Indra produced one shape, SÊryā another: by their own power they formed the third from Vena ÿ g. 4-58-4

The oil in triple shape-the *Indra*- has produced one shape in the form Electrostatic energy of the atom another shape has been

produced by the *SÊryā*-sun in the form of the charged particles, by their own power they have formed the third from *Vena*. It means through the generation of the sound during the movements of the charged particles, the third shape of oil in the form of magnetic energy has been generated at its own. In this way formation of the atom has been indicated.

The mysterious oil flowing from the universe has been used to express the solar winds flowing from the sun. It has been indicated that the holy oil-solar waves have three basic fundamental charged particles- electron, proton and neutron.

The Gods have discovered laid down within the cow, concealed by the paṛis. It has been indicated that the creative power of the charged particles is in the Atom. The charged electrons moves around the nucleus and generates the magnetic energy, this phenomena has been termed as that Gods-charged particles have discovered the cow lay down within them. The cow is a metaphor for creative power of the charged particles, which is hidden in them.

The formation of the atom is associated with the electrostatic energy of the nucleus. Hence it has been said that *Indra* has produced one shape.

The other shape by *sÊryā*-it means the source of the charged particles is the sun.

The third shape from *Vena*- Due to the spinning and vibrations of the electrons around the nucleus magnetic energy generates, it has been explained as that the third shape from *Vena*, which is hidden in them just like *Paṛis*-concealed the wealth.

एता अर्षन्ति हृद्यत्समुद्राच्छतव्रजा रिपुणा नावचक्षे।
घृतस्य धारां अभि चाकशीमि हिण्वयो वेतुसो मध्यं आसाम्॥५॥

From inmost reservoir in countless channels flow down these rivers which the foe beholds not,

I look upon the stream of oil descending, and lo! The Golden Reed is there among them y g. 4-58-5

These countless channels are flowing from the universe on the earth just like the rivers. No body can check them the golden reed is among them. It means the cosmic principle is among the

fundamental particles.

सुम्यकस्त्रवन्ति सुरितो न धेनो अन्तर्हृदा मनसा पूयमानाः।
एते अर्षन्त्यूर्मयो घृतस्य मृगाइव क्षिपुणोरीषमाणाः॥६॥

Like rivers our libations flow together, cleansing themselves in inmost heart and spirit.

The streams of holy oil pour swiftly downward like the wild beasts that fly before the bowman ṛ g.4-58-6.

Just like the rivers our libations flow together, it has been expressed that the triple shaped oil is also flowing together from our sacrifice through heart and spirit, it pour out swiftly just like the wild beast fly before the bow man. The release of the waste material and the gases from living-beings has been indicated.

सिन्धौरिव प्राध्वने शूघनासो वातप्रमियः पतयन्ति युद्धाः।
घृतस्य धारा अरुषो न वाजी काष्ठा भिन्दन्नुर्मिभिः पिन्वमानः॥७॥

As rushing down the rapids of a river, flow swifter than the wind the vigorous currents,

The streams of oil in swelling fluctuation like a red courser bursting through the fences ṛ g. 4-58-7

The vigorous currents flowing from the universe are just like rapid rivers, flowing swifter than the wind. They cross the obstacles just like red courser bursting through the fences.

अभि प्रवन्तु समनेव योषाः कल्याण्यशुः स्मर्यमानासो अग्निम्।
घृतस्य धाराः सुमिधो नसन्त ता जुषाणो हर्यन्ति जातवेदाः॥८॥

Like women at a gathering fair to look on and gently smiling, they incline to Agni.

The streams of holy oil attain the fuel, and jātavedas joyfully receives them ṛ g.4-58-8

It has been expressed that just like a fair woman welcome in the gathering. In the same fashion the *Jātaveda* Agni-terrestrial fire receives the flowing currents.

कन्याइव वहतुमेतवा उ अङ्ग्यञ्जाना अभि चाकशीमि।
यत्र सोमः सुयते यत्र यज्ञो घृतस्य धारा अभि तत्पवन्ते॥९॥

As maidens deck themselves with gay adornment to join the bridal feast, I now behold them.

Where Soma flows and sacrifice is ready, thither the streams of holy

oil are running y g.4-58-9

It has been expressed in an anthropomorphic manner that just like the maiden deck them selves for a bridal feast and I behold them, in the same fashion I behold the flowing currents, where in my body *Soma*-magnetic life energy- consciousness is flowing and the sacrifice is ready.

अभ्यर्षत सुष्टुतिं गव्यमाजिमुस्मासु भुद्रा द्रविणानि धत्त।

इमं यजं नयत देवता नो घृतस्य धारा अभित्पवन्ते॥१०॥

Send to our eulogy a herd of cattle: bestow upon us excellent possessions. Bear to the Gods the sacrifice we offer: the streams of oil flow pure and full of sweetness y g. 4-58-10

It has been desired that for the prosperity on the earth, the environment may remain clean, unpolluted and sweet.

धामन्ते विश्वं भुवन्मधि शितमन्तःसमुद्रे हृद्यन्तरायुषि।

अपामनीके समिधे य आभृतस्तमश्याम मधुमन्तं त ऊर्मिम्॥११॥

The universe depends upon thy power and might within the sea, within the heart, within all life.

May we attain that sweetly-flavored wave of thine, brought, at its gathering, over the surface of the floods y g. 4-58-11

It has been expressed that what ever is present in the creation depends upon the power of the currents flowing from the universe.

a. Aditi- Infinite nature

The fundamental particles constitute the *Aditi*-micro nature and from the micro nature with the evolution of the solar system the *Aditi*- infinite nature came in to the existence with its full functions. The *Aditi*-nature is complete in it self and self regulated. The living beings have been expressed as *Pancjana*-the association of five gross elements. It has been expressed that in this world what is and what is to be is nature only. The concept is synonym to our modern ecological thinking.

अदितिर्द्यौरदितिरन्तरिक्षमदितिर्माता स पिता स पुत्रः।

विश्वे देवा अदितिः पञ्च जना अदितिर्जातमदितिर्जनित्वम्॥१०॥

Aditi is heaven, Aditi is mid air, Aditi is the mother the Sire and son.

