

Science of Water as Depicted in Vedic Literature

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This paper focuses on Vedic Cosmology and the concept of water in Vedic literature. Vedas hold the ultimate wisdom. According to Vedas when there was no formed creation the entire space was filled with inert cosmic particles in which all activity was inherent.¹ The ancient Hindu scriptures such as Vedas and Upanishads reveal the most scientific outlook of our ancient Vedic seers who possessed the highest wisdom. With their subtlest thinking power and scientific attitude, they examined the energy element in the creation, and they examined the five gross elements, which include the water element. Water is the energy element in the creation. This paper reveals the importance of water as depicted in ancient Vedic literature.

Keywords: Varuṇa, Water, Veda, Atharvaveda, Upanishad, Vedic cosmology, Parjanya, Ap, Ṛgveda, Yajurveda, Bhārat, Jambudvīpa, Hindu-dharma, Saṁskāra.

What is water?

Water is an essential component for the existence of all living beings. It is as essential as air. Most of us know it is a compound of hydrogen and oxygen. It contains two parts of hydrogen and one part of oxygen by value, generally explained as H₂O. Water is a universal solvent. Air dissolves itself in water, enabling aquatic animals to breathe inside the water. Water is a liquid which is not quickly evaporated, by which soil retains moisture for a more extended period, and trees and plants are getting benefits.

Science says pure water with H₂O is free from dissolved matter; optically void is available only in laboratories. Such water could be without colour, smell and would have a pH. value of 7.0. Hindus say that this kind of water is Āntarikṣam² “Pāṇīyamāntarikṣam anirdeśyarasamamṛtaṁ Jīvānām tarpaṇam dhāraṇam Āsvāsajananaṁ Śrama-klama-pipāsā mada-mūrcchā-tandrā-nidrā-dāha-Praśamanaṁ”. Having been produced by clouds, when water starts dropping down on earth, it neither possesses taste nor odour. Such water is beneficial for living beings on earth, like a nectar. It gives benefits, sustains life, quenches the thirst, and cures wounds caused by weapons. It revives the consciousness of those who fall faint due to fatigue and gives explicit knowledge by removing drowsiness.

According to Ṛgveda, if something existed before the creation of the universe, it was the water, which had a vast and limitless appearance like an oval in the universe.³ The water, which contained an egg from which everything else

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emanated, had existed before the creation.⁴ Modern science says that single-celled bacteria and stromatolite colonies flourished in primitive oceans some 3.5 billion years ago. The statement of modern scientists is similar to the statement of seers of Ṛgveda, who said that life started from the first egg. The perception of ancient seers of Bhārat (India) regarding water can be seen in Ṛgveda, where they conceived water as an extraordinary and omnipresent element in the universe. Water is the source of all lives and the saviour of everything. It is the protector of both living and dead on the earth. According to the concept of our Ṛgvedic seers, the water was divine and a source of life and energy. They described the water as of two kinds: terrestrial and celestial. In fact, in Ṛgveda, several deities are attributed to water. Generally, Varuṇa is the God of water in Vedas and later Vedic literature, but the 'Āpas' also was a deity of water, who is invoked in four Ṛgvedic sūktas. Apart from these two, there are other water deities, like Indra and Parjanya.

In the Persian language, 'Ab' was the word used for water. In fact, 'Ab' is not only similar to Sanskrit 'Ap', but it is the same Vedic term used by Persians. In Vedas, the 'Ap' was also called 'Āpas'. God 'Āpas' was described as the mother in Vedas. 'Āpas' was invoked as a woman and, in some hymns, as a lord. Depending on various utilities and capabilities of water, Vedic seers invoked the water with various names and forms. The deity 'Āpas' always blesses those pious humans who worship the omnipresent creator through the performance of 'Yajñas' (Sacrifices). Lord Indra, who holds the weapon Vajra in his hand and who never diverts from his path, had created a path for water. The water in a deity form had been prayed in Ṛgveda as follows-

"The water streams, with the ocean as their chief, proceed from the midst of the firmament, purify, and flow unceasingly. The resplendent and the possessor of the adamant power digs channels of these rivers. May these water-streams protect me".

