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Pūrṇam

A Journal of Indian Knowledge Systems

(Website: <https://purnam.vercel.app>, <https://purnam.co.in>)

Portraying the attempts of scholars and scientists.....

..... to understand the contributions of Bharatiya Heritage -n- SAINTists™

Pūrṇam

Vol. 2

No. 1

January - June 2026

ISSN: 3049-3587 (Print)



Published Jointly by

RAJIV DIXIT VICHARA VEDIKE

&

BHARAT VIKAS SANGAM

पूर्णमदः पूर्णमिदं पूर्णात् पूर्णमुदच्यते ।
पूर्णस्य पूर्णमादाय पूर्णमेवावशिष्यते ॥

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About the Journal

Pūrṇam is a peer reviewed, diamond access, multi-disciplinary, multi-lingual Journal on “Indian Knowledge Systems” with the following key features:

Title	Pūrṇam
Year of Start	2025
Periodicity	Two issues per year
Subject:	Multidisciplinary Subjects
Language/s	Multiple Languages (English, Kannada, Hindi, Tamil, Telugu, Sanskrit and Assamese)
Format of publication	Print

Vision and Mission

- **Vision:** For a better world through “*Vasudaiva kutumbakam*”
- **Mission:** Promoting Indian Knowledge Systems by facilitating food for thought and motivation for proactive action

Objectives

- To publish papers on the contribution of Indian Knowledge Systems to the society.
- To provide publication opportunity to organizers conducting conferences on topics related to Indian Knowledge Systems.
- To bring the grass root level contributions to limelight by supporting their work through free professional writing assistance.
- To support the so called ‘unorganized category’ of individuals/groups, but in reality are learned / knowledgeable personalities; to publish their work.

Aim and scope

The journal aims at promoting and portraying the wide scope of Indian Knowledge Systems in various sectors towards the global-sustainable peace, progress and prosperity.

The journal accepts papers on the contribution of Indian Knowledge Systems to society in the following areas, but not limited to only these IKS areas:

- Social sciences including ethics, education and value system, skills-n-talents, sustainability management, law and administration, home science, family system and society.
- Engineering & technological sciences including indigenization and innovations
- Social and political systems including messages from economics in ancient India
- Rural development, rural economy, rural technologies and *Bharatiya arthashastra*
- Health sciences including AYUSH, naturopathy, complementary and integrated systems of medicines, ethno pharmacology and health sciences
- *Ganitha*, *Jyothisha* and *Jyothishya shastra*
- Ethno sciences and technologies
- Philosophy, Spiritual, Vedic, Bhakti, *Janapada* and *Vachana* sciences
- Environment, Hygiene and Nature
- Sustainable agricultural sciences supporting chemical-free, GM-free agriculture
- History, Archeology, Astronomy and Travel
- Language, Literature, Folk Sciences, Art, Culture and Architecture
- IKS based solutions for modern day challenges

Journal contents / Types of papers:

- Editorial
- Letters to Editor
- Invited papers
- Original research papers
- Research based travelogues, reports & case studies
- Review papers
- Research questions
- Recommendations, Reviews & Opinions

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Note: "The ideas expressed by the authors are their own and the Editorial Board does not have any say in this"

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Editorial

A Gurukula's New Complex of Scientific Instruments; Reinventing Jantar Mantar

I had recently, unexpectedly been to Mysore's Bhārati Yoga Dhāma to attend a book release function, of a book on Suryanamaskar. As I was on the way to the yoga dhāma, considering the name of the book, and the name of the institute I thought it was a yoga center. But as I visited the place I understood it was not just that but an amazing place, a gurukul with children getting specialized in astronomy. These children in the age group of 13-20 have represented themselves in various national and international conferences on astronomy and have presented papers and won laurels to the gurukul. By the way, added to the book release program was felicitation to the children of the gurukula who won awards in a recent conference at Ujjain on astronomy.