Aditi is all Gods, aditi five classed men, Aditi all that has been and

shall be born y g.1-89-10

b. DNA-Cow omniform

यमः परोऽवरो विवस्वान् ततः परं नाति पश्यामि किं चन।

यमे अध्वरो अर्धं मे निविष्टो भुवो विवस्वान्वाततान ॥३२॥

*Yama beyond, below Vivasvat beyond that do I see nothing whatever;
into Yama has entered my sacrifice, Vivasvat stretched after the worlds
(bhu). Atharvaveda 18-2-32*

The uuniversal occurrence of genetic material DNA in the living-beings has been expressed symbolically, synonym to our modern knowledge of Genetics, that in the biological world, which is before us, I see nothing beyond *Vivasvat* – DNA. From the DNA the chromosomes have been synthesized. They have stretched in the world in the form of food chains and the food webs, it has been expressed.

16. Cycle of thought Energy and role of DNA

Introduction

The role of thought energy in the life has not been established so far in the scientific world, similarly the structure and function of the DNA is restricted to the protein synthesis and gene manipulation. Now the scientists have realized 'holistic paradigm.' in the same way importance of the *VĒc-* energy may be established in the future.

The Vedic knowledge reflects that they were fully acquainted with the structure and function of the DNA as we know today. Hence, looking to the similarity of the knowledge up to the DNA, cosmic principles and theories of modern science, it is worth to examine the role of thought energy and DNA in the cycle of thought energy, as indicated in the *ṛ g.* 10-184-1, 2, 3

1. *May Vi-ṣu form and mould the womb, may Tva-Ē duly shape the forms.*

PrajĒpati infuse the stream and dhata lay the germ for thee.

2. *O SinĪvĒĪ set the germ, set thou the germ SarasvatĪ. May the twain gods bestow the germ. The A,,vins crowned with lotuses.*

In the *ṛ gveda*, it has been indicated that the *Tva-Ē-DNA* give shapes to the infant in the womb and the germ is get set by the *SinĪvĒĪ* (duplicating DNA) and *SarasvatĪ* (*VĒc-* energy) in the womb. Accordingly *A,,vins* (nucleotide pairs) crowned with lotuses, it means the development of the children is there according to the hereditary characters in the DNA. Where the *SinĪvĒĪ* is the code initiator and the *SarasvatĪ* (thought energy) opens the door of a language on the DNA, accordingly from the *A,,vins*-nucleotide pairs

of DNA, physical cellular body develop just like the lotus flowers.

The discovery of DNA by the Watson and Crick and Vedic knowledge confirm the universality of DNA in the living-beings. On the same line scientists may be able to search the language code of rebirth in future as indicated in the Vedic hymns.

B, hadĒraṣṭyaka Upni-ad

On the earth, human species is highly evolved under going evolution of mental qualities under the cycle of rebirth and death. Through the experience of past deeds and present thought, evolution of the mental qualities from animal instincts to human instincts- *Tamo guṣṭa to Rajo guṣṭa and Sato guṣṭa* under the cycle of rebirth is the aim of life as described in B, hadĒraṣṭyaka Upni-ad.

Thought Energy

The creation is a system, which is self sufficient and self regulated under the fundamental energy. The system is operating under the bio-geo-chemical cycles, synthesis and degradation is the law of nature, where nothing is stable, every thing is moving forward towards its disintegration with time. In the same fashion the living-beings exhibit their life cycle. The cellular body undergo ageing and disintegration with time. The time is main factor, which has the beginning, with rotation of the sun at its axis. The one complete rotation of the sun at its axis is known as *SEṣṣ vatsar kĒla*. The *kĒla*-time is supposed to start with entry of the sun in 'Aries'. Just like under the cosmic principle sun shows rotation in the same fashion living-beings complete their life cycles as per the hereditary characters received from the parents through De oxy ribose Nucleic Acid DNA, and bio-geo-chemical cycles operate in the nature. In the same sequence fundamental energy and thought energy - *VĒc* exhibits their impact in cyclic manner. The fundamental energy is symbol of consciousness and the thought energy is the symbol of fate of an individual in the life, due to this even the time twins have different mentality and fate.

It is a scientific fact that every thing is perishable under space time and environmental conditions, but the fundamental energy is eternal and imperishable. In the same fashion, *VĒc*- thought energy is synonym to fundamental energy and imperishable. They persist in the atmosphere even after the death of an individual, and particular

to an individual person. They exhibit their impact with the function of DNA in the living-beings. The thought energy has described as 'footless'.

She that is footless goes first of them that have feet: who understood that of you, O Mitra and Varuṇa? The embryo brings the burden of her; she (?) fills (?) Pr) truth protects (ni-pa) untruth.

It suggests that the thought energy of a dead person persists in the universe, who move from the heaven in to the living beings, who have feet-life, and during the duplication of the DNA in the embryo, it initiates the burden of her deeds - it means the language code, which open on the DNA, it decides the fate of the individual as per his 'footless' thought energy, which have its appearance with the birth. It has been indicated by *the embryo brings the burden of her*. Atharvaveda-IX-10-23

De oxy ribose Nucleic Acid - DNA

The whole play of life on the earth is due the two complimentary DNA base pairs (Adenine, Guanine, Thymine and Cytosine.) A=T, G ≡ C, the universal nature of the DNA has been expressed by the omni-form nature of *Tva—Ē*

त्वष्टां रूपाणि हि ब्रुधुः पशून्विश्वान्समानुजे। तेषां नः स्फुतिमा यज॥९॥

Tva—Ē the lord hath made all forms and all the cattle of the field:

Cause them to multiply for us y g. 1-188-9

The DNA has been termed as *Tva—Ē*, who is shaper of all creatures with multiplication, hence it has been termed as omni-form (*Vi, varupa*), it means the DNA is present in all the living-beings.

For *Tva—Ē* he who knows each sacred song, brought thee to life, pre eminent o'er all the things that be.

It has been expressed that *Tva—Ē*² DNA is a supreme genetic material, which is the source of life, and it bears the information of life and death. it regulate the life cycle of the individual through hereditary characters received from the parents.