May the water vapours in the sky, or those that condense and shower on earth, and those whose channels have been dug, or those that have sprung up spontaneously, and those that are speeding to the ocean - all are pure and purifying. May these water-streams protect me. Those amid whom the venerable sovereign of cosmic waters pass in the middle sphere, again, the one who is the discriminator of man's truth and falsehood, and those who are shedding sweet showers – all are pure and purifying. May these water-streams protect me. May waters, over which their king, the venerable Lord of cosmic waters, rules, and in which the sap of bliss abides, from whom Nature's bounties receive strength and vigour, and into whom the cosmic universal fire enters -May these water-streams protect me."⁵

We can see the description of water in ancient scriptures in various ways. The destination of water is the ocean, which purifies the world and is constantly flowing. Mitrāvaruṇa its companion. Water keeps an eye on the good and evil deeds of the people. In Ṛgveda, water was considered a mother of fire (Agni); therefore,

according to Vedic seers water produces the fire. The water which is created in the universe, the water which flows in the form of rivers, the water which comes from the digging of wells, canals, and from other places, the water which is self-created in the form of sea, river, and waterfalls etc., which enters into the ocean, and which is pure and full of light, which is full of divine characteristics, may help me in this world and may it be received by me.⁶

He, whose destination is the ocean, which purifies the world, is constantly flowing (in the form of a river), lives in the central part of earth. Indra, with 'Vajra' weapon, and rains the desires, opens a way to divine water. May these waters help me and be received by me.⁷

Moreover, the waters which are sent to the middle of the universe by King Varuṇa after investigation the good and bad deeds of human beings, the water which distils sweetness, is full of light and is the great purifier, which is full of divine values, such water helps me in this world and be received by me.

Rainwater in ancient India

Rain is the main source for agriculture water, as without rain there can't be water on earth for the growth of crops. Being agriculturally developed, ancient Indians knew the importance of rainwater. Varāhamihira says in Garbhalakṣaṇa,

अन्नं जगतः प्राणाः प्रावृट् कालस्य चान्ममायत्तम्।
यस्मादतः परीक्ष्यः प्रावृट्कालः प्रयत्नेन ।।

This means food is the elixir of life to living beings, and as that food is dependent on monsoon, it should be investigated carefully. Later, he continues, therefore, having read the characteristics enunciated by ancient sages such as Garga, Parāśara, Kāśyapa and Vajra, in their works, the properties of the rainy season can be given. (but these śāstras of sages are not available now). Then Varāhamihira praises the science of astrology, as with the help of astrology, only one can determine the exact rainfall time. The ancient text in this regard is the '*Kṛṣiparāśara*', which is also known as '*Kṛṣipaddhatih*'. It also discusses ancient agricultural systems, rainfall and its measurements. Besides these, some manuscripts are entitled "meghamāla", which may be available at Bhandarkar oriental research institute Pune. These are entirely devoted to the rainfalls. Besides these, the occasional references can be found in Ṛgveda, Aṣṭādhyāyī, Arthaśāstra, Rājatarangīni and Meghadūta of Kalidāsa.

According to some sages, cloud pregnancy begins after the full moon of Kārtika month. However, this opinion is not agreed by others. Siddhasena believes "the symptoms of cloud pregnancy can be detected when the moon transits pūrvāṣāḍha, commencing from the first day of Mārgaśīra month. We can see several scientific descriptions of water.

सलिलोत्पत्तिरखाते गन्धरसविपर्यये च तोयानाम् ।

सलिलाशय विकृतौ वा महद्भयं तत्र शान्तिमिमाम् । ।

If water springs up from the earth without digging, when the taste and smell of water changes, or when there is some unnatural occurrence in tanks, great danger is to be apprehended. In such a situation, the following remedial measures can be adopted.

