

भृगु स्मृति

अथवा

भृगुराथर्वणः भरद्वाज बार्हस्पत्य संवादः

The Bhṛgu Smṛti

Also known as the

lectures of Bhṛgu the Atharvaṇ to

Bharadvāja the son of Bṛhaspati

[Translation, text and discussion of the section of the Bhṛgu  
Smṛti pertaining to early Hindu science]

कुतः सृष्टमिदं विश्वं जगत्स्थावरजङ्गमम् | प्रलये च कमभ्येति तन्मे ब्रूहि पितामह ॥ १॥  
ससागरः सगगनः सशैलः सबलाहकः | सभूमिः साग्निपवनो लोकोऽयं केन निर्मितः ॥ २॥  
सथं सृष्टानि भूतानि कथं वर्णविभक्तयः | शौचाशौचं कथं तेषां धर्माधर्मावथो कथम् ॥ ३॥  
कीदृशो जीवतां जीवः क्व वा गच्छन्ति ये मृताः | अस्माल्लोकादमुं लोकं सर्वं शंसतु नो भवान् ॥ ४॥  
Yudhiṣṭhira questioned Bhīṣma [1]: Wherefrom has this universe consisting of mobile and immobile beings come into being. Where does it go when destroyed, tell me this O grandsire. How has the universe, with all its oceans, its firmament, its mountains, its clouds, its lands, its fire, its wind come into being? How did the elements come into being and how did the distinction into various categories come to be? Whence did the distinction of pure and impure and the distinction of Dharma and Adharma come into being? What is the nature of life of the living beings and what happens upon their death? Tell us every thing about this world and the other world.

भीष्म :

Bhīṣma said:

अत्राप्युदाहरन्तीममितिहासं पुरातनम् | भृगुणाभिहितं श्रेष्ठं भरद्वाजाय पृच्छते ॥ ५॥

Now in this connection is cited an old narrative [2] of the famed words of Bhṛgu when he was questioned by Bharadvāja.

कैलासशिखरे दृष्ट्वा दीप्यमानमिवौजसा | भृगुं महर्षिमासीनं भरद्वाजोऽन्वपृच्छत ॥ ६॥

Beholding the great Ṛṣi Bhṛgu, seated atop the Kailāśa peak, blazing with great energy, Bharadvāja queried him thus:

ससागरः सगगनः सशैलः सबलाहकः | सभूमिः साग्निपवनो लोकोऽयं केन निर्मितः ॥ ७॥

How has the universe, with all its oceans, its firmament, its mountains, its clouds, its lands, its fire, its wind come into being?

कथं सृष्टानि भूतानि कथं वर्णविभक्तयः | शौचाशौचं कथं तेषां धर्माधर्मावथो कथम् ॥ ८॥

How did the elements come into being and how did the distinction into various categories come to be? What are the [rules] of cleanliness and proper conduct?

कीदृशो जीवतां जीवः क्व वा गच्छन्ति ये मृताः । परलोकमिमं चापि सर्वं शंसतु नो भवान् ॥ ९॥

What is the nature of life of the living beings and what happens upon their death?

Tell us every thing about this world and the yonder world [3].

एवं स भगवान्पृष्टो भरद्वाजेन संशयम् । महर्षिर्ब्रह्म सङ्काशः सर्वं तस्मै ततोऽब्रवीत् ॥ १०॥

Thus, the great one was questioned by Bharadvāja regarding his doubts; the great Ṛṣi endowed with brahman power, replied him thus:

मानसो नाम विख्यातः श्रुतपूर्वो महर्षिभिः । अनादि निधनो देवस्तथाभेद्योऽजरामरः ॥ ११॥

There is a primeval entity known to the great Ṛṣis as Mānasa [4]. It is without beginning or end, great, indivisible, not degrading and indestructible.

अव्यक्त इति विख्यातः शाश्वतोऽथाक्षरोऽव्ययः । यतः सृष्टानि भूतानि जायन्ते च म्रियन्ति च ॥ १२॥

It is said to be unmanifest, eternal, undecaying and unchanging. From it the elements arise and into it they perish.

सोऽसृजत्प्रथमं देवो महान्तं नाम नामतः । आकाशमिति विख्यातं सर्वभूतधरः प्रभुः ॥ १३॥

It first gave rise to the great entity Mahat; from mahat arose Ākāsha (space), the entity which holds of all elements

आकाशादभवद्वारि सलिलादग्निमारुतौ । अग्निमारुत संयोगात्ततः समभवन्मही ॥ १४॥

From Ākāsha emerged the liquid element; from the liquid element arose heat and the gaseous element [5]. From the combination of the heat and the gaseous element arose the solid element.

ततस्तेजोमयं दिव्यं पद्मं सृष्टं स्वयम्भुवा । तस्मात्पद्मात्समभवद्ब्रह्मा वेदमयो निधिः ॥ १५॥

That self-born [solid element] opened as lotus filled with energy. From the lotus emerged Brahmā, the object of the Veda.

अहङ्कार इति ख्यातः सर्वभूतात्मभूतकृत् । ब्रह्मा वै सुमहातेजा य एते पञ्च धातवः ॥ १६॥

It is known to have *individuality* [Ahañkāra] [6], all elements emerge from its and it is made of the elements. These five elements that arose are verily that Brahmā of great energy.

शैलास्तस्यास्थि सज्जास्तु मेदो मांसं व मेदिनी । समुद्रास्तस्य रुधिरमाकाशमुदरं तथा ॥ १७॥

The mountains are its bones[7], its fat and flesh is the soil, the oceans are its blood, the atmosphere its stomach.

पवनश्चैव निःश्वासस्तेजोऽग्निर्निम्नगाः सिराः | अग्नीसोमौ तु चन्द्रार्कौ नयने तस्य विश्रुते || १८||

Air is its breath, fire its energy, rivers are its blood vessels. Agni and Soma, the sun and moon are known to be its eyes.

नभश्चोर्ध्वं शिरस्तस्य क्षितिः पादौ दिशो भुजौ | दुर्विज्ञेयो ह्यनन्तत्वात्सिद्धैरपि न संशयः || १९||

The nebulous heights are its head, the earth its feet, and the directions the arms. Without doubt it is difficult to be conceived and endless even for great ones.

स एव भगवान्विष्णुरनन्त इति विश्रुतः | सर्वभूतात्मभूतस्थो दुर्विज्ञेयोऽकृतात्मभिः || २०||

It is thus the one which is worshiped, all pervasive, and known to be endless. In all elements and made up all the elements this cannot be understood by the untrained souls.

अहङ्कारस्य यः स्रष्टा सर्वभूतभवाय वै | यतः समभवद्विश्वं पृष्टोऽहं यदिह त्वया || २१||

That, which is the cause of *individuality*, verily for the generation of all elements; asked by you I have now told you of it from which the universe has emerged.

भरद्वाज

Bharadvāja asked:

गगनस्य दिशां चैव भूतलस्यानिलस्य च | कान्यत्र परिमानानि संशयं छिन्धि मेऽर्थतः || २२||

What is the extent of the firmament's directions, and the extent of the earth and the atmosphere? By telling me the truth, shred my doubts.