That was not all, more important thing that amazed me in the gurukul was the students' attempt to reproduce Jantar Mantar at the 17 acres campus of the yoga dhāma. When I say reproduce, it is not mere reproduction, since merely reproducing does not work since the astronomical parameter reflected in the scientific instrument are not the same. The instruments and the specifications are to be recalculated to suit Mysore. To be more precise, it is the exact location at which the specific instrument is built within the campus of Bhārati Yoga Dhāma. Thus, the very thought, and the attempt to build itself is amazing.

I did not want to miss saying this in Pūrṇam, which is dedicated to portray such things. So, I contacted one of my friends in Mysore, an Engineer and a software professional to visit the place and write a story on the attempt. The same was presented, which was reviewed, rewritten and published in this issue of Pūrṇam. I am sure, the readers will be excited to know about the attempt to reinvent Jantar Mantar, and nourish the center.

In the meantime, as the new one is being built, it is worth appealing here, that the historic JMs in North India be maintained well, protected, kept away from being defaced by (irresponsible) visitors, banned to be a venue for conducting protests (as in case of Delhi's JM). In this context I would like to share one more thing. As the issue was being prepared, I took a draft printout, and I casually give to a colleague of mine, and showing the cover page, I asked him "Do you know Jantar Mantar?". The unexpected answer from an Engineering faculty is that, "Oh! that place in Delhi, where strikes happen!"



Further, this issue has several papers worth requiring the attention of professionals across the globe. One specific paper to mention about publishing "Research Questions", about toxicology highlighting scope for huge potential research. "Research Questions" are perhaps an unique feature of Pūrṇam

Although the issue was released a bit later, the issues is dated 21st June; which is globally celebrated as the International Day of Yoga, which is yet another contribution of Bharat towards sustainable global peace, progress and prosperity.

Pūrṇam is now listed in the International portal of ISSN; the entry of which can be found through the link, <https://portal.issn.org/resource/ISSN/3049-3587>

In service of Profession, and Humanity at large.....

Sarvae bhavantu sukhinaha
(May all beings be happy)

-Editor

21st June 2026, International Day of Yoga

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Patrons' Research

Homa and Yagna - Being Led by Agni

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Abstract

This paper explores the multi-dimensional concept of Agni and its central role in the ancient yet enduring sacred rituals of Homa and Yagna. Tracing a continuity from the Vedic period to the present day, the study examines the inseparable ties between Vedic mantras and ritualistic fire. Agni is presented here not merely as physical fire, but as the "activation energy" required to trigger transformative cause-and-effect chains across the three domains of existence: the physical (Adhyatmika), the environmental (AdiBhautika), and the subtle (AdiDaivika).

The paper highlights the mechanics of Homa, the act of invoking and feeding the Daivagni (elemental fire) with Havis (offerings) to influence the Panchabhuta (five primordial elements). Beyond ritualism, the study highlights the scientific applications of Homa smoke, including its potential for pollution control, ozone layer regeneration, crop fortification, and cloud seeding. Furthermore, it expands on the concept of Yagna as a universal principle of sacrifice and harmony, encompassing five essential duties (Brahma, Deva, Pitr, Bhuta, and Manushya Yagnas) that sustain the cosmic and social order. By bridging ancient Bhāratīya ethos with modern scientific perspectives, this paper demonstrates how these traditional practices foster environmental sustainability and a culture of gratitude and regulated prosperity.

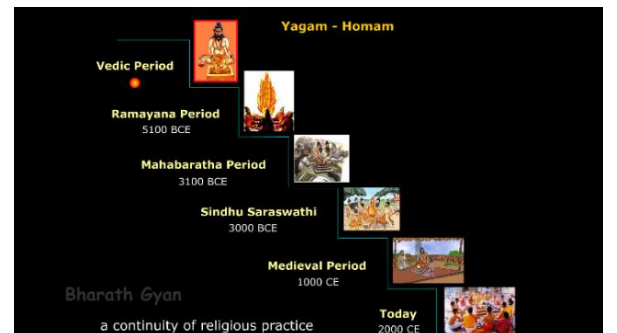
Keywords: Agni, Homa, Yagna, Activation Energy, Panchabhuta, Environmental Sustainability, Vedic Rituals, Sankalpa.