The chromosomes and the DNA maintain their continuity in the living-beings through their off-springs. The DNA records the deeds and thoughts in its genetic language code sequence, the language

remain active through out the life and the language is imperishable. The symbols, which we see from the eyes and the words, which we hear through the ears are acts as thought stimulates, just like enzymes stimulate the metabolic reactions in the cell body. The impact of the symbol and the words is on the whole body, but we perceive and grasp them through the centres of sense organs only depending on the capacity of eye-sight and frequency of sound. Although they have impact on the body at micro level through phonoatomic effect. It is just to justify the impact of thought energy prevailing in the atmosphere, which influence the living organism without notice according to the mentality of the person concern in a particular situation, and unknowingly, and he acts accordingly. It is possible only, when these two $V\dot{E}c$ - energy have same frequency. The $V\dot{E}c$ - thought energy prevailing in the atmosphere is at very low frequency. It is very hard to catch them, because they are intermixed with different frequencies at micro level. Although the scientist, are trying to catch the $V\dot{E}c$ -energy of our ancients. It is during the sleeping condition, when mind is at rest, the brain waves are also at low frequency level can catch these low frequency waves of $V\dot{E}c$ -energy prevailing in the atmosphere, they stimulate the language of the DNA, and a person observe the dreams. The intermixed $V\dot{E}c$ -energy of atmosphere stimulate the language in various directions, hence there is no sequence of the imaginary scenes and actions in the dreams of an individual. For it no scientific explanation is there so far in the modern science. The same thought energy initiate the stimulation of complimentary language code on the duplicating DNA in the womb. Accordingly, the language open on the DNA, which decide the fate of the individual with new birth with past deeds in the background, the hereditary characters of DNA regulate the physical development.

The coded language of the DNA may be stimulated during the DNA duplication in the womb, of a new infant through the thought energy of an individual of a dead person, because the thought energy of a person is imperishable, which persists in the atmosphere even after the death of an individual. It stimulates the opening of the language. The same has been indicated through *Yama's* two four eyed dogs, who watch the path of the man. It

means duplicating DNA is waiting for the rebirth of a thought mentality of an individual.

The *Yama* is a king of life and death. It represents chromosome, as we know that in the human beings there are twenty three pairs of chromosomes and out of it one pair, who bears the genetic information about the life and death. It has been termed as *Yama* and the different chromosomes have been termed as *Yama* and *Yamī*, it indicates about the crossing over between two different strains of chromosomes. *Yama*'s two brindled dogs with four eyes, who watch the course of life of a man, in the modern terminology they represents two strips of the DNA and four eyes symbolically indicates about two complimentary DNA base pairs (Adenine, Guanine, Thymine and Cytosine.) A=T, G = C, they records the deeds and thoughts in its genetic language code sequence, the language remain active through out the life and the language is imperishable. The chromosomes and the DNA maintain their continuity in the living-beings through their off-springs. The coded language of the DNA may get stimulated during the DNA duplication in the womb of a new infant through the thought energy of an individual of a dead person, because the thought energy of a person is imperishable, which persists in the atmosphere even after the death of an individual. The same has been indicated through *Yama*'s two four eyed dogs, who watch the path of the man. It means duplicating DNA is waiting, for the rebirth of a thought mentality of an individual.

सिनीवालि पृथुष्टुके या देवानामसि स्वसा।

जुषस्व हव्यमाहुतं प्रजां देवि दिदिङ्नि नः॥६॥

*O broad –stressed Sinīvālī thou who art the Sister of the Gods,
Accept the offered sacrifice, and, Goddess, grant us progeny yḡg*
2-32.6.

या सुबाहुः स्वङ्गुरिः सुषूमा बहुसूवरी।

तस्यै विष्पत्यै हविः सिनीवाल्यै जुहोतन ॥७॥

*With lovely fingers, lovely arms, prolific Mother of many sons-
Present the sacred gifts to her, to Sinīvālī Queen of men. yḡg*
2-32-7.

The structure of the duplicating DNA has been expressed

symbolically through *SinĪvĒĪ*, who is broad hiped, fair armed, fair fingered. The broad hips represent a loop of the DNA and the two separating strips have been termed as fair arms and the projecting nucleotides are termed as her fingers. She is mother of many sons, it means she is related with the progeny and has been invoked with *SarasvatĪ*.

या गुड्गूर्या सिनीवाली या राका या सरस्वती।
इन्द्राणीमहं ऊतये वरुणानीं स्वस्तये ॥८॥

Her SinĪvĒĪ, her Gungu, her RĒkĒ, her, SarasvatĪ, Indrani to mine aid I call, and Varunani for my weal. ĩ g.2-32- 8

The SinĪvĒĪ has been invoked with *RĒkĒ*, *Kuhu- Gungu* and *SarasvatĪ*, where *RĒkĒ* represents full moon. It means a loop of the DNA is like a full moon. *Kuhu* and *Gungu* represents first day of moon, it means the separating DNA exhibits crescent shaped structures, they looks like first day of the moon. *RĒkĒ* has been invoked for a good son, it indicate that during the separation of DNA strips in the womb, the code which open is for the thought energy of a particular ancestor, accordingly, she has been invoked with *SarasvatĪ*-thought energy.

राकामहं सुहवां सुष्टुती हुवे शृणोतु नः सुभगा बोधतु त्मना।
सीव्यत्वर्पः सूच्याच्छिद्यमानया ददातु वीरं शतदायमुकश्रम् ॥४॥

With eulogy I call on RĒkĒ, swift to hear: may she auspicious, hear us, and herself observe.

With never breaking needle may she sew her work, and give a hero son most wealthy, meet for praise ĩ g.2-32-4

The *RĒkĒ*-duplicating DNA has been invoked for a hero son.

यास्तै राके सुमतयः सुपेशसो याभिर्ददासि दाशुषे वसूनि।
ताभिर्नो अद्य सुमना उपागहि सहस्रपोषं सुभगे रराणा ॥५॥

All thy kind thoughts, O RĒkĒ, lovely in their form, wherewith thou grantest wealth to him who offers gifts,

With this come thou to us this day benevolent, O Blessed One, bestowing food of thousand sorts ĩ g.2-32-5

It has been expressed that duplicating DNA is the source of food of thousand sorts in the nature.

प्रति ति विराडसि विष्णुरिवेह सुस्वति।

सिनीवालि प्र जायतां भगस्य सुमतावसत् ॥ १५ ॥

Stand firm; viraj art thou; as it were, Vi-ṣu here O Sarasvatī; O Sinīvālī, let her have progeny; may she be in the favour of Bhaga, Ath. 14-2-15

So it has been prayed for a pregnant girl, O *Sinīvālī*, O *Sarasvatī* grant her good progeny.

Where *Sinīvālī*, represents the duplicating DNA and *Sarasvatī* is thought energy moving in the universe. The duplicating DNA and the thought energy play important role in opening the code on the DNA in the womb. Hence they have been prayed to grant her good progeny, accordingly a dead person's thought mentality may get rebirth.