भृगुवाच

Bṛgu said:

अनन्तमेतदाकाशं सिद्धचारणसेवितम् | रम्यं नानाश्रयाकीर्णं यस्यान्तो नाधिगम्यते || २३||

This sky is limitless, served by siddhas and Caranas, it is delightful and contains various regions, and neither its end nor its beginning can be reached.

ऊर्ध्वं गतेरधस्तात्तु चन्द्रादित्यौ न दृश्यतः | तत्र देवाः स्वयं दीप्ता भास्वराश्चाग्निवर्चसः || २४||

Above and below the range of their rays the sun and moon cannot see. In those regions there are luminaries, which are self-luminous, glowing like the

blaze of the sun.

ते चाप्यन्तं न पश्यन्ति नभसः प्रथितौजसः | दुर्गमत्वादनन्तत्वादिति मे विद्धि मानद || २५||

Even the above [celestial bodies] of great luminosity do not illuminate the limits of the nebulous sky, due its inaccessibility and infinity. It is so, O giver of respect.

उपरिष्टोपरिष्ठात्तु प्रज्वलद्भिः स्वयम्प्रभैः | निरुद्धमेतदाकाशमप्रमेयं सुरैरपि || २६||

Arrayed after the other are the blazing self-luminous bodies which fill space whose measures incognate to the very celestials.

पृथिव्यन्ते समुद्रास्तु समुद्रान्ते तमः स्मृतम् | तमसोऽन्ते जलं प्राहुर्जलस्यान्तेऽग्निरेव च || २७||

At the end of the land there is sea, at the end of sea there is the the dark space.

At the end of that darkness there is [the world of] water and the end of the the watery world there is the fire.

रसातलान्ते सलिलं जलान्ते पन्नगाधिपः | तदन्ते पुनराकाशमाकाशान्ते पुनर्जलम् || २८||

Beyond the nether-most region there is the water, and at the end of the watery world there is the world of the Pannagas. At its end there is space again, and the end of space there again water [thus they alternate].

एवमन्तं भगवतः प्रमानं सलिलस्य च | अग्निमारुत तोयेभ्यो दुर्ज्ञेयं दैवतैरपि || २९||

Thus are the limits of the great substance of water. The celestial find it difficult to ascertain [the limits] of the fiery, gaseous and liquid substance.

अग्निमारुत तोयानां वर्णाः क्षितितलस्य च | आकाशसदृशा ह्येते भिद्यन्ते तत्त्वदर्शनात् || ३०||

The nature of heat, gas, liquid and solid is actually like that of space, with their divisions known through knowledge of substance.

पठन्ति चैव मुनयः शास्त्रेषु विविधेषु च | त्रैलोक्ये सागरे चैव प्रमानं विहितं यथा | अदृश्याय त्वगम्याय कः प्रमानमुदाहरेत् || ३१||

Sages read in diverse Śāstras about the limits that have have been proposed for the three worlds and the oceans. Who however can set the limits of the universe that cannot be entirely seen with inaccessible regions?

सिद्धानां देवतानां च यदा परिमिता गतिः | तदा गौनमनन्तस्य नामानन्तेति विश्रुतम् |

नामधेयानुरूपस्य मानसस्य महात्मनः || ३२||

Even if one were to establish the extants of the path of he celestials and luminaries, it is not possible to set the limits to that which is known by the name

infinite. That great entity is given the name Mānasa.

यदा तु दिव्यं तद्रूपं ह्रसते वर्धते पुनः | कोऽन्यस्तद्वेदितुं शक्तो योऽपि स्यात्तद्विधोऽपरः ॥ ३३॥

When again its great form is sometimes contracted and sometimes expanded, how can anyone else except one that is equal to it be able to comprehend its limit?

ततः पुष्करतः सृष्टः सर्वज्ञो मूर्तिमान्प्रभुः | ब्रह्मा धर्ममयः पूर्वः प्रजापतिरनुत्तमः ॥ ३४॥

From that lotus-like form[8] emerged the all-knowing primal being- Brahmā the embodiment of Dharma known as the primal Prajāpati.

भरद्वाज

पुष्कराद्यदि सम्भूतो ज्येष्ठं भवति पुष्करम् | ब्रह्माणं पूर्वजं चाह भवान्सन्देह एव मे ॥ ३५॥

Bharadvāja asked: “If the lotus-like form emerged first, then that become primary, yet why is Brahmā called the progenitor? This is my doubt”

भृगुरुवाच

मानसस्येह या मूर्तिर्ब्रह्मत्वं समुपागता | तस्यासन विधानार्थं पृथिवी पद्ममुच्यते ॥ ३६॥

A form of Mānasa became Brahmā. The lotus like form is the solid element which provides a substratum for [Brahmā].

कनिका तस्य पद्मस्य मेरुर्गगनमुच्छ्रितः | तस्य मध्ये स्थितो लोकान्सृजते जगतः प्रभुः ॥ ३७॥

The pericarp of the lotus became Meru, which formed the axis of the world.

Residing in its midst [Brahmā] gave rise to the world.

॥ १ ॥

भरद्वाज

प्रजा विसर्गं विविधं कथं स सृजते प्रभुः | मेरुमध्ये स्थितो ब्रह्मा तद्ब्रूहि द्विजसत्तम ॥ १॥

Bharadvāja asked: “O best of the twice-born, tell me how did the mighty Brahmā, seated in the midst of Meru, give rise to various objects and emanations?”

भृगुरुवाच

Bhṛgu said:

प्रजा विसर्गं विविधं मानसो मनसासृजत् | सन्धुक्षणार्थं भूतानां सृष्टं प्रथमतो जलम् ॥ २॥

Mānasa generated the diverse emanations through Manasa [9]. The liquid element, which sustains all beings emanated first.

यत् प्राणाः सर्वभूतानां वर्धन्ते येन च प्रजाः | परित्यक्ताश्च नश्यन्ति तेनेदं सर्वमावृतम् ॥ ३॥

It is the metabolism of all living beings; they grow and reproduce due to it. If it were not there all life would have perished.

पृथिवी पर्वता मेघा मूर्तिमन्तश्च ये परे | सर्वं तद्वारुणं ज्ञेयमापस्तस्तम्भिरे पुनः ॥ ४॥

The Earth, the mountains, the clouds, their forms are pervade from within and without by [the liquid element]. All is that element Varuṇa, know them to be condensations thereof.

भरद्वाज

Bharadvāja spoke: कथं सलिलमुत्पन्नं कथं चैवाग्निमारुतौ | कथं च मेदिनी सृष्टेत्यत्र मे संशयो महान् ॥ ५॥

“How did the liquid element arise? How did heat and gas emerge? How did the solid element arise? I have great doubts in this regard.”

भृगुरुवाच

Bhṛgu said:

ब्रह्मकल्पे पुरा ब्रह्मन्ब्रह्मर्षीणां समागमे | लोकसम्भव सन्देहः समुत्पन्नो महात्मनाम् ॥ ६॥

In the ancient epoch of the Brahmakalpa, when the Brahmarṣis endued with Brahma assembled together, the great ones developed this same question regarding the origin of the universe.

तेऽतिष्ठन्ध्यानमालम्ब्य मौनमास्थाय निश्चलाः | त्यक्ताहाराः पवनपा दिव्यं वर्षशतं द्विजाः ॥ ७॥

These twice-born ones remained silent and unmoved in contemplation [on this problem], staying away from food and merely subsisting on air for a hundred divine years.