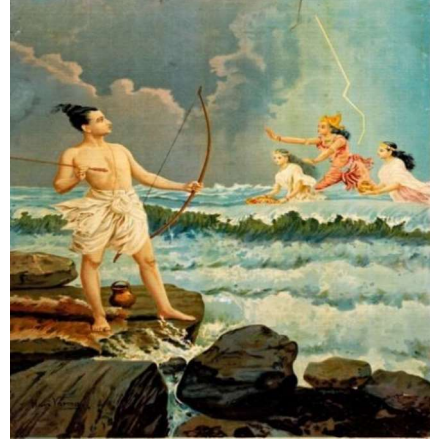
सलिलविकारे कुर्यात्पूजां वरुणस्य वारुणैर्मन्त्रैः ।

तैरेव च जपहोमं शममेवं पापमुपयाति । ।

During a watery portent, Varuṇa should be worshipped with the hymns addressed to him. With the same hymns, chanting and offerings must be made to fire. In this way, sin may be warded off.

Varuṇa

In the Vedic age, Varuṇa was the God of water and ocean. Varuṇa was also the God of law existing in water. A Makara (crocodile) is his vehicle. We find several legends of Varuṇa in Rāmāyaṇa and Mahābhārata. In Rāmāyaṇa, we come across an incident of Rama's victory over Varuṇa. Lord Rāma performed penance for three days and three nights to please Varuṇa, the Lord of Oceans. When Varuṇa has not responded, Rāma begins attacking the ocean with the celestial weapon Brahmāstra. Varuṇa respects Rāma, comes out of the ocean, and bows down to Rāma. This episode was well depicted in a painting by a famous painter 'Ravi Varma'.



Water is worshipped in India from times immemorial. The entire Hindu life moves around the water. The 16 Saṁskāras, essential for every Hindu, are linked with water. They are performed by using water. No holy activity of Hindus is performed without water. Every initiated Hindu performs the Sandhyā-vandana (daily prayer usually performed during the dawn and dusk) with the help of water. The following hymn is recited in Sandhyā-vandana of all traditions within Hinduism.

Āpohiṣṭā mayobhuvastāna-ūrje dadhātana Mahe-raṇāya cakṣase

Yo vaḥ śivatamo rasah, tasya bhājayate ha naḥ uśatiriva mātaraḥ

tasmā araṇga-māya vo yasya kṣayāya jinvatha āpo janayathā ca naḥ etc.

This means, since, O water, you are the source of happiness, please grant us energy-giving food and insight to enjoy your divine splendour.

Like an affectionate mother, you may bless us so that we enjoy this life. We may, O water, quickly come to you for food, shelter and procreant, strength, which

you are always pleased to bestow upon us. May the divine waters be propitious to us for the fulfilment of desires and our drinking. Let them shower on our joy and fearlessness. O water, sovereign of precious treasures, and granter of habitations to men, I solicit of your medicine (for the cure of my infirmities). Wise men have acclaimed that within the waters dwell all balms that heal; the waters contain all healing herbs and the fire, the benefactor of the universe. Two ships in the United States of America Navy have been named USS Varuṇa after the name of Varuṇa, who is a Vedic God of oceans and rivers, and INS Varuṇa is a sail training vessel of the Indian Navy. Thus we can see Varuṇa's name in the modern age also, because the present generation is well aware of the importance of Varuṇa.



Varuna, the Indian Neptune, USS Varuna (1861) & USS Varuna (1943)

In Vedas, we find that the king of all deities was Indra, who is the God of rain also. Thus, treating Indra as a God of all other deities and worshipping him through yajña is not based on just imagination or blind tradition in India. Indra was worshipped because the Vedic seers of Hindu culture were completely aware of the importance of the rain. He gives the water to the earth, and therefore, it forms the responsibility of human beings to satisfy Indra through Yajña. In a great Sanskrit poem, 'Raghuvamśa' (written by a great poet Kālidāsa), we find a beautiful description of how, in ancient period, kings used to perform sacrifices to invoke the God of rain and how the God of rain, in response, used to bestow rains for nurturing the crops on earth.