The Homa Trail - A Long Trail

Indian literature, legends, tales, memory are all filled with narrations about various Homa or Yagna being performed by different personages across different time windows.

This trail starts all the way back from the Vedic period and runs along until present.

When we say Vedic period, it denotes the undateable time period when the Veda were composed by the



various Rishi and were later compiled and recompiled many number of times, until its latest recompilation by Rishi Krishna Dwaipayana, traceable to 3141 to 3129 BCE.

Subsequently, in the last 5100 years, the Veda have been continuously put to use in Homa, Yagna. They have not been recompiled.

The ties between the Veda and Homa are inseparable. They go intricately together. While Veda can be recited on their own, a Homa is incomplete without the rendering of the Veda Mantra.

Homa And Agni

A typical Homa is often depicted as a ritual with Agni at the centre and certain chosen offerings made to the Agni. The Veda is replete with invocation and reverence to Agni.



Why has the Bharata civilization given so much importance to Agni and the act of Homa and Yagna?

To be able to fathom this, we will first need to understand

- what Agni actually is
- what do Homa and Yagna stand for and
- the role Agni therefore plays in a Homa.

Agni – The First Invention

Atharvan

“The Creation of fire at will” is hailed by modern science as the first invention of mankind. While science does not have a name for this inventor, the Veda name him as Atharvan.

The credit for being the first to produce fire at will is attributed in the Veda itself to Rishi Atharvan who is described as having produced fire by rubbing sticks.

Angirasa

The Rig Veda and Atharva Veda further contain hymns to Agni by Rishi Angirasa, one of the exalted 7 Rishi, the SaptaRishi.

During vedic rituals, the sacred fire is generated afresh through friction fire created using two wooden sticks called *arani*. Such a process of kindling “a new fire” is called "churning of fire", *Agni Manthana* or *Arani Manthana*. This technique is attributed to the Veda Rishi Angirasa and he is revered for having first mastered it and having revealed it to all through the Veda.

Agni, The Fire Element

In Indian thought, the sacred fire, Agni or the fire element in manifestation, is regarded as a messenger between mankind and the Divinities, Deva. This role of Agni comes from the fact that Agni as Fire, reduces and releases everything which is physical, back into its 5 elemental forms namely that of

1. Akasha - Space,
2. Vayu - Air,
3. Agni – Fire/Heat/Light,
4. Apah - Water and
5. Prthvi – Earth.

These elemental forms in Cosmos have been depicted and venerated in the form of the Deva, the scientific aspects in Cosmic Nature, which are Divine, as they are the intrinsic aspects of manifestation. The word *Deva* comes from the root *Div*, which is also the root for Divine.

Every manifested entity in this Cosmos is made of these 5 elements in varying proportions.

Agni is not limited to the fire that burns things as we see and know it.

Agni – The Messenger, Who Leads

What does Agni lead?

Agni comes from the root *Ag* meaning to lead, show the way, be in front, at the tip - *Agrani*.

Agni is referred to as a messenger who leads the way to the Gods / Deva.

The Deva are symbolic representation of the Divine Tattva identifiable in manifestation.

What is a Tattva?

Tattva can be understood as the real or true principle at work, as the essence or substance of anything, as the basic property of phenomena.

The Deva and other Divinities in the Bharata Pantheon are fundamentally *Tattva*, that have been depicted symbolically in human and zoomorphic forms, to convey what they represent in an integral manner in the overall Creation, Existence, Evolution and Functioning of the Cosmos.

Given this understanding of the Divinities / Divine *Tattva*, it naturally leads us to an understanding that these Divinities are causes from which stem various effects. These effects in turn, act as causes and lead to a chain of causes and effects which Create and then keep the Cosmos sustained and existing.