तेषां धर्ममयी वाणी सर्वेषां श्रोत्रमागमत् | दिव्या सरस्वती तत्र सम्बभूव नभस्तलात् ॥ ८॥

Thereafter, [the below] Dharma-filled words reached the ears of all of them.

Indeed this was the celestial Sarasvatī that emerged in the sky [10].

पुरा स्तिमितनिःशब्दमाकाशमचलोपमम् | नष्ट चन्द्रार्कपवनं प्रसुप्तमिव सम्बभौ ॥ ९॥

In the beginning there was only the motionless and immovable space. Without bodies like the sun or moon or the gaseous element it was as though in a state of dormancy.

ततः सलिलमुत्पन्नं तमसीवापरं तमः | तस्माच्च सलिलोत्पीडादुदतिष्ठत मारुतः || १०||

Then the liquid element emerged, like something denser than the existing emptiness[11]. From the outward pressure in the liquid element arose the gaseous element.

यथा भाजनमच्छिद्रं निःशब्दमिव लक्ष्यते | तच्चाम्भसा पूर्यमाणं सशब्दं कुरुतेऽनिलः || ११||

Like a vessel without a fissure the universe was without sound. But when filled with the liquid element sound was transmitted gaseous element.

तथा सलिलसंरुद्धे नभसोऽन्ते निरन्तरे | भित्त्वारणव तलं वायुः समुत्पतति घोषवान् || १२||

Thus the space permeated throughout by the liquid element, and from it [liquid element] penetrated by waves arose the vibrating gaseous element.

स एष चरते वायुरर्णवोत्पीड सम्भवः | आकाशस्थानमासाद्य प्रशान्तिं नाधिगच्छति || १३||

The gas thus by the pressure of the waves in water keeps moving. In the midst of space where there is no countering force it never stops.

तस्मिन्वाय्वम्बुसङ्घर्षे दीप्ततेजा महाबलः | प्रादुर्भवत्यूर्ध्वशिखः कृत्वा वितिमिरं नभः || १४||

Where the gas encountered the liquid element, there was friction and this gave rise the light and heat filled with energy. These radiated forth with upward-directed rays and dispelled the darkness from the space.

अग्निः पवनसंयुक्तः खात्समुत्पतते जलम् | सोऽग्निर्मरुत संयोगाद्भनत्वमुपपद्यते || १५||

The heat acting on the gaseous element spread the liquid element into space.

Through the combination with heat and the gaseous element it [the liquid element] gave rise to dense structures.

तस्याकाशे निपतितः स्नेहस्तिष्ठति योऽपरः | स सङ्घातत्वमापन्नो भूमित्वमुपगच्छति || १६||

These condensates of the liquid element fell of from the sky and solidified to give rise to the solid element.

रसानां सर्वगन्धानां स्नेहानां प्रानिनां तथा | भूमिर्योनिरिह ज्ञेया यस्यां सर्वं प्रसूयते || १७||

This solid element as the earth is known to be the source from which all liquids, substances, smells and living beings originated.



॥ २ ॥

भरद्वाज

Bharadvāja asked:

एते ते धातवः पञ्च ब्रह्मा यानसृजत्पुरा | आवृता यैरिमे लोका महाभूताभिसञ्जितैः ॥ १॥

These five substances emerged first from Brahmā, and they constitute the universe and are known as the Mahābhūtas.

यदासृजत्सहस्राणि भूतानां स महामतिः | पञ्चानामेव भूतत्वं कथं समुपपद्यते ॥ २॥

Thousands of substances emerged from the great [Brahmā] but why are only these 5 considered the primary Bhūta?

भृगुरुवाच

Bhṛgu said:

अमितानां महाशब्दो यान्ति भूतानि सम्भवम् | ततस्तेषां महाभूतशब्दोऽयमुपपद्यते ॥ ३॥

Those elements which are further undefinable are known as “Mahā”, hence these elements are known as Mahābhūtas.

चेष्टा वायुः खमाकासमूष्माग्निः सलिलं द्रवः | पृथिवी चात्र सङ्घातः शरीरं पाञ्च भौतिकम् ॥ ४॥

Activity is in gas, vacuum is in space, vapor is due to heat, viscosity is in liquid and conjoint structure is in solid. So the bodies are made of the five Bhūtas.

इत्येतैः पञ्चभिर्भूतैर्युक्तं स्थावरजङ्गमम् | श्रोत्रं घ्राणं रसः स्पर्शो दृष्टिश्चेन्द्रियसञ्जिताः ॥ ५॥

Thus are all objects mobile and immobile made of the the five Bhūtas. [The five Bhūtas] are also perceived the ears, nose, taste organs, touch organs and eyes.

भरद्वाज

Bharadvāja asked:

पञ्चभिर्यदि भूतैस्तु युक्ताः स्थावरजङ्गमाः | स्थावराणां न दृश्यन्ते शरीरे पञ्च धातवः ॥ ६॥

If all bodies mobile and immobile are made of these five Bhūtas, then why do we not see these 5 substances in the bodies of the immobile?

अनूष्मनामष्टानां घनानां चैव तत्त्वतः | वृक्षाणां नोपलभ्यन्ते शरीरे पञ्च धातवः ॥ ७॥

The trees have no heat and they do not seem to have [their own] motion or solid particles. So they are not made of the 5 substances.

न शृण्वन्ति न पश्यन्ति न गन्धरसवेदिनः | न च स्पर्शं विजानन्ति ते कथं पाञ्च भौतिकाः ॥ ८॥

They do not hear, they do not see, they do not perceive smell or taste and they do not perceive touch. So how can they sense the 5 Bhūtas.

अद्रवत्वादनघ्नित्वादभौमत्वादवायुतः | आकाशस्याप्रमेयत्वाद्वृक्षाणां नास्ति भौतिकम् ॥ ९॥

It seems to me that as they lack any liquid material, and heat, any solidity, any gas and space, plants cannot be considered as conglomerates of Bhūtas.

भृगुरुवाच

Bhṛgu said:

घनानामपि वृक्षाणामाकाशोऽस्ति न संशयः | तेषां पुष्प फले व्यक्तिर्नित्यं समुपलभ्यते ॥ १०॥

Without doubt the plants have space and solidity contained within them. It is due to this these put forth flowers and fruits from within them.

ऊष्मतो ग्लान पर्णानां त्वक्फलं पुष्पमेव च | म्लायते चैव शीतेन स्पर्शस्तेनात्र विद्यते ॥ ११॥

They heat within them hence the leaf, bark, fruit and flowers ripen. They sicken and dry up suggesting that they have a sense of touch.

वाय्वग्न्यशनि निष्पेषैः फलपुष्पं विशीर्यते | श्रोत्रेण गृह्यते शब्दस्तस्माच्छृण्वन्ति पादपाः ॥ १२॥

Under the sounds of wind, fire and thunder, fruits fall off and flowers close. This suggests that they have organs by which they sense sound.

वल्ली वेष्टयते वृक्षं सर्वतश्चैव गच्छति | न ह्यदृष्टेश्च मार्गोऽस्ति तस्मात्पश्यन्ति पादपाः ॥ १३॥

The creepers winds on trees moving all around. One cannot sense path without seeing, so they have the sense of light.