विष्णुर्गोनि कल्पयतु त्वष्टा रूपाणि पिशतु।

आ सिञ्जतु प्रजापतिर्धाता गर्भं दधातु ते ॥ १॥

गर्भं धेहि सिनीवालि गर्भं धेहि सरस्वति।

गर्भं ते अश्विनौ देवावा धत्तां पुष्करस्त्रजा ॥ २ ॥

हिरण्ययी अरणी यं निर्मथतो अश्विनौ।

तं ते गर्भं हवामहे दशमे मासि सूतवे ॥ ३ ॥

1. May Vi-ṣu form and mould the womb, may Tva-ṣṣ duly shape the forms.

Prajāpati infuse the stream and *dhatar* lay the germ for thee.

2. O *Sinīvālī* set the germ, set thou the germ *Sarasvatī*. May the twain gods bestow the germ. The A,,wins crowned with lotuses.

3. That which A,,wins the Twain rub forth with the attrition stock of gold that germ of thine we invoke that in the tenth month thou may bear. ṽ g. 10-184-1, 2, 3

In the ṽ *gveda*, it has been indicated that the *Tva-ṣṣ* give shapes to the infant in the womb and the germ is get set by the *Sinīvālī* and *Sarasvatī* in the womb. Accordingly A,,wins (nucleotide pairs) crowned with lotuses, it means the development of the children will be there according to the hereditary characters in the DNA. Where the *Sinīvālī* is the code initiator and the *Sarasvatī* (thought energy)

opens the door of a language of the past birth, which is particular to an individual through the difference in the base sequence and the language code. It means the first code, which is present on the single strand of the DNA template. It acts as the language code initiator for a particular mentality, which is particular to an individual. Due to this even the time twins have different characters, mentality, and fate. The A.,*vin*s crowned with lotuses, it indicates the function of the nucleotide pair with triple bond, which proliferate with development of the physical body just like lotus flowers, it has been expressed by germ of gold metaphorically, which has been invoked in the tenth month after the birth.

The rebirth may be in other forms also, it has been indicated in the funeral hymns of Atharvaveda and ṛgveda.

सूर्यं चक्षुर्गच्छतु वार्तामात्मा द्यां च गच्छ पृथिवीं च धर्मणा।

अपो वा गच्छ यदि तत्र ते हितमोषधीषु प्रति तिष्ठा शरीरैः ॥३॥

The Sun receives thine eye, the Wind thy spirit; go, as thy merit is, to earth or heaven,

Go, if it be thy lot, unto the waters; go make thine home in plants with all thy members' ṛg. 10-16-3

सूर्यं चक्षुषा गच्छ वार्तामात्मना दिवं च गच्छ पृथिवीं च धर्मभिः।

अपो वा गच्छ यदि तत्र ते हितमोषधीषु प्रति तिष्ठा शरीरैः ॥७॥

Atharvaveda 18-2-7

It has been said that after the death of an individual, his eyes goes to the sun, wind his spirit goes in heaven or earth as per his merit, it is possible according to the deeds, he may go in to the waters or in the plants.

अजो भागस्तर्पसा तं तपस्व तं ते शोचिस्तपतु तं ते अर्चिः।

यास्ते शिवास्तन्वो जातवेदस्ताभिर्वहैनं सुकृतां लोकां॥४॥

Thy portion is the goat: with heat consume him: let thy fierce flame, thy glowing splendour, burn him.

With thine auspicious forms, O Jēavedas bear this man to the region of the pious ṛg.10-16-4

The goat is a metaphor for the cell body, which under go aging and with decomposition it take part in the creation sacrifice, after

the death, it is consumed in the nature with fire. It has been prayed that *Jataveda Agni* may bestow him region of the pious.

अव॑ सृज॒ पुन॑रग्ने॒ पित॑रभ्यो॒ यस्त॑ आहु॒तश्चर॑ति स्व॒धाभि॑ङ्गम्

आयु॑र्वसान् उप॑ वेतु शेषः॒ सं गच्छ॑तां तन्वा॑ जातवेदः॥५॥

Again, O Agni, to the Fathers sends him who, offered in thee, goes with our oblations.

Wearing new life let him increase his off-spring: let him rejoin a body *Jatavedas* ि g.10-16-5

It has been prayed to Agni send the departed soul to the fathers and let him rejoin a body to increase his off-springs with new life.

पुन॑र्देहि वनस्पते॒ य एष॑ निहि॒तस्व॒धाभिः॑।

यथा॑ यमस्य॒ सादु॑न् आसा॒तै वि॒दथा॑ वदुन् ॥७०॥

70. Give back, O forest tree, him who is deposited here with thee, that in Yama's seat he may sit speaking counsels.

Atharvaveda 18-3-70

A thought energy of a person may find its place as bio-soul in the plants, hence it has been prayed that O tree, give him back, who is deposited in *Yama's* seat-chromosome, let him rejoin a body so that he may be in speaking councils

Ye brought the horse's head, A.,vins, and gave it unto Dadhyac the offspring of Atharvan.

True, he revealed to you, O wonder workers, sweet Soma, Tva—*È's* secret as your girdle- ि g 1-CXII-22.

The secret of biotechnology is in the *Tva—È* DNA, through which transplantation can be there, it has been indicated.

Conclusion

The rebirth is a phenomenon, which is hard to digest, because through it one has to face the consequences of his deeds, which are known to the self only. It is a fact that after the end of life cycle the physical cell body decomposed and mixed into the soil. We can not imagine the rebirth of the physical cell body. In this sense rebirth is a confusing term. In actual sense with death of the body, the life energy disappears and thought energy released in to the atmosphere, which is imperishable and persists in the atmosphere at low frequency. The DNA, which is responsible for the physical

development of the cell-body, is immortal in the sense, that it has maintained its continuity through off-springs. It is the mentality, which is particular to an individual. The thought energy reflects the mentality of the person concern, and when the thought energy finds its complimentary thought mentality, and language code on the duplicating DNA in the womb, accordingly the thought mentality regenerate with new birth. Where the physical development of the body will be according to the hereditary characters, and the mental level and fate will be according to the language of the past mentality. Due to this even the time-twins are having different mentality and fate in the life. The birth is a moment of judgement of his deeds.

The embryo brings the burden of her; she (?) fills (? Pr) truth protects (ni-pa) untruth.

Accordingly the human -beings get rewards in life as per their past deeds, the language of the thought energy fills the truth and protects untruth.