Such cause and effect chains also lead to transformations and evolution. This is what makes the Cosmos “ever changing, *Anitya*”, while the original cause remains “never changing, *Nitya*”.

Agni – The Activation Energy

Let us now shift our study to a Chemical reaction or reaction between any 2 stable substances.

Some form of activation energy is required, typically in the form of heat, to push these 2 substances initially into a state where, they seek each other out and start reacting. The reaction will then produce energy in the form of heat, light, fire etc. which then propels these substances to become more unstable and react further and further in a sequential manner.

In chemistry, heat acts as the activation energy—the initial push needed to break chemical bonds that will render substances unstable and vulnerable to reactions. Once the reaction starts, it produces its own heat, making the reaction progressive and self-sustaining.

Ofcourse, in most cases, all this happens so quickly that we do not see these happening step by step. We see flame, light and feel the heat being dissipated all at once and at the end, we see the final end product of the reaction or the transformation.

The initial push, the heat at start, is called the Activation Energy in Chemistry.

The activation energy in the form of heat which caused and kept the entire chain of events sustained, can be said to be the one that led the way for this chain of events in a reaction – an Agni. For, *Agni* comes from the root *Ag* meaning to lead, show the way, be in front, at the tip.

This Agni, the leader, led the chain of events and thus enabled the Divine *Tattva* present in each of the substances to function as per their inherent nature, their Dharma.

Agni, thus acts as the messenger for the Divine *Tattva*, as it provides the *Tattva* with the necessary energy, impetus to do their work.

Thus, Agni is not limited to Fire. It is the activating heat, energy in the form of thermal as well as mental, that drives a series of reactions and events leading to functioning and transformation from one state to another.

Fire is one of the forms in which this Agni manifests and can be seen by Human eye.

3 Domains of Existence and the 3 Agni

Indian thought, from across the various Darshana, divides existence into 3 domains:

1. **Adhyatmika** – the domain bound by the physical and subtle form of one’s very own being
2. **AdiBhautika** – the domain which is outside of one’s being, in the form of other living beings, society as well as environment around, with which, one can interact, relate, influence and be influenced by
3. **AdiDaivika** – the domain beyond AdiBhautika, which works in ways that cannot be analyzed, understood, controlled or predicted.

All these 3 domains are known to cause a chain of effects on each and every entity.

All these 3 domains are also in turn, subject to a chain of cause and effect that affect their own existence, in their own respective domains.

All these 3 domains are known to cause a chain of effects on each other too.

The agents that trigger, activate and lead such chains of cause and effect to fruition, can be looked at, as Agni, the one that leads from the front.

We thus, have an Agni within every domain, which is leading the existence and evolution of that domain.

As a corollary, each domain can also, in turn, be viewed as a “being” in itself which is sustained by that Agni within it. In that, each of these Agni works

on the elements present within that being and produces results and transformations accordingly.

Seen from the perspective of humans, the 3 types of Agni can be classified as:

Jatharagni – the Agni within the human being. *Jathara* means “within”. It comes from the notion of belly and womb to denote “inside”, as a human being is born from within a womb. *Ja* means to be born. This is typically called the digestive fire, which consumes whatever is offered in the form of physical food and causes the body and mind to be, to grow and to function as it ought to.

Daivagni – the Agni in the physical realm, domain outside our body – the Adibhautika. It is called Daivagni as this is a realm that collectively is made of the 5 primordial elements, the Panchabhuta and the various Tattva, each symbolically represented as a Deva, Divine aspect in Cosmos. With the power to stimulate, influence and affect us from outside, our well-being depends on this Agni too.

Brahmagni – This is the Agni that leads the realm of the sukshma, subtle and its influence extends beyond the realm of physical, gross existence. It thus, leads the cause and effect chains that transcend lifetimes of physical existence. It is the Agni that makes living beings curious to know, seek knowledge and be conscious. It propels us to explore, discover and expand our knowledge, experience and consciousness to straddle space, times and dimensions. This Agni has the power to affect us and our surrounds far beyond our comprehensible and expectable timespans. It is called Brahmagni, as it concerns itself with a realm that is as subtle and as expansive as consciousness.