**Dudoha gām sa yajñāya sasyāya maghavā divaṁ
Sampadvini mayenobhou dadhaturbhuvanadvayam**

Poet Kālidāsa describes the importance of water also in his poem *Kumāra-sambhavam* as follows -

**api kriyārthaṁ sulabhaṁ samit-kuśaṁ
jalānyapi snāna-vidhi kṣamāṇi te
api sva-śaktyā tapasi vartase
śarīramādyam khalu dharma-sādhnam**

Śiva in the form of a brahmacharin asks Pārvatī few questions, as she is performing ongoing penance to attain Śiva as her husband, “Are samit and kuśa for your rites easy to obtain? Do you have the suitable water for your regular baths? Are you engaging in austerities according to your ability? The body, indeed, is the primary means of dharma.

Vedic seers knew the hydrological processes and measurements which are linked to water. The importance of hydrology was explained in various hymns of Vedas and Upaniṣads. This is continued in Purāṇas and even in Mahābhārata. In Bṛhat-samhitā of Varāhamihira, the importance of water, including its hydrological utilities, is explained at length. As the Vedic literature developed, the scientific explanation of water became more transparent or somewhat understandable to the people of that generation. However, in Vedas, this explanation is interpreted in the form of prayers and invocations to various deities in ancient time, and this Indian style is not easily understandable to the people who do not possess knowledge of Sanskrit and adequate experience of Indian culture.

Vedic hymns contain many valuable references to the hydrological cycle of water. According to the description of the Vedic hymns, water is never stationary. However, it continuously gets evaporated, and due to the smallness of particles, we cannot see the up-going water particles. Śvetāśvataropaniṣad describes that fire resides inside of water as God resides in the universe referring to the scientific factor of the ocean where fire resides in the ocean (water). This fire, according to Hindu culture, is called "Baḍabāgniḥ.

**eko haṁso bhuvamāsyāsyā Madhye
sa evāgniḥ salile saṁniviṣṭaḥ
tameva viditvātimṛtyumeti
nānyaḥ panthā vidyate'yanāya"**

Therefore, only after knowing God does an individual soul can transcend the death, there is no other way for salvation.

Water is one of the five outstanding elements among air, water, fire, earth, and ether. Water is also intermediate between all pervasive air and localized earth. Agni Vaiśvānara is the universal God who entered the heart and spirit of Waters. He thus is called apām napāt. Bṛhadāraṇyakopaniṣad relates arka (fire) and āpaḥ (water) in the following way: There was nothing whatsoever here in the beginning. It was covered only by death (Hiraṇyagarbha), he is known as Hunger, because the hunger is equal to death. He created the human mind, thinking, 'Let me have a mind'. He moved about worshipping (himself), and when he was worshipping, water was produced. Since he thought, 'As I was worshipping, the water sprang up', Arka (fire) is so called the water; water indeed reaches the one who knows how Arka (fire) got the name of Arka.

Water is the source of the universe

Vedas revealed their important ideas on cosmology. Upaniṣads also presented their philosophical interpretation regarding the theories of creation. Among the principal Upaniṣads, Praśna, Muṇḍaka, Māṇḍūkya, Taittirīya, Aitareya, Chāndogya and Bṛhadāraṇyaka Upaniṣads had presented the numerous theories on the formation of creation. Nevertheless, the Śvetāsvataropaniṣad gave the theistic idea of creation.