17. AIM OF LIFE

Aim of life- Evolution of the mental qualities from animal instincts to human instincts- *Tamo guṣṭa* to *Rajo guṣṭa*, and *Sato guṣṭa* under the cycle of rebirth.

B, hadÈraṣṭyaka Upni-ad

The creation is a system, which is self sufficient and self regulated under the fundamental energy. The system is operating under the bio-geo-chemical cycles, synthesis and degradation is the law of nature, where nothing is stable, every thing is moving forward towards its disintegration with time. The human species is highly evolved under going evolution of mental qualities under the cycle of rebirth and death, through their past deeds and thought.

The *B, hadÈraṣṭyaka upni-ad* has a passage, which shows evolution of mental qualities among the human beings, the *PrajÈpati* ² lord of beings have three sons *Deva*- Gods, *Manu-ya* ² Men and *Asur* ² Demons. Before entering in the world of life they went to the *PrajÈpati* for instructions. First *Deva* reached to the *PrajÈpati* and asked kindly instruct us. *PrajÈpati* asked them, have you understood the meaning of Da? They said yes we have understood, you said to us *Damyata*- self control.. *PrajÈpati* said .yes you have understood.

Then men reached to the *PrajÈpati* and asked kindly instruct us, to them *PrajÈpati* asked the same have you understood the meaning of Da? They said yes we have understood you said to us *Datta*- Sacrifice-Charity. *PrajÈpati* said yes you have understood.

Then the Demons reached to the *PrajĒpati* and asked kindly instruct us, to them also *PrajĒpati* asked the same, have you understood the meaning of Da? They said yes we have understood you said to us *Dayadhvam*- be compassionate. *PrajĒpati* said yes you have understood.

Then the *PrajĒpati* said that thundering of the clouds have also generates the same sound Da means *Damyata* ² self control, *Datta*-Sacrifice and *Dayadhvam* -compassionate, *PrajĒpati* said that these are the three teachings, which should be practiced by all and now go and enter in the world. This is the great secret of life, which indicates multiplicity of human nature that according to the mental status of the individuals one and the same word has different meanings, which are according to their past deeds of their previous births. Through the practice of these three inherent qualities one can elevate one's own self for a higher next birth the same is the aim of life in the world, through birth one has got the chance for progress in a spiritualistic way.

The *Deva*- God, *Manu-ya*- men, *Asur*- Demon, these are three inherent qualities of human-beings, Commonly known as *Sattva* (Real), *Rajas* (Light) and *Tamas* (Dark) .

Satvat (Real) ² It is the quality of God like persons, they are near to the truth, having self control over desire, and hence they understood Da as self control.

Rajas (Light)² It is the quality of common persons, who in the light of truth act ethically with having desires in life, hence they understood Da as sacrifice of desires .

Tamas (Dark)- It is the quality of Demon like persons, they are in dark about the truth of life, they fulfil their desires on the cost of others, hence they understood Da as Compassionate .

. These three qualities are by virtue of birth and according to the past deeds of a individual one of the quality is dominant, accordingly the word Da - communicates different meaning to different individuals, otherwise commonly these three qualities are inherent in a person with birth, which according to the situation in life have their effects and person concern act accordingly this indicate a process of evolution of mental qualities among the

human beings under the cycle of rebirth and death.

*Assemble, speak together: let your minds be all of one accord,
As ancient Gods unanimous sit down to their appointed share* ÿ g.10-191-2

*The place is common, common the assembly, common the mind,
so be their thought united.*

*A common purpose do I lay before you, and worship with your
general oblation* ÿ g. 10-191-3

*One and the same be your resolve, and be your minds of one
accord.*

*United be the thoughts of all that all may happily agree.*10-191-4

Looking for a balanced society on the earth with peace, they have prayed for unity, integrity of heart, mind, thought and action of the human-beings on the earth in the end of the ÿgveda as a universal truth.

सं गच्छध्वं सं वदध्वं सं वो मनांसि जानताम्।
देवा भागं यथा पूर्वं सञ्जानाना उपासते॥२॥

*Assemble, speak together: let your minds be all of one accord,
As ancient Gods unanimous sit down to their appointed share*

समाम्नो मन्त्रः समितिःसमानी समानं मनः सह चित्तमेषाम्।
समाम्नं मन्त्रमभि मन्त्रये वः समामनेन वो हविषा जुहोमि॥३॥

*The place is common, common the assembly, common the mind,
so be their thought united.*

*A common purpose do I lay before you, and worship with your
general oblation.* ÿ g. 10-191-3

समानी व आकूतिः समाना हृदयानि वः।
समानमस्तु वो मनो यथा वः सुसुहासति॥४॥

*One and the same be your resolve, and be your minds of one
accord.*

United be the thoughts of all that all may happily agree. ÿ g.10-191-4

Looking for a balanced society on the earth with peace, they have prayed for unity and integrity of heart, mind, thought and

action of the human-beings on the earth in the end of the \ddot{y} gveda as
a universal truth.

18. Aśoka Emblem and Vedic Wheel



Figure 1

Reconstructed Archaeological Museum

Sarnath 250 BC

Aśoka emblem is the symbol of India's glorious past, which unfold the secret of the creation. Aśoka emblem found at lion capital from Sarnath, where *Buddha*-muni Gotam Buddha preached his first sermon, at the same place, Emperor Aśoka placed this emblem along with the teachings of *Buddha*, so as to commemorate his faith in Buddhism. As important as Aśoka's message The pillar, still in situ, was seen by the seventh - century Chinese traveler, Hsüantsang, who described it as "bright as jade ... glistening and (sparkling) like light." It has a reputation as one of the ancient India's greatest artistic achievements, which consists of a lotus- bell base surmounted by a sculpted drum, above it four adored lions, the crowning element was originally a large wheel (*chakra*) that is now lost. as claimed by the archaeologists. The wheel - *chakra* is a symbol of cosmic law of the natural cycles, and is the emblem of sun, which signifies,

सूर्य आत्मा जगत्स्तचक्षुश्च ॥

Sun is the soul and eye of the creation Rig-Veda. 1-115-1

The Sarnath pillar is most impressive of Aśoka monuments. However it signifies India's unification under centralized-rule and a single unified fundamental energy, as the controller of the creation symbolically.