पुण्यापुण्यैस्तथा गन्धैर्धूपैश्च विविधैरपि | अरोगाः पुष्पिताः सन्ति तस्माज्जिघ्रन्ति पादपाः ॥ १४॥

They have diverse smells, good and bad, and perfumes. They sense these scents to recover from disease and put out flowers.

पादैः सलिलपानं च व्याधीनामपि दर्शनम् | व्याधिप्रतिक्रियत्वाच्च विद्यते रसनं द्रुमे ॥ १५॥

With their roots [plants] drink water and they are also seen to acquire diseases. These diseases can be cured with medicines, and this suggests that the plants

have a sense of taste.

वक्त्रेणोत्पल नालेन यथोर्ध्वं जलमाददेत् | तथा पवनसंयुक्तः पादैः पिबति पादपाः || १६||

Just as one can suck water through tubes in a bent lotus stalk, thus plants, by means of the force of the gaseous element suck water with their roots.

ग्रहणात्सुखदुःखस्य छिन्नस्य च विरोहणात् | जीवं पश्यामि वृक्षाणामचैतन्यं न विद्यते || १७||

They are affected by pleasures and pains and regenerate when cut up. Hence, I conclude that plants have life and are capable of sensory perception.

तेन तज्जलमादत्तं जरयत्यग्निमारुतौ | आहारपरिनामाच्च स्नेहो वृद्धिश्च जायते || १८||

The action of heat and the gaseous element cause the sap that has been thus sucked to be digested. Depending on the amount of sap that has been consumed there is an advance in [the plant's] growth.

जङ्गमानां च सर्वेषां शरीरे पञ्च धातवः | प्रत्येकशः प्रभिद्यन्ते यैः शरीरं विचेष्टते || १९||

All animals are similarly composed of 5 primary substances, in each the [5 substances] occur in different proportions and are responsible for the activities of their bodies.

त्वक्च मांसं तथास्थीनि मज्जा स्नायु च पञ्चमम् | इत्येतदिह सङ्ख्यातं शरीरे पृथिवी मयम् || २०||

Integument, muscles, skeleton, marrow, sinews, these five combine together in the body and are dominated by the solid element.

तेजोऽग्निश्च तथा क्रोधश्चक्षुरूष्मा तथैव च | अग्निर्जरयते चापि पञ्चाग्नेयाः शरीरिणः || २१||

Metabolic energy, anger, sight, internal heat, and also the digestive fire are the five fires in all organisms.

श्रोत्रं घ्राणमथास्यं च हृदयं कोष्ठमेव च | आकाशात्प्राणिनामेते शरीरे पञ्च धातवः || २२||

Hearing and smelling organs, mouth, heart and the gut comprise the 5 representations of space in the body of animal.

क्षेष्मा पित्तमथ स्वेदो वसा शोणितमेव च | इत्यापः पञ्चधा देहे भवन्ति प्राणिनां सदा || २३||

Lymph, digestive secretions, excretory secretions, fats and blood are the five derivatives of the liquid element that always occur in animals.

प्राणात्प्राणीयते प्राणी व्यानाद्वायच्छते तथा | गच्छत्यपानोऽवाक्चैव समानो हृद्यवस्थिथ || २४||

The Prāṇa runs the bodily metabolism of animals; through Vyāna they show muscular action. Apāna excretes things out, Samāna is in cardiac action.

उदानादुच्छ्वसिति च प्रतिभेदाच्च भासते | इत्येते वायवः पञ्च चेष्टयन्तीह देहिनम् || २५||

Udāna erupts upwards and causes speech. These are the 5 winds that drive metabolic activity in bodies.

भूमेर्गन्धगुणान्वेत्ति रसं चाद्भ्यः शरीरवान् | ज्योतिः पश्यति चक्षुर्भ्यां स्पर्शं वेत्ति च वायुना || २६||

An animal sense scents with solid element, tastes with the liquid element, light through the eyes allows sensing forms, and though the gaseous element it senses touch.

तस्य गन्धस्य वक्ष्यामि विस्तराभिहितान्गुणान् | इष्टश्चानिष्ट गन्धश्च मधुरः कटुरेव च || २७||

I shall describe the general properties of sense of smell and the other senses that are common to both animal and plants. The smells sensed are “attractive”, “unattractive”, sweet and pungent.

निर्हारी संहतः स्निग्धो रूक्षो विशद एव च | एवं नवविधो ज्ञेयः पार्थिवो गन्धविस्तरः || २८||

There are also [smells] like “far-reaching”, “complex”, “moist”, “dry” and “sulfurous stench”. These nine varieties of smell are all derived from the solid element.

शब्दः स्पर्शश्च रूपं च रसश्चापां गुणाः स्मृताः | रसज्ञानं तु वक्ष्यामि तन्मे निगदतः शृणु || २९||

Sound, touch, visual form and taste are the properties of water. I shall now expound the perception of taste; listen to me.

रसो बहुविधः प्रोक्तः सूरिभिः प्रथितात्मभिः | मधुरो लवनस्तिक्तः कसायोऽम्लः कटुस्तथा | एष षड्विध  
विस्तारो रसो वारि मयः स्मृतः || ३०||

The learned scholars have identified many varieties of tastes, namely sweet, salty, tingling, bitter, sour and pungent. These six are the types of tastes emanating from the liquid element.

शब्दः स्पर्शश्च रूपं च त्रिगुणं ज्योतिरुच्यते | ज्योतिः पश्यति रूपाणि रूपं च बहुधा स्मृतम् || ३१||

The heat and light element has properties of sound, touch and form. Form is sensed via light and forms are known to be of many types.

ह्रस्वो दीर्घस्तथा स्थूलश्चतुरस्रोऽनु वृत्तवान् | शुक्लः कृष्णस्तथा रक्तो नीलः पीतोऽरुणस्तथा | तथा खरो  
मृदुः श्लक्ष्णो लघुर् गुरुतरो ऽपि च | एवं द्वादश विस्तारो ज्योती रूपगुण स्मृतः || ३२||

Short, tall, large, four-cornered, round, white, black, blood-red, blue, yellow, dawn-hued, stark, softened, standing-out, heavy and light; these twelve different types [12] constitute the property of light (vision).

शब्दस्पर्शी तु विज्ञेयौ द्विगुणो वायुरुच्यते | वायव्यस्तु गुणः स्पर्शः स्पर्शश्च बहुधा स्मृतः || ३३||

Both sound and touch are the known to be two properties of the gaseous element. The property of the wind-element is touch and its known to be of many kinds

कठिनश्चिक्कनः क्षक्षणः पिच्छलो मृदु दारुणः | उष्णः शीतः सुखो दुःखः स्निग्धो विशद एव च | एवं द्वादश विस्तारो वायव्यो गुण उच्यते || ३४||

Hard, soft, agreeable, disagreeable, smooth, rough, hot, cool, pleasurable, painful, viscous and fluid are said to be the twelve types of properties of the gaseous element.

तत्रैकगुणमाकाशं शब्द इत्येव तत्स्मृतम् | तस्य शब्दस्य वक्ष्यामि विस्तरं विविधात्मकम् || ३५||

Space has only one property; it is known as sound. I shall now tell you the different kinds of sound.