The 3 types of feed

The sustenance of the cause and effect chains at each realm, depends on the nature of that realm and the Agni in that realm, which in turn can work, provided it receives appropriate inputs as feed.

The Jatharagni, being within us, works based on what we eat as food, breathe as air, think as thought, speak as words and the actions we do.

While, the Jatharagni works based on what we consume internally, the Daivagni which sustains our surrounds and the beings around, works based on the collective interactions between the elements in Nature and people in society. However, this Daivagni can also be influenced through introduction of appropriate feed into this domain.

The Brahmagni, operating at the realm of subtle consciousness that lies within us and is Universal, also can only accept similar feed. So, while it can influence us, our interaction with this realm is not possible while being outside this realm. It can be possible only by being a part of this realm and that can happen only when one sets aside all other aspects of one's existence – both physical as well as subtle and concentrates on consciousness, consciously. In other words, one gives up one's identity as a feed to this Agni and in turn gets to experience the realm beyond and get transformed into an enlightened being.

The act of offering something as a feed to each of this Agni, to cause a transformation or effect, is called a Homa.

Understanding the act of Homa

A Call, A Feed

The act of Homa is best understood when we look at the word Homa etymologically.

Homa is derived from the syllable *hu/boo* meaning invoking, calling.

Since Jatharagni is within us, it has to be fed through eating or consuming food by ourselves. This is why a prayer in the form of Brahmarpanam is offered before a meal, so that, the food offered to our Jatharagni can lead to a good chain of effects that grows all the way upto the expanse of Consciousness.

Since Brahmagni pervades everywhere and within us, but in a subtle form, it can be fed only by being within its pervasive spread. Yoga and Dhyana are ways to feed this Agni that seeks unification.

As the Daivagni dominates the physical world which is manifested from the Divine Tattva, it is usually Agni in the form of Fire and the food for this Agni is also in the form of tangible substances.

Homa, as an act of invoking, is thus closely associated as an act of offering suitable food to the Daivagni. In the act of Homa, a Deva is invoked and fed via the Daivagni to achieve desired effects.

From *hu/boo* i.e. invoking or calling,

- the act of invoking and calling is called *Abuti* (*ā + buti*) literally meaning with a call
- the food offered is called *Havis*

- the one who is calling, typically a priest who does the calling on behalf of someone else, is *Hotr*.

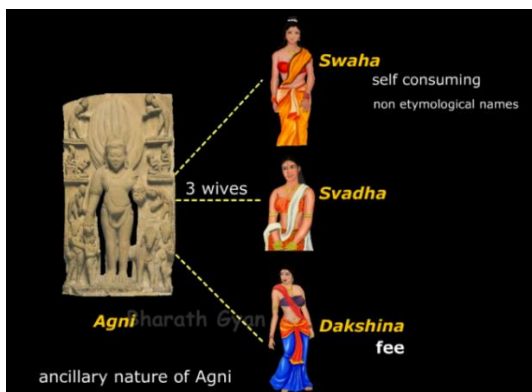
Ahuti thus, is calling and offering to the Daivagni, in the form of Fire, a *Havis* i.e. input food, so that it can reach the physical, manifested realm made of the Divine Tattva and Panchabhuta, present in the form of living beings and the Nature around.

Agni is used here to devour or burn up the *Havis*, vaporize it and infuse its essence into the Panchabhuta in Nature around, including other living beings.

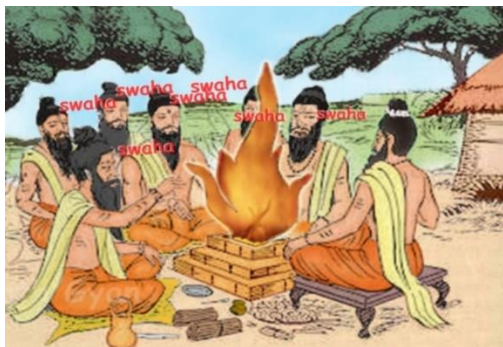
Symbolic Representation Of Agni

Agni is also symbolically depicted as a Divine being with 3 consorts.