Symbolically the free standing column recalls the metaphor of cosmic tree, Irvin in his paper “*Origins of Forms and Structures*” .has pointed out that A,okan emblem and pillars are earliest stone monuments of India, they may be pre A,okan and some may be pre Mouryan. They are related with cosmogony myths related with Vedic versions. The testimony of the same can be traced in the *Puru-a sÊkta* ĳg.10-90, where origin and evolution of the creation has been traced from a fundamental energy symbolically imaging it in the form of a *Puru-a*, which explains the laws of Thermodynamics and cosmic principles, under which creation is working as a system. The same has been projected in the A,okan emblem. The wheel - *chakra* is a symbol of cosmic order, the four stylized adored lions sit upon an abacus carved with four animals - lion, elephant, bull, horse - that move around in clockwise fashion, punctuated by four small wheels. After independence India has adopted it as 'National Emblem' with 'Satya Mev Jayate', indicating the fact that the eternal truth is one and the same for all.

. The cyclic order of the nature has been exhibited symbolically through *Chakra*-wheel as reflected in the *Rig-Veda*.

स सूर्यः पर्युरु वरांस्येन्द्रो ववृत्याद्रथैव चक्रा।

Sa SÊryah paryuru varansyendro va vratyadrathyeva chakra
ĳg.10-89-2 A

SÊrya is he; throughout the wide expenses shall Indra turn him, swift as car wheel, hither.

He drives the sun and others like a wheel of the Rath-car

. It indicates about the working of the creation in a cyclic manner being driven by the fundamental energy.

a. Modern Concept of Energy

All the Universe is energy, there is only energy, at some places energy get condensed in to Electrons, protons and Neutrons, which bind together to produce atoms, and atoms in turn bound in to molecules that produce substances, to whom we can touch, feel and call it as mass energy. In Einstein's equation $E=mc^2$ it means energy and mass are inter-convertible.

Our universe is a vast ocean of energy, where energy is working in a cyclic manner, which follows the laws of thermodynamics.

Which state that energy is unborn and immortal, but energy can be converted from one form to another form with a successive loss of energy at every transfer. The energy can be defined as capacity to do work in an object the energy at rest is known as potential energy. The energy at work is known as kinetic energy. Within the framework of these two energy all other fundamental forms of energy, such as magnetic, electric, gravitational, heat and metabolic energy are working in the universe under the laws of thermodynamics. Laws of thermodynamics also state, when there is an increase it must be balanced by a decrease somewhere else. It means from energy point of view whole universe is a single unit we are only a small part of the same.

Today with the discovery of electro- weak force by Abdus Salam, Sheldon Glashaw and Steven Weinsberg, three of the five forces in nature (electricity, magnetism and weak – interaction force) have been unified. The fourth force, the strong interaction force that binds the nucleus inside the atom is expected to be unified, as it is claimed today by some scientists.

The successful experiment on Bell’s theorem in 1972 by Clauser, Freedman, David Böehm, and Alain Aspect in 1985, science discovered a synchronistic non- locality, where at the base of matter “non – local” causes operate and similar particles at a space like distance or some how “instantaneously interconnected” without the connection of any signal like light or electromagnetic waves.

Now the scientists have realized the notion of ‘Holistic paradigm’ in the light of recent quantum theory, which leads to unbroken wholeness of the universe. The same echo is coming from the Vedic science, where the one unified force has been imagined metaphorically as *Yak-a*.

महद् यक्षं भुवनस्य मध्ये तपसि क्रान्तं सलिलस्य पृष्ठे।

तस्मिञ्छयन्ते य उ के च देवा वृक्षस्य स्कन्धः पृत्ति इव शाखाः॥

A great monster’ (yak-a) in the midst of the creation (bhuvana) strode? (krĒnta) in penance on the back of the sea- in it are set(cri) whatever gods there are like the branches of a tree roundabout the trunk Atharvaveda 10-7-38

It has been indicated through the metaphor of the tree that all the

components of the nature have evolved from the fundamental energy, and all are linked with him like the branches of a tree. He is in the middle of the creation. It indicates symbolically that all the components of the creation and nature are interconnected with fundamental energy, he is in the middle of the centre just like a *Yak-a*.

The same have been described in the *Puru-a sÊkta* yj g.10-90 and has been depicted on the 'A,,okan Emblem'.

The emblem is placed on the pillar along with tapering lotus petals.

The pillar is the symbol of fundamental energy as a support to the creation as described in the *Skambha sÊkta*, where the fundamental-energy has been described as *Skambha*- support *Atharvaveda* 10-7-35

The radiating petals of lotus, signifies that the fundamental energy flows in to existence like a lotus flower. All are linked with him, just like the branches of a tree round about the trunk *Atharvaveda* 10-7-38

The four lion back to back at four cardinal points represent the fundamental energy in the vast ocean of the Cosmos.

Puru-a sÊkta

a. Laws of Thermodynamics

Puru-a sÊkta deals with the Laws of Thermodynamics, where fundamental energy has been imagined in the form of a *Puru-a* metaphorically, with having innumerable head, eyes and feet on every side, pervading the earth and the world he is enclosed in side a ten finger wide space, means as a universal entity the fundamental energy is present every where and as a individual entity he is enclosed in side a ten finger wide space, the region of the heart of man *Rig-Veda*. 10-90-1

Here it has been said that the *Puru-a* -fundamental energy is universally present.

This Puru-a is all that yet hath been and that is to be;

The Lord of Immortality, which waxes greater still by food
yj g.10-90-2

Here it has been said that the fundamental energy is eternal, the lord of immortality means it can not be destroyed but with transformation it increases, which is its food symbolically.

So mighty is his greatness; yea greater than this is Puru-a .All creatures are one-fourth of him, three-fourths eternal life in heaven. 10-90-3.

Here it has been said that the cosmos is like a vast ocean of fundamental energy, the visible world is only one-fourth part of him and the rest three-fourth part of it is in the heaven above the visible world.

With three-fourths Puru-a went up: one-fourth of him again was here. Thence he strode out to every side over what eats not and what eats Rig-Veda. 10-90-4

Here it has been said that with its three-fourth part invisible in the heaven, only its one-fourth part is under going transformation again and again, which spread on every side as animate and inanimate creation.

Tracing the evolution from the fundamental energy symbolically in the form of a *Puru-a*, with this it has been indicated that the human body is a microcosm in side a macrocosm.

b. Cosmic Principles - The wheel - *chakra*

The creation is working as a system under the cosmic principles. These principles have been given symbolically in the last.