षड्ज ऋषभगान्धारौ मध्यमः पञ्चमस्तथा | धैवतश्चापि विज्ञेयस्तथा चापि निषादकः || ३६||

They are ṣaḍja, ṛṣabha, gāndhāra, madhyama, pañcama, dhaivata and niṣādaka.

एष सप्त विधः प्रोक्तो गुण आकाशलक्षणः | त्रैस्वर्येण तु सर्वत्र स्थितोऽपि पटहादिषु || ३७||

These are the seven kinds of properties that are related to space. The three tones present within all space, but are attached especially to drums [13].

मृदङ्ग भेरी शङ्खानां स्तनयित्तो रथस्य च | यः कश्चिच्छ्रूयते शब्दः प्राणिनो ऽप्राणिनो ऽपि वा | एतेषाम् एव सर्वेषां विषये संप्रकीर्तितः |

Whatever sound is heard from a mṛdaṅga (drum), bherī (pipe), conch, thunder, and a chariot, as also those produced by living and non-living objects, are all included in these seven kinds of sound already enumerated.

एवं बहुविधाकारः शब्द आकाशसंभवः | आकाशजं शब्दमाहुरेभिर्वायुगुणैः सह | अव्याहृतैश्चेतयते न वेत्ति विषमागतैः || ३८||

Thus sound of various kinds, emerges due to space. It is said that sound emerges in space in combination with the gaseous element. When induced by impact it propagates, but cannot be propagated otherwise.

आप्यायन्ते च ते नित्यं धातवस्तैस्तु धातुभिः | आपोऽग्निर्मारुतश्चैव नित्यं जाग्रति | देहिषु मूलम् एते शरीरस्य व्याप्य प्राणान् इह स्थिताः॥ ३९॥

The element combining with the other elements [in the body] constantly grow the compounds. The liquid, heat and gaseous elements are constantly active in the bodies. They are the roots of the body and pervading the metabolic processes they constitute the bodies.

॥ ३ ॥

भरद्वाज

Bharadvāja asked:

पार्थिवं धातुमाश्रित्य शारीरोऽग्निः कथं भवेत् | अवकाश विशेषेण कथं वर्तयतेऽनिलः ॥ १॥

How in the body does the solid element present itself and what becomes of the heat? How also does space manifest itself, and how does the gaseous element circulate in the body?

भृगुरुवाच

Bhṛgu said:

वायोर्गतिमहं ब्रह्मन्कीर्तयिष्यामि तेऽनघ | प्राणिनामनिलो देहान्यथा चेष्टयते बली ॥ २॥

I shall, O sage, speak to you of the path by which which the gaseous element moves, and how, O sinless one, that mighty substance causes the bodies of organisms to move.

श्रितो मूर्धानमग्निस्तु शरीरं परिपालयन् | प्राणो मूर्धनि चाग्नौ च वर्तमानो विचेष्टते ॥ ३॥

Heat resides within the brain and takes care of the entire body. The metabolic activity, Prāṇa, residing within the head, along with the heat, causes movements and actions.

सजन्तुः सर्वभूतात्मा पुरुषः स सनातनः | मनो बुद्धिरहङ्कारो भूतानि विषयाश्च सः ॥ ४॥

That is mark of life, the core of all life forms also known as the eternal puruṣa, basis of the mind, intelligence, and consciousness, as also sensory apparatus of all organisms.

एवं त्विह स सर्वत्र प्राणेन परिपाल्यते | पृष्ठतश्च समानेन स्वां स्वां गतिमुपाश्रितः || ५||

Thus the organism is, in every respect, controlled by the metabolic activities. At the basis of every activity is the metabolic process called Samāna, which makes every muscular activity run.

वस्ति मूलं गुदं चैव पावकं च समाश्रितः | वहन्मूत्रं पुरीसं चाप्यपानः परिवर्तते || ६||

The metabolic process Apāna, depending on the metabolic energy that is in the urethra and the colon, acts, and is involved in excreting urine and feces.

प्रयत्ने कर्मणि बले य एकस्त्रिषु वर्तते | उदान इति तं प्राहुरध्यात्मविदुषो जनाः || ७||

That unifying metabolic process, which operates in these three, is called Udāna by those that are conversant with science.

सन्धिष्वपि च सर्वेषु संनिविष्टस्तथानिलः | शरीरेषु मनुष्याणां व्यान इत्युपदिश्यते || ८||

That metabolic process, which operates, residing in all the joints and nerves of beings' bodies, is called Vyāna.

धातुष्वग्निस्तु विततः समानेन समीरितः | रसान्धातूँश्च दोषाँश्च वर्तयन्नवतिष्ठति || ९||

The metabolic energy in the bodies of organisms is circulated all over by Samāna. Situated thus in the body, that process cause the circulation of different kinds of fluids, humors and substances through the body.

अपान प्राणयोर्मध्ये प्राणापान समाहितः | समन्वितः स्वधिष्ठानः सम्यक्पचति पावकः || १०||

That metabolic process, residing between Apāna and Prāṇa, combining Apāna and Prāṇa, in the region of the Svādiṣṭhāna ganglion, with the aid of those two processes, causes digestion.

आस्यं हि पायु संयुक्तमन्ते स्याद्गुद सञ्जितम् | स्रोतस्तस्मात्प्रजायन्ते सर्वस्रोतांसि देहिनाम् || ११||

There is a tube from the mouth down to the anus, with the colon at its extremity. Associated with it is a vessel that from which numerous subsidiary ones branch out into the body.

प्राणानां संनिपाताच्च संनिपातः प्रजायते | ऊष्मा चाग्निरिति ज्ञेयो योऽन्नं पचति देहिनाम् || १२||

Due the combined flow of many metabolic processes the mixed flows are born. One such is the metabolic process called Uṣmān, the energy that causes digestion of food in bodies.

अग्निवेगवहः प्राणो गुदान्ते प्रतिहन्यते | स ऊर्ध्वमागम्य पुनः समुत्क्षिपति पावकम् || १३||

The metabolic process bearing the *swift energy*, descends to the extremity of the anal canal and thence is sent upwards once more. Having gone this energy is circulated back downwards.

पक्वाशयस्त्वधो नाभेरूर्ध्वमामाशयः स्थितः | नाभिमध्ये शरीरस्य सर्वे प्राणाः समाहिताः || १४||

Below the navel is the region of digested matter. Above it is that for the food which is ingested. In the navel region, the various metabolic processes of the body act together.

प्रसृता हृदयात्सर्वे तिर्यगूर्धमधस्तथा | वहन्त्यन्नरसान्नाद्योऽदश प्राण प्रचोदिताः || १५||

Impelled by the ten metabolic process, the [ducts], branching out from the heart, convey the food substances that food yields, upwards, downwards, and in transverse directions.

एष मार्गोऽथ योगीनां येन गच्छन्ति तत्पदम् | जितक्लमासना धीरा मूर्धन्यात्मानमादधुः || १६||

Through this duct the Yogīs, vanquishers of fatigue, undisturbed and intelligent, attain *that state*, by holding the Ātmā within the brain.