We find two views in Upaniṣads regarding the creation: philosophical and materialistic. The philosophical view holds that the universe originates from the Supreme Being, but the materialistic view indicates the five elements to be the root of this materialist creation. In Ṛgveda, we can find the Nāsadīyasūkta where fascinating investigations of Vedic seers can be found. What is the beginning of this universe? This was the question which was raised. The first hymn of Nāsadīyasūkta, 10th Maṇḍala, Ṛgveda is as follows,

**Nāsadāsīnno sadāsīt tadānīm
nāsīdrajo no vyomā paro yat
Kimāvarīvaḥ kuha kasya śarmann
ambhaḥ kimāsīdghanam gabhīram**

(Then even non-existence was not there, nor existence, There was no air then, nor the space beyond it. What covered it? Where was it? In whose keeping? Was there then cosmic fluid, in depths unfathomed?)

In reply to this question, the Vedic sage says, we find darkness everywhere, hidden by darkness and water.

**tama āsīt tāmasā gūhālam āgre
apraketām salilam sārvaṃ ā idām
tuchyénābhū āpihitam yād āsīt
tapas tām mahinājāyataikam**

(At first there was only darkness wrapped in darkness. All this was only unilluminated cosmic water. That One which came to be, enclosed in nothing, arose at last, born of the power of heat.)

Śvetāsvataropaniṣad poses a question from whom are we born, in whom do we live? A Greek philosopher, Hosioid, asks the same question: "Who made all this, and how did he make them?" Answering this question, Aitareya Upaniṣad states, "In the beginning, only absolute self was there. He created the Ambhas, Marīci, Mara and āpaḥ." Saimāñllokānaṣṭjāta, ambhomaṛicirmaramāpo...

The element beyond the heaven is ambhas (water). Heaven is its support, the sky is Marīci, and the earth is mara. The world, which is below, is āpaḥ. Although the universe is constituted of five elements, due to the great importance of water, Āryans used the synonyms for water as Ambhas, Marīci, Mara, and Āpaḥ. Thus, this Ap-tattva (water element) receives much attention, perhaps because the Vedic sages were frequently affected by floods.

The Śatapathabrāhmaṇa, which belongs to the Śuklayajurveda, refers to water as the first creation. "In the beginning, the water formed from the creator as he was only existing before water, and from water, the foam was formed.

**prajāpatirvā idamagra āsīt eka eva so'kāmayata syām
prajāyeyeti so'śrāmyatsa tapo'tapyata tasmācrāntāttepānāttrayo
lokā asrjyanta pṛthivyantarikṣaṃ dyauḥ**

Bṛhadāranyakopaniṣad, too, points out the water as the base of the world. "In the beginning, there was nothing; the entire universe was enveloped by death alone. He produced the mind. He worshipped himself. As he was worshipping himself, water was produced. Same Upaniṣad further states that the earth is only the froth of water hardened. *Āpo vā arkah tadyadapām Śara āsittamahanyata sā pṛthivyabhavat*. The 'Atharvaveda' too states that earth was formerly water upon the ocean of space "yārṇave rdhiṃ sacilamagra āsīt".

In *Bṛihadāranyakopaniṣad*, we find a passage which states that in the beginning, water alone had existed, and later, from its truth, Brahman and *Prajāpati* both were born. *Prajāpati* has produced the Gods, and Gods worship truth alone. "*Āpā-evedamagra āstu tā āpah*" etc. These references explain the view of Vedic seers who believed that water existed initially and everything came later. Scholars compared it with the views of Thales, a Greek Philosopher who considered water to be the source of creation, discarding the belief in God as a creator of water.

A Sacrifice named *Kārīrīṣṭi* is prescribed for rain. Usually, kings used to perform this sacrifice. Thus, we can find the importance of water given in Vedic literature. All this reveals that the ancient Vedic seers were well aware of the importance and scientific Nature of the water. If we try to understand these statements of ancient seers, undoubtedly, we will be able to understand the various strengths of water in our present age, and by this, we can solve various water-related problems in our present society.

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