सप्तस्यासन् पृथिवस्त्रिः सप्त सुमिधः कृताः।
देवा यद्यज्ञं तन्वाना अबध्नन्सुरेष पशुम्।

Seven fencing -sticks had he, thrice seven layers have been prepared, When the Gods, offering sacrifice, bound, as their victim, Puru-a Rig-Veda. 10-90-15

It has been expressed that the process of creation has been initiated. When the fundamental particles are bind in the atom, due to the spinning of the electrons around the nucleus electro-magnetic energy generates, in this way the fundamental energy (*Puru-a*) has bound in side the atoms, it binds the atoms and accordingly the creation came in to the existence. For the functions of the creation seven sticks (seven planets), twenty-one fuel are in operation, these twenty-one fuel represents twelve months, six seasons and the three

यज्ञेन॑ यज्ञम॑यजन्त दे॒वास्ता॑नि ध॒र्माणि॑ प्रथ॒मान्या॑सन्।
ते ह॒ नाकं॑ महि॒मानः॑ सचन्॒ यत्र॑ पूर्वे॒साध्याः॑ सन्ति॒ देवाः॑।

Gods sacrificing sacrificed the victim: these were the earliest ordinances. The mighty ones attained height of heaven, there where the SEdhyas, Gods of old, are dwelling Rig-Veda. 10-90-16

d. A,,okan Emblem



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A,,okan emblem, has multidimensional characteristics. The pillar on which the emblem is placed along with tapering lotus petals, the pillar is the symbol of fundamental energy as a support to the creation as described in the *Skambha sĒkta*, where the fundamental energy has been described as *Skambha*- support. *Atharvaveda* 10-7-35.

The pillar is the symbol of fundamental energy as a support to the creation as described in the *Skambha sĒkta*. The radiating petals of lotus, signifies that the fundamental energy flows-up into the existence just like a lotus flower remains unaffected from mud and water. All are linked with him, just like the branches of a tree round about the trunk *Atharvaveda* 10-7-38

गर्भं धेहि सिनीवालि गर्भं धेहि सरस्वति।

गर्भं ते अ॒श्विनौ दे॒वावा ध॑त्तां पु॒ष्कर॑स्त्रजा॥२॥

O SinĪvĒlĪ set the germ, set thou the germ SarasvatĪ. May the twain gods bestow the germ. The A,,vins crowned with lotuses.

It has been expressed that the duplicating DNA, set the germ in the womb with VĒc- SarasvatĪ- the thought energy, and accordingly the nucleotide pairs of the DNA develop the infant, it has been expressed by *The A,,vins crowned with lotuses*.

The DNA De oxy ribose Nucleic Acid is universally present in the living-beings. The biological world has evolved from the nucleotide pairs of the DNA, they have crowned with nucleotide pairs, just like the lotus flower.

It radiating lotus petals on the A,,okan emblem indicates that the biological world has crowned with the nucleotide pairs of the DNA.

The four lion back to back at four cardinal points represent the fundamental energy in the vast ocean of the Cosmos.

The emblem having a circular shape, from the front only four legs and three faces of lions are visible, the four legs indicates about the four parts of the fundamental energy, out of which three-fourth part of the fundamental energy is above the visible cosmic world, the same has been indicated by the three faces of the lions.

Only one-fourth part of the fundamental energy is undergoing transformation, which constitute the visible world, which is depicted at the base of the abacus represented by the four animals

(Lion, Horse, Elephant, and Bull) with alternating wheel in between them.

The energy can be defined as capacity to do work in an object, the energy at rest is known as potential energy. The energy at work is known as kinetic energy. Within the framework of these two energy all other fundamental forms of energy, such as magnetic, electric, gravitational, heat and metabolic energy are working in the universe under the laws of thermodynamics with reversible reactions.

To depict the four animals and four wheels at the abacus, with twenty four spokes in each wheel, each one has their own significance in the creation system for the cyclic chain reactions in the nature. It has been depicted on the emblem by four animals in motion with alternating wheel moving round. The spokes in the wheel indicates reversible reactions with fundamental energy in the centre. The animal on both the sides symbolically represent lion - fundamental energy, elephant - energy at rest, horse energy in motion - kinetic energy, and bull - capacity to do work. In this framework, the creation is working under the cosmic principles in a cyclic manner. It has been depicted on the emblem by four animals in motion with alternating wheel moving round.

Lion- The lion signifies the fundamental energy.

Horse- The horse signifies kinetic energy - energy of motion.

Elephant- The elephant signifies potential energy - energy at rest.

Bull- The bull signifies the capacity to do work.

The creation came in to existence from a fundamental energy, through actions and interactions, the same has been indicated through the central axis, which represents fundamental energy and twenty-four spokes represents actions and interactions, cyclic reactions have been indicated by the wheel. The four wheels alternating with the animals, each wheel is having a different significance for the creation system.

e. The wheel of Sun

The wheel represents the rotation of the sun at its axis. The one complete rotation is equivalent to a year of 360 days. The twenty-four spokes in the wheel represent twenty-four fort nights of fifteen days each, which is equal to 360 days j g.1-164-48.

Twelve are the felines and the wheel is single; three are the naves. What man hath understood it? Therein are set together spokes three hundred and sixty which in nowise can be loosened. Rig-Veda 1-164-48

It is the 'wheel of time-Kala', under which the creation came in to the existence.

f. The wheel of Nature

The nature is working as a system under twenty-four natural factors as described in the Rig-Veda 10-65-1

अग्निस्त्रिंशो वरुणो मित्रो अर्यमा वायुः पूषा सरस्वती सृजोषसः।
अदिति विष्णुर्मरुतः स्वर्ब्रह्म सोमो इन्द्रो अदितिर्ब्रह्मणस्पतिः॥१॥

Agni, Indra, Varuṇa, Mitra, Aryaman, Vāyu, Puṣa, Saraswati 12 Jditya, Viṣṇu, Marut, Rudra and Soma are present in the nature along with the Lord of the creation. It is the 'wheel of Nature'.

g. The wheel of Seasons

The creation and nature are working as a system under seasonal variations as indicated in y g.10-90-15. The twenty four spokes in the wheel represents twelve months, six seasons, three weather (winter-cold, summer-heat and Rain) and three reaction centers Sky, Atmosphere and Earth. It is the 'wheel of seasons'.

h. The wheel of Man

The twenty four spokes in the wheel signifies 24 elements of a man, five gross elements Earth, Sky, Fire, Water and Air, five sense organs, five working organs of the body, five subjects of the sense organs, with this the mind, intellect, ego and nature develop gradually under the cycle of rebirth and death. (*Sēṅkhyā karika – Sēṅkhyā system of Philosophy*). The axis here represents the fundamental energy and individual soul as the life principle, which indicates about the cycle of rebirth and death on the earth. It is the 'wheel of Man'.