एवं सर्वेषु विहितः प्राणापानेषु देहिनाम् | तस्मिन्स्थितो नित्यमग्निः स्थाल्यामिव समाहितः || १७||

Thus dispersed are the Prāṇa, Apāna and others in bodies of organisms. There in the metabolic heat is always burning, like a fire placed in a vessel.

||४||

[Here ends the section of the Bhṛgu Smṛti pertaining to the early scientific ideas of the Hindus]

### Notes on the text and translation

[1] The Bhṛgu Smṛti or the narrative of Bhṛgu to Bharadvāja begins with chapter 182 of the Ganguli edition of the Mahābhārata and with chapter 176 of the BORI 'critical' edition.



[2] “अत्राप्युदाहरन्तीममितिहासं पुरातनम् ।” This is a characteristic phrase with which the narratives are inserted into the Śānti Parvā dialogs and occurs repeatedly in the great epic.

[3] A direct repeat of the opening verses. This device of repetition, with these verses exactly mirroring the questions of Yudhiṣṭhira, is a classic example of how narratives are inserted into the Śānti Parvā discourse.

[4] This concept is first seen in the Nāsadiya Sūktam (RV10.129)

[5] This concept is development of what is expressed in the Taittirīya āraṇyaka, Ānandavalli (2.1)

[6] Ahañkāra: translated as individuality. This is a peculiar term used in Hindu origin theories, which from the contexts is best interpreted as the intrinsic individuality that the universe or a constituent possesses. The theological explanation of the later Hindu schools of the term as “ego” does not provide a proper meaning for it in this context.

[7] This whole set of equivalences between constituents of the world and the parts of the “universal being” is an ancient Indo-European concept. It is seen the Aśvamedha Brāhmaṇa of the Bṛhadāraṇyaka Upaniṣad.

[8] Refer to verse 15 of this chapter for the idea of the primal lotus.

[9] One may interpret Manasa as the self-will of Mānasa

[10] The heavenly Sarasvatī is an allusion to the Milky Way

[11] Literally something darker than existing darkness.

[12] The terminal stiche is incorrect in the critical edition properties (it mentions 12 properties and only eleven are listed). The verse is only corrected by following traditional Bhārgava version.

[13] The critical edition is flawed after this verse and misses several necessary verses, without which the reading loses continuity.

## Discussion on the Bhṛgu smṛti (BhS)

### *Basic structure of the BhS*

The BhS is one of the Smṛtis of the Bhārgavas that is attributed to the founder of their clan, Bhṛgur-ātharvaṇa or Bhṛgu Vāruṇi. It is also found embedded in the Śānti Parvā of the Mahābhārata within the death-bed lecture of Bhīṣma, the Kuru patriarch, to the victorious Yudhiṣṭhira. The text is of considerable interest because it covers a greater diversity of topics in comparison to other Smṛtis. In addition to covering topics, which are the common concern of the Smṛtis in general, it shares certain interesting features with the Manu Smṛti or the Mānava Dharmaśāstra (MDS): 1) It contains a long a cosmogonic or origin-mythology section at the very beginning of the text. 2) Its narrator is the great ṛṣi Bhṛgu, who is in dialogue with the Āṅgira ṛṣi, Bharadvāja. However, unlike the other Smṛtis, the BhS allots a disproportionately larger space to origin mythology, cosmogonic issues and Adhyātmā than any of the other Smṛtis. Given its content and principle protagonist, the BhS can be considered a part of the massive Bhārgava redaction of the ancient Bhārata epic, which introduced several major inserts into the ancestral text, chiefly pertaining to the stories of the Bhārgava clan and the struggle of their hero, Rāma of the Axe with the Haihayas. The Manu Smṛti itself appears to have undergone an early major redaction, under an unknown Bhārgava scholar, who introduced or exaggerated the section on origin-mythology. This redaction of MDS also introduced Bhṛgu as its narrator. This suggests that the MDS probably co-opted devices that were earlier established by the Bhārgavas in the compilation of the BhS.

The BhS has four distinct sections:

*Section 1 with 4 chapters:* Covers origin mythology, cosmogony and proto-science and is presented above.

*Section 2 with 2 chapters:* Covers Adhyātmā. Here Bhṛgu first introduces a certain version of the law of conservation of matter. He thus explains that the bodies of organisms are not permanently destroyed but transform from one state

of elemental combinations to another. Then, he introduces the idea that the mind is a purely material entity similar to the other chemical constituents of the body. Finally, he introduces the concept of the Ātmā as an independent entity that is pure consciousness. He describes this consciousness as surviving the dissipation of the aggregates of matter known as living organisms. He then goes on to describe that Yoga is the means by which this pure consciousness may be realized.

*Section 3 with 2 chapters:* describes the 4 Varṇas of Ārya society and the mlecchas. Bhṛgu first mentions that the Brāhmaṇa are white in complexion, the Kṣatriyas are ruddy, the vaiśyas tawny and the śudras black. But Bharadvāja counters that if complexion were the only criterion then it appears that the 4 Varṇas have extensively mingled with each other. He also goes on to say that the mental emotions, instincts and basic physiology of all humans appears to be the same and questions their division into 4 Varṇas. Bhṛgu provides a peculiar answer by stating that originally there was only the Brāhmaṇa. Subsequently they underwent professional divergence and behavioral transmutation to give rise to the 3 other Varṇas and mlecchas. The Brāhmaṇas who fail to observe their rites and ritual conduct are said to fall to the other Varṇas. At the same time BhS, in sharp contrast with the MDS and other Dharmasāstras, declares that the Veda and the performance of Vedic rituals are available to all the 4 Varṇas. However, the characteristics of the śudras are described as the negligence of Vedic study, consumption of unclean (abhojya and abakṣya) foods and unclean practices. Those śudras who observe self-restraint and self-control are mentioned as not being considered śudras (but it is not clear what they are then?).

*Section 4 with 3 chapters:* describes the puruṣārthas and āśramas. For all the āśramas of life the person is recommended to follow non-injury to life, truthfulness and calmness, along with the performance of all the due rituals of twilight worship and fire worship. In the householder state, the person is entitled to use cosmetics and ornaments, enjoy of pleasures derived from dancing and music, both vocal and instrumental, good food and drink, and sex. In the last

station of life one performs the internal Agnihotra and worships the internal Agni with internal oblations. This section also describes a peculiar group of ascetics known as the Parivrajakas, who observe complete renunciation of all pleasures and live a life of Ahimsa.

### *Parallels with early Greek thought*

Of greatest interest is the first section that covers cosmogony and proto-science of the Hindus. An examination of this section reveals the many connections to the Vedic Samhitās and Upaniṣads. In most cases the BhS represents an evoluted or a further development of the germs of ideas seen in the former texts, buttressed by some new concepts that appear to emerge from the need to reconcile the divergent presentations provided by the earlier texts. This suggests that the BhS was produced by the Bhārgavas shortly after the core Vedic period and attributed to their founding father. Many features of the text suggest a continuity in intellectual tradition starting from the earlier works of the Bhṛgu seers in the Atharvaveda and the Upaniṣads. However, equally striking are the similarities to the early Greek philosophical works that are considered to be the basis of Western science and intellectual thought. The deep parallels suggest that BhS and related texts similarly constitute an important early stratum of Hindu scientific thought, and that Greek and Hindu scientific thought had a common ancestor that already possessed several of its chief features. We discuss below a few of these parallels.

Thales of Miletus, often called the “first of the Greek philosophers”, is attributed to have made two famous statements:

1) [Water is the foundation of the world](#) and 2) [All things are full of gods](#) (DK 1A14).