- Swaha** - invoker - one as Ahuti, who calls out to rise, giving Agni his Flare to grow and develop into a fierce Flame
- Svadha** - consumer - one who gives Agni His burning heat to savour the food, Havis and reduce it to its essence
- Dakshina** - giver - one who gives Agni His brilliance and radiance to give out / radiate as smoke, the essence extracted from the Dravya (substance), the Havis, the food.



Consorts of Agni



Swaha – Invoking Self

Misunderstanding around Agni and Homa

One is wont to think that in this day, where air pollution is a concern, how can Homa which emits smoke be an act of sustaining the AdiBhautika realm, i.e. Nature and Society?

Countering Harm To Sustain

It is well known that

- Diamond can be cut only by a Diamond
- Thorn can be removed only by another thorn/pin
- Venom can be inactivated only by venom
- Small Pox can be prevented only by using a Vaccine of Cow Pox and
- A forest fire is typically curtailed by another forest fire.

Likewise – it takes smoke to penetrate smoke.

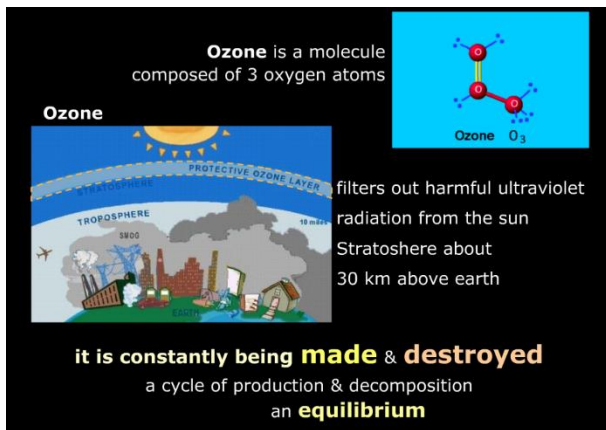
A smoke with good particulate matter can be used to neutralize the harmful particulate matter prevalent in the atmosphere and render it harmless.



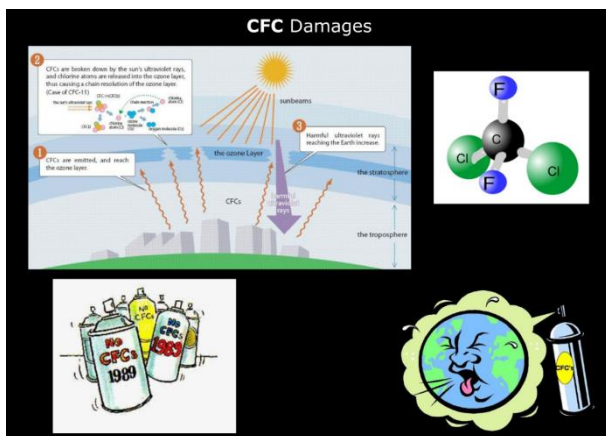
Same Becomes Antidote Too

Reinforcing Shield To Sustain

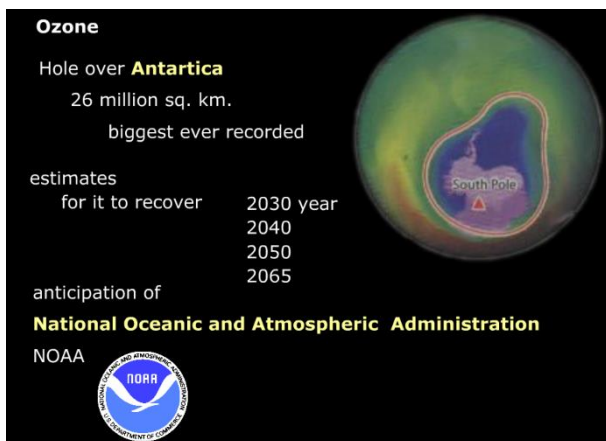
A smokescreen is known for its ability to conceal or insulate. There are researches that have discovered that good ozone is emanated when certain twigs are burnt. Presence of a healthy Stratospheric Ozone layer is required to prevent the harmful UV rays from penetrating to the ground.