The central point in the wheel is its axis, which represent fundamental energy and as the spokes in the wheel have no importance without the axis in the same fashion the components of the nature and the creation have no importance without the fundamental energy. The same has been described as Omnipotent, Omnipresent, and Omniscient God in various Religious scriptures;

as such the National emblem is a symbol of National integrity and Communal harmony with a pride and honor for every Indian. It can form the bridge between the modern Science and Spiritualism, which is a quest of modern human mind.

19. Scientific Index to the Vedic Deities

AjĒ	-	Unborn
AjĒ	-	goat, goat as metaphor for the ĩ bhu-cell body
Apāh	-	Water
ApĒn napĒ	-	Son's of water- steam
¶ pnavan -		<i>water</i>
¶ ngirases -		Viscous sap
Apsarases	-	Cyclic chemical reactions
Avi	-	Protector of plant, sheep
Aditi	-	Infinite nature, micro nature
¶ rya	-	Well cultured
Aśvin	-	Twin sons of Vivasvat- nucleotide pair of DNA
A,,va	-	Horse:-a form of rapidly moving energy.
A,,vattha	-	Ficus religiosa, pipal
Audumbara	-	Ficus glomerata- fig
Aryaman	-	A ray of sun- long red wave length of light
¶ ditya	-	Twelve Âditya (twelve months)
Agni	-	Fire, energy
Avi	-	Plant protector ² Chlorophyll.
Bhag	-	AŚ sa, a portion
Bh,gu	-	Shining, chlorophyll
Chamsam	-	Chalice, cup-cell
Parṭa Maṭi	-	Chlorophyll
Cow	-	Symbol of nourishment and feeding

Cow omni-form-	DNA
Cow of every hue -	living beings
Crippled cow	- Carbon di oxide
Milk cow	- Infinite nature
White cow	- Visible light
Dak-a	- Nebula
Darbha	- Grass
Dadhikras	- Life energy
Dèdhikravèn	- Dwelling place of life energy-human body
Dhenu	- Cow, metaphor for nourishment as milk food
Da,,agva	- Ten, ten rays
Deva	- Fundamental particles, God
DevatÈ	- Natural forces
Dharma	- Work, duty, cosmic principle
Eagle	- Sun rays
EtasÈ	- Solar wind
Gh,t-butter	- Condensed form of energy
Gh,ta pra—ha	- Condensed energy in organic matter
Gandharva	- Water nymph, protoplasm
Gladdening drop-	Ageing
GÈyatrĪ	- Three bands of fundamental particles
GÈyatrĪ	- Three bands of fundamental particles. (Electron, proton, neutron, energy)
Havi	- Stimulator
Bolt of Indra	- The electrical charge
Indra	- Electricity- two steeds-two charges
Ida-Ila	- Nourishment
Indu	- Oxygen

Kutsa	-	Sun spots.
Mahi-Bharti	-	The great earth
Maghavan	-	Charged ions
MĒtanda	-	Earth, Āditya
Maruts	-	Storm, Thunder
MĒari,,va	-	Carbon
MĒari,,van	-	CO ₂ - Carbon di oxide (crippled cow)
Mitra	-	Light, Friend
Mother	-	Symbol of progeny and nourishment.
Nave	-	Centre
Navagva	-	Nine, The nine doors of the human body
Nigrodh	-	Ficus bengalensis- banyan
Nila-lohita	-	Blue and red rays of sun,
NarĒ,ams	-	Short blue wave length of light
PavmĒn	-	Hydrogen
PĒ-an	-	Solar rays
Pi,,axga	-	Toxic rays
Parjanya	-	Rain clouds
PrajĒpati	-	Lord of beings (fundamental energy)
Puru-a	-	Symbolic imagination of fundamental, energy
Paṛca Jana	-	Five gross elements, types of living beings
Pegs	-	Cycles
Pi,,Ēca	-	flesh eater microbes
Parṭa maṭi	-	Chlorophyll
Purohita	-	Priest
PurukĒsa	-	Magnetic sun-spots
P,-ni	-	White cow- the visible light
ÿ ta	-	Cosmic principle

SÊrya	-	Sun
SarasvatĪ	-	Vac, speech, a river
Samidha	-	Fuel
SÊdhya	-	Material
SavitÊ	-	Stimulator
Soma	-	Magnetic energy
SinĪvÊĪ	-	Duplicating DNA
SvarbhÊnu	-	Eclipse of sun
Supar̥ṣa	-	Brilliant lustre of sun rays (sun bird)
Varuṣa Soma	-	The magnetic energy of the atoms
Rudra soma	-	M
Rudra Agni	-	Energy in the gaseous air
Seven ¶ ditya	-	Seven sons of Aditi - seven planets
SavitÊ	-	Stimulator
Somagopa	-	Guardian of soma
Sudhanva	-	Son of Sudhanvan, developing cell, ŷ bhu.
fudra	-	Without knowledge
Trita	-	Three, triple bond, H ₃ who prepare soma
Trisira	-	Triplet code
Tva—Ê	-	DNA
Ten fingers	-	Ten, ten rays
Tanunapata	-	Solar flares
U-a	-	Dawn
VajÊ	-	Younger, (vigorous one)
VÊjinah	-	Steed, war horse
Vaivasvat	-	Son of vivasvat (DNA)
V,tra -		Obstacle
Vai,,vanar -		Chemical metabolic energy

Veda	-	Knowledge
Vibhvan	-	Eminent
Vivasvat	-	DNA
Vi,,vÈvasu	-	Glucose.
Vi,,varupa	-	Son of Tva—È, omni form
Varuṛa	-	Gravity, atom
Vachaspati	-	Lord of speech
Vi—u	-	The visible solar-rays
Vi,,vakarma	-	Creator, carpenter (fundamental Energy)
Wheel	-	Cycle, chakra
Yajṛa	-	Sacrifice, actions and interactions
Yajṛa vedi	-	Place of reaction
Yama	-	Chromosome, with information of life and Death
Yama-YamĪ	-	the twin brother and sister, they represent a pair of chromosomes
Yuj	-	To connect

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