The first statement is mirrored in the BhS 1.27-29 in the description of the watery worlds at the foundation of the solid world. The second statement is the expression of pantheism that is expressed throughout early Hindu thought,

including the idea of the world pervaded by Prajāpati in the BhS. Anaximander of Miletus, who was a younger contemporary of Thales, is also believed to have presented a cosmogony and world model and discussion of living organisms much in the spirit of the BhS. Anaximander states:

“The principle (*archē*) and element (*stoicheion*) of all existing things was the entity termed *apeirōn* [unlimited]. It is neither water, nor any of the so-called elements, but something else an infinite entity, from which all the heavens and the worlds within them come into being. And the source of coming-into-being for existing things is also that into which perishing takes place...” (DK 12A1).

For the much later Aristotle the *apeirōn* is the “Prime Matter” and he mentions that Anaximander had described the *apeirōn* as being “divine, immortal, indestructible and being unborn or self-born”. Anaximander describes the emergence of the universe from the *apeirōn* in a poetic language, full of images, similar to the Hindu text (compare with the lotus-pericarp imagery of the BhS). He says: “an embryo, pregnant with ‘hot’ and ‘cold’, separated itself off from the eternal *apeirōn*, whereupon out of this germ a sphere of fire grew around the vapor that surrounds the earth, like a bark round a tree” (DK 12A10). The *apeirōn* concept equivalent to the Mānasa presented in BhS 1.11 and is described using very similar adjectives. While the embryo that gives rise to the universe is the cognate of the Prajāpati as Hiranyagarbha of the Hindu texts, in the BhS it is paralleled by Prajāpati in the lotus.

Anaximander was succeeded by Anaximenes son of Eurystratus, the next great philosopher from Miletus. He wrote a text inspired by the former, who may have been his teacher. His views on the “elements” are thus expressed:

“Air differs in essence in accordance with its rarity or density. When it is thinned it becomes fire, while when it is condensed it becomes wind, then cloud, when still more condensed it becomes water, then earth, then stones. Everything else comes from these.” (DK13A5)

This hypothesis of Anaximenes finds a remarkable parallel in the thoughts expressed in BhS 2.10-17, eventhough some of the actual details may differ.

Further, Anaximenes states:

“Air is the principle (*archē*) of all existing things; for from it all things come come-to-be and into it they are again dissolved. As our soul being the air element holds us together and controls us, so does the wind (as breath, *pneuma*) encompass the whole world.” (DK 13B2)

The role of the gaseous element as Prāṇa controlling the body is described in chapter 4 of the BhS. In BhS 1.18 Vāta is described as the breath of the world-being (Anaximenes' *Pneuma* of the *Pantheos*- world being). This concept is seen even the ancient ṛgvedic hymn to Vāta, where the air is called the Ātmā of the gods that encompasses the world (RV10.168.4). A philosophy similar to that of Anaximenes is presented by Raikva of the cart to Jānśrutī in the Chāndogya Brāhmaṇa of the Sāmaveda. This similarity between the Greek tradition, which is considered to lie at the base of Western scientific and philosophical thought, and Hindu intellectual tradition goes beyond the above-mentioned points pertaining to the Milesian School. For example, the analysis of sound presented in the BhS is close to the starting point for the elaborate mathematical analysis of sound by the Pythagoreans. The ideas on Adhyātmā presented in the two chapters in the second section (BhS 5-6) are paralleled in the works of Pythagoras, Heraclitus and Empedocles. Plato's *Republic* (3-4) provides a division of human society into 3 castes, 'guardians', 'auxiliaries' and 'craftsmen and husbandmen', which parallels the Varṇas of Dharma treatises and the similar social stratification seen in other Indo-European cultures. More specifically, Plato appears to stress on the role of "Guṇa" or conduct in determining the caste, just as BhS 8. Plato expounds in the *Republic* that all the castes were born from a common being, but they came to differ because of the differences in their "souls". Like the complexions assigned by the BhS to castes, Plato terms them as being golden, silver and brass or iron respectively. The highest caste, which includes the philosophers and the guardians of the nation, are dominated by reason and observe an

austere life without indulging in excesses. The second caste is dominated by aggressiveness and the third caste by passivity and appetite. Plato too notes that the members of the guardian caste, who fail to observe their high conduct, degrade to the lower castes. Mirroring the Dharma treatises Plato warns against the rule of the state by the members of the lowest caste and mentions that such a state goes to ruin.

Another point of interest is the primitive version of the Yogic “Kuṇḍalinī doctrine” presented in the BhS 4. The BhS holds that the ātmā (or the prāṇa) is held by yogis in the brain to attain the highest *yogic state*. The path of the ātmā to the brain is believed to be via a carotid artery ascending from the heart. This concept is very similar to the views expressed in the earlier Upaniṣads such as the Chāndogya Upaniṣad (8.6.6) of the Sāmaveda, Maitrayāṇa Brāhmaṇa [Upaniṣad] (6.21) of the Maitrayāṇa branch of the Kṛṣṇa Yajurveda and the Praśna Upaniṣad (chapter 3) of the Paippalāda branch of the Atharvaveda. The movement of prāṇa in the body and conveyance of nutrition to the body by the arteries branching out of the heart as explained in the BhS echoes a similar (more primitive) exposition by the seer Yājñavalkya to the king Janaka in the Bṛhadāraṇyaka Upaniṣad. Further, the Maitrayāṇa Brāhmaṇa clearly mentions that the carotids emerging from the aorta are paired arteries that move parallelly to the brain. This suggests that the original “Kuṇḍalinī doctrine” supposed that the path of the ātmā (or the prāṇa) to the brain lay via an arterial route rather than a nervous one. The main development of the Yoga-Tantra stream appears to have been the recognition of the nervous basis for the process and the identification of the role of the spinal cord and the ganglia and neural plexi.

In the Greek world parallels to the anatomy expounded in the BhS is seen in the work of Diogenes (DK 64B6), which is quoted by Aristotle in his *Historia Animalium*. However, the “Kuṇḍalinī doctrine” presented by Plato in the *Timaeus* is much closer to the version of the Yoga-Tantra period. He mentions that the

true home of the 'soul-stuff' is the brain that under the influence of 'false *eros*' passes downwards through the spinal passage and is emitted through the phallus as semen. He also mentions two accessory channels of 'soul-stuff' that pass on either side of the spinal cord (*Timaeus* 77b-c). This view of the spinal cord as the "holy tube" conducting *engkephalos* from the brain to the base of the spine, where it becomes semen, is also expressed by Alcmaeon, the medical philosopher from Croton (DK 14A13). This suggests that the BhS represents an earlier stage of development of this doctrine and the Greek world only appears to preserve a developed later version of it similar to that seen in the Yoga-Tantra literature.

The similarity between Greek and Hindu proto-science requires an appropriate explanation, but such an explanation cannot be easily obtained. In general, there are two genres of explanations: 1) Lateral transfer and 2) Vertical inheritance from an early Indo-European precursor. The third alternative of pure convergence is ruled out because of the numerous specific similarities that are not encountered in other coeval cultures of the ancient world (There have been some claims for similar systems in Egypt and Mesopotamia [1]. While there are certain shared motifs with these systems, the Indo-Greek system has specific shared features that are entirely lacking in the other ancient systems).

