



SOURCES OF ENERGY SOME VEDIC CONCEPTS

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‘Energy’ and ‘Matter’ are two basic concepts of Science. Modern scientific studies proved that energy is the root cause of ‘Matter’. This has a striking resemblance with the concepts of ‘Brahman’ and ‘jagat’ in Vedānta, since the Brahman is the cause of ‘jagat’. Recent studies in Quantum Physics provide some vital inferences in the matter of the identity of both.

Vedic texts do possess much information on science. Semantically Vedic texts are multilayered. The scientific ideas are hidden in some of the layers and they could be extracted only through some linguistic devices.

Logic is the pivot of all scientific advancements. Nyāya system enjoys the highest position in scientific thinking as the *pramāṇasāstra* or the *tarkavidyā*, creditably for the reason that it has systematised epistemology and its approach very logical. Viśeṣika with its stress on ontology is clubbed with Nyāya to form the *samāna* system-twin system. *Pramāṇa*, regarded as a means leading to veridical knowledge, is in consonance with the present day scientific approach where proof is required and sought for, in order to arrive at any conclusion. The classification of entities into seven is conceptually logical and scientific. The methodology of approaching and analysing the subject in the characteristic of *pūrvapakṣa* and *siddhāntapakṣa*, the *prima facie* view and the establishment of theory, even if appearing as hypothetical in the beginning, is indeed scientific.

Though the widely discussed content of the Vedas is spiritual in nature, they contain plenty of information about the temporal world, within the broad description of *yajña*, *mokṣa* etc. Many basic concepts of modern mathematics, physics, chemistry, life science, astronomy, aeronautics etc., in addition to Āyurveda and Sthāpatyaveda were discussed. A sincere effort has to be made to identify explicitly and implicitly, the scientific contents embedded in the Vedic texts. Here I would like to point out some references mainly from Rgveda (RV), revealing the insights of Vedic seers on sources of ‘energy’.



Rv. deals in plenty, the subject matter ‘energy’. It is said by Vedic Seers that wise men kindled energy and force for the use of common man. According to Vedic R̄sis ‘energy’ possesses different forms and names. At different places and various contexts, Rv. gives different names of energy like force, might, power and strength.

Seers in Rv. discuss the sources of energy in different mandalas or books in different manner. In their opinion fire is the main source of energy, hence fire is addressed as ‘Urjāmpati’ the lord of Energy.

Sa tvam urjām pate rayim rasva suvīryam

Prava nastoke tanaye (Rv. 8-23-2)

The relation between fire and energy is qualified as the relation between father and son. The very first hymn in Rv. starts with Agni (fire), the father of energy.

It is not simply because of the spiritual importance of Agni that it is extoled in high esteem as seen in Vedic rituals. Agni is the main source of ‘energy’ for wordly life. One seer says that Agni is powerful and pregnant with energy and it is covered on all sides by light and lusture. It shines brightly and cuts like axe. Several instances are quoted in Rv. to prove that fire energy was used by Vedic people for cutting, welding etc.

Sa hi puru cidojasa virukmata

Didyana bhavati druhamtarah parasurna druhamtarah (11-127-3)

The Rv. 20.15.9 starts with ‘Urjo Napāt’ - etc. the R̄si states categorically that, fire as the main source of energy provides security for long life. For achieving happiness, valour, amenities and long life, one has to depend upon Agni, the fountain head of energy.

Urjo napāt sahasāvanniti tvopastutasya

Vande vṛṣā vāk / tvam stōsāma tvaya suvīra

Draghiya āyuh prataram dadhānah (20-15-8)



Fire is highly potential, hence it is called 'jatavedas'. Based on some semantic layers, it can be seen that mostly all the epithets of Agni in Vedic literature suggests its pregnancy of energy.

Because of the close connection of cause and effect, the words Agni and energy are used as synonyms by Vedic seers based on laksana.

The sources of energy are many. In RV, the hymn, 2.1.1,-

Tvam agne dyubhistvamāśusu ksanīḥ tvam adbhyah

Tvam āśmanaspari

Tvam vanebhyah tvamosadhibhyah

Tvam nrñām pate jāyase sucīḥ

speaks of different sources of energy visualised by Vedic seers. Water, stones, woods, herbs etc. are some of them. Under some scientific process the energy is said to be extracted from water.

In mantra 1.70.2 a statement is seen that both moveables and immovables bear fire. Waters, forests, mountains are pregnant with this energy:

Garbho apām garbho varāñām

Garbhaśca sthātām garbhaścarathām

Adrau cidasmā antardurone

Viśām na viśwā antāḥ svathīḥ

Fire as energy and power was used for various purposes in a home. It is a power to be handled very intelligently, lest it might prove harmful.