The Greek system, as we know it, appears to be suddenly between 600-500 BCE in the milieu of Miletus. It is already well-developed and has several abstract theoretical constructs and generally resembles the systems presented in BhS and the MDS. The genre of astronomy of the Milesian School also resembles the early Hindu astronomy expounded in the Itihāsa, which is likely to be of the same era as the BhS. In contrast, the Hindu system seen in the BhS represents a stratum in a long evolutionary process that begins with the much earlier systems presented in the Vedic Samhitās and early Upaniṣads. The presence of this anterior evolutionary history amongst the Hindus supports a



potential lateral transfer from India to the Greek world. However, such a model is fraught with certain difficulties: 1) Extensive Indo-Greek contact as known in mainstream history, happened in only in the much later Post-Alexandrian period. 2) Despite the detailed similarities between the Hindu and the Greek systems, Anaximander's geography suggests that he had, at best, a very vague idea of the existence of India. To counter these difficulties, some scholars have suggested the role of the rising Iranian Achaemenid Empire as an intermediary between India and Greece. While this is not implausible, it has to be noted that the Iranians do not seem to have been influenced much by these Indic ideas despite their greater proximity.

The vertical inheritance model from an ancestral IE precursor is supported by the presence of several motifs such as the Macranthropic motif, the caste divisions and the associated origin mythology and evidence for proto-Smṛtis. Further, the similarities go beyond proto-Science and include detailed parallels between the Greek theater and the Hindu Nāṭya śāstra, as well Greek and Hindu medicine. This pervasiveness of similarities also supports an inheritance from an ancestral source. However, this model too is affected by similar problems as the lateral transfer model: In linguistic terms the Indic branch of IE is closest to Iranian, and then the other Satem assemblage of Slavic and Baltic. Greek appears to have been the sister group of this entire proto-Satem assemblage (The latter unified by both the Satem and the RUKI rule). However, neither Iranian nor Balto-Slavic cultures preserve any vestiges that may considered similar to the Indo-Greek proto-scientific system. An alternative vertical model is that the motifs were present in the common ancestor but their assembly into proto-science and philosophy happened only in India and Greece due to the similar intellectual conditions. The long history of texts combined with the repeated re-working of pre-existing texts to reconcile and correct their concepts may have convergently produced very similar systems because their starting material was anyhow very similar due to common origin [2].

In both models Iran remains the anomaly due to linguistic, cultural and geographical proximity to the Hindu world. Indic and Iranian literature is strikingly parallel in the early stages. There are several parallel texts such as the *Yajurveda* and the *Ṛgveda*, the *Yazna Haptanghāiti* and the *Yajurveda*, the *Yazna* explanatory section and the ritual sections of the *Brāhmaṇa* texts, the *Nirangistan* and the *Śrautasūtras*, the *Vat-dievo-dat* and the *Dharma and Gṛhya sūtras* and the *Nighaṇṭu* and the *Frahang-i-oim*. The *Upaniṣads* and the literature that evolved from them however, have very few Iranian cognates. The only Iranian texts that qualify for this genre of literature are the *Aogemadaeca* and the *Hadhokht Nask*, and even these express a fairly limited and primitive philosophical excursion. This sudden divergence in tradition between the Indic and Iranian branches in the *Upaniṣadic* stratum and its derivatives could have potentially arisen as a result of the unique Zarathustrian transformation of Iranian religion. Depending on the model this transformation, might have either blocked the Iranians from developing further along the lines in which the Hindus and the Greeks developed, or it might excluded them from participating in the flow ideas. It is also possible that the subsequent assaults faced by the Iranians destroyed all evidence for their developing a system similar to the Indo-Greek one. However, this theory would require an unusual preservational bias, suggesting that it is unlikely.

Summing up we present the following scenario: 1) The early Indo-European world already had the raw material for most of the concepts seen in the proto-science of the Indo-Greek world. These were vertically inherited by both the Greeks and the Hindus from their common ancestor. These ancestral motifs were presented in their original form and developed further throughout the core *Samhitā* period by the Indo-Aryans. 2) Late Vedic (*Upaniṣadic*) period and the following Post-Vedic period in India saw a tremendous synthesis and systematization of the ancestral motifs through the correlative process [2]: textual reconciliation and subversion to introduce new concepts by using the old

analogies and imagery. In the Hindu texts we see this entire process in 5 great strata: a) The ancestral Samhitā texts b) The Brāhmaṇa texts c) Upaniṣads d) The early Post-Vedic synthetic texts like the BhS and related inserts in the Itihāsa and e) The foundational texts of the 6 Darśanas. 3) In Greece we see the sudden local emergence of material corresponding to stratum-d of the Hindu works. Hence, we suggest that Greeks probably got a jump start into this stage due to relatively detailed templates for the correlative process diffusing into their world from India. They applied these templates to the similar ancestral material they shared with the Hindus and arrived at parallel constructs where the lateral constructs and horizontal influences where inextricably merged. Iran, probably due to Zarathushtrian transformation, minimally participated in the process, but may have served as a junction where Indians and Greeks met. In contrast, China, despite its own independent textual history appears to have been part of the process. It acquired similar templates diffusing out of the Hindu world, which was combined with its independent starting textual material (beyond certain obvious Hindu influences). Similar correlative processes acting on this combination resulted in Taoism's constructs, with several general parallels to the Indo-Greek world, but with clear differences in the specific details which were unique to the common Indo-European heritage of the Indic and Greek cultures.

### *Implications for Hindu early science*

It has been commonly stated that Hindus were irrational and myth-oriented, whereas the Greeks, ever since Thales, developed real science and philosophy. However, nothing can be farther from the truth, the Greek and Hindu thinkers followed very similar constructs and had very similar world views. Science in both the systems emerged from the same matrix of ritual and religion. The Greek philosophers were as prone to poetic imagery, mythic language and "Adhyatmic" diversions as their Hindu counterparts. Some believe that the Greeks developed mechanical models of the world from their philosophy but the Hindus did not. Whereas in Greece this process begins abruptly with the Milesian School, in the

Hindu world we see the process proceeding progressively through the 5 strata mentioned above. The Milesian astronomy can be favorably compared with the early Itihāsa astronomy, where similar mechanical models emerge. They develop in complexity through the Paurāṇic successors and finally culminate in Āryabhaṭa. So the role of the text like the BhS should be considered similar to the role of the Milesian School in the rise of Western intellectual tradition and the process of scientific evolution was essential very similar in the Greek and Hindu worlds.

[1] [The Shape of Ancient Thought \(Mcevilley\)](#)

[2] [Neurobiology, Layered Texts, and Correlative Cosmologies: A Cross-Cultural Framework for Premodern History, \*Bulletin of the Museum of Far Eastern Antiquities\* 72 \(2000 \[2002\]\): 48-89. Steve Farmer, John B. Henderson, and Michael Witzel](#)

“अङ्गिरसो नः पितरो नवग्वा अथर्वाणो भृगवः सोम्यासः |  
तेषां वयं सुमतौ यज्ञियानामपि भद्रे सौमनसेस्याम ||”

*Our ancestors are the Aṅgirasas, the Navagvas, and the Bhrgus, the Atharvans who drank the Soma. May these, the gracious sacrificers look on us with favour, may we enjoy their good minds.*