The Vedic Rsis in general believed that fire from water is very much powerful. In one of the mantras it is depicted that the fire can be joined on the slopes of mountains and they are mighty impelling forces. This fire energy was used to make things move, to make them take a speed. It is stated that fire energy has stimulated the revolving abilities and propelled everything. Fire energy extracted from water was used in battlefields to destroy enemies. Fire energy is highly destructive hence we come across in Vedic mantras often the prayer-oh! fire! destroy our enemies in wars (Rv. 8.39.8) For the generation of the fire energy from waters, some kind of wall or bridge constructions and formation of reservoirs are mentioned in Rv.



*Tvam no agna āyusu tvam devesu vasata eka Irānyasi
Tvamapah pariśrutah paryanti svasetavah nabhantām anyake same*

This gives some strong inference that waters from sea, rivers and reservoirs were brought into some comparatively limited pools for enkindling the fire energy (Rv. 1.23.23)

To extract the energy or power, Vedic people used to churn waters with the help of deviated winds. Thus it is said:

*Saśrvāmsamivātmanā agni mintha tirohitam
Enam nayan matariswa paravato devebhyo mathinam pari (Rv. 3-9-5)*

This method of extracting energy is being mentioned in several contexts in Rv. Atharvaveda says:

*Hiranyavarnah śucayah pāvakāḥ yāsu jataḥ savitr yāsvagnih
Ya agnim garbham dadhire suvarnasta na āpah sam syona bhavantu (1-33-1)*

Sun is also referred as a source of energy in Rv. So they tried for the energy from the space. The seers have stated that the energy obtained from sun is not different from that which was obtained from plants, waters etc. Sun rays and heat collected from the wide space are instrumental in taking out the energy from waters.

Two different ways of extracting energy can be found in the matter of sun. The solar energy directly from rays and the energy from water with the help of solar rays and heat.

The extraction of energy from river waters is depicted in Rv. at several contexts like 2.35.3, 4-9-12 etc. Rivers mix in one another, and while mixing, the waters whirl with speed. Waters are flowing turbulantly. Energy is created in this process. The seers say that the fire is surrounded on all sides by the turbulent waters. The waves of waters brushing, hitting and clearing the fire. Rsi says that the fire is shining without fuel and this fire is covered with vidyut (electricity):



*Apām napādā hayasthādupastham
Jihmāna mūrdhau vidyutam vasānah*

Rsi is keen in explaining the fire energy, that this energy can be touched or lifted by wooden handles (bad conductors): You cannot touch it by naked hands or any other conductors of heat and electricity. From all these illustrations, some strong inference may come in our mind that the energy mentioned in Vedic texts is something like electricity of modern times.

Rv. in one context states that the wind made his ten wives to give birth to fire energy. As in the case of sun, the wind also directly produces energy and also is instrumental for extraction of energy from waters. The process was of whirling the waters as is done in taking out butter.

The creepers, plants and herbs produce energy. One Rsi says that fire and heat are one and the same, since the whole of the herb is full of fire:

*Tvam garbho virudhām jañnise sucih (Rv. 2.1.14)
Uttānāyam janayanta susutam bhuvadagni puru pesā-su garbhah
Tvam osadhībhyah jayase śucih (Rv. 2-1-1)*

It is said that the creepers are in sleeping position on earth when they deliver fire. Kalidāsa in Kumārasambhava depicts one nipa tree releasing heat in the night by absorbing heat of sun at day time. Again in Raghuvamśa a plant named trṇajyoti shedding light in the night is described thus:

*Athāgryamahisi rajñah prasūtisamaye sati
Putram tamopaham lebhe naktam jyotiri hausadhih*

Mallinatha in his commentary on this verse says that this herb burns at night :-

'Trṇa jyotirākhyā latā - sā hi rātrirjyolatiti prasiddhih'

References can be seen in Kalidāsa again in Raghuvamśa (9.70)

'Jyolitamahausadhi-dipikāsanā-tham' and in Kumārasambhava 'mahausadhim nakta-mivātmabhasah'. In Meghadūta in more than one context the emitting of light by precious stones are depicted.



There are several references in Rv. of a peculiar energy extracted from wind, by making it pass through some hillocks. The wind blows with increasing velocity. Energy produced thus was used as power for generators or mills.

The sources of energy referred in Rgvedic hymns, as said earlier, are many. They deserve serious study in the light of modern science. It is clear beyond doubt that the Vedic society used such varieties of energy in their day-to-day life.

Among sources of energy, fire, water, sun, wind, trees, herbs, plants and stones can be seen. Among them fire, water, sun and wind play an important role. They produce separately and jointly. Mostly all these sources are extracted by the modern science for production of energy. This is not merely something accidental. Some serious study in the field is required, especially in a context when India faces an acute paucity of energy.

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