Ozone Regeneration



Harm To Ozone Layer By Release Of CFCs By Humans As Part Of Modern Living



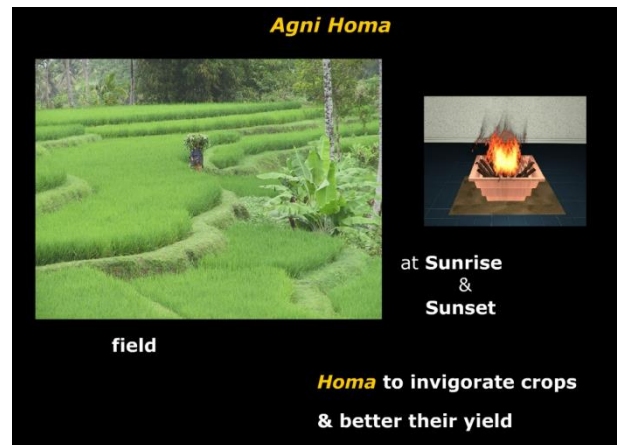
The Ozone Hole

All That The Smoke From A Homa Can Do

Thus, logically, scientifically and practically,

- Only smoke from Homa can penetrate Atmosphere to cleanse it - Pollution Control

- Only fumes from Homa can carry good Ozone to the Atmosphere for enriching Ozone layer - Ozone Regeneration
- Only fumes from Homa can spread over the plants and fortify them with nutrients and protect them from pests - like in sprays of fertilizers and pesticides.
- Only fumes from Homa can reach the lungs of Humans and Animals to carry substances needed to make them healthy and disease free – like in an inhaler
- Only smoke from Homa can carry suitable particulate matter into clouds to cause condensation and rain – like in a cloud seeder.



Homa In Agriculture

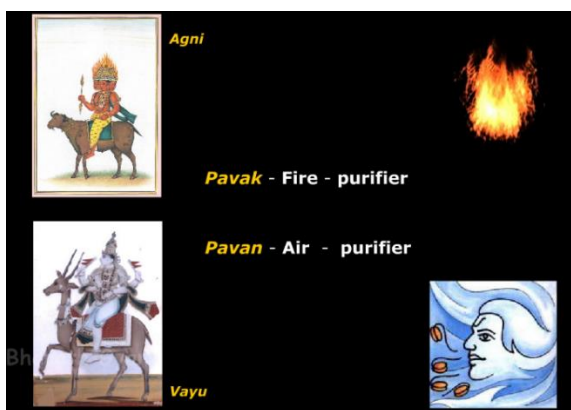
Where does Agni Lead?

It is obvious that the Rishi of yore were in the know of how to keep Nature's protective shields sustained and the environment around us healthy and beneficial, using the very same substances from Nature, as feed or inputs to a chain reaction led by Agni, the leader.

Agni is also called *Pavak/Pāvak* i.e clear and pure due to its fiery, glowing and clear form.

Vayu, wind/air is also called *Pavan/Pāvan* i.e. the purifying one, since it blows the accumulated dust on anything and makes it clear and pure, *Pavak*.

Agni and Vayu go hand-in-hand. For, Vayu is needed to blow away the ashes and make Agni glow from its embers. Vayu is also needed to carry and spread the essence produced by Agni from the Havis, near and far.



Agni-Vayu Combo

Thus, a Homa to Agni, results in the spreading of the effects from the act of Homa.

A Homa thus leads to a *Yagna*.

Understanding Yagna In A Wider Sense

An Etymological Understanding

The root syllable in Sanskrit, that denotes “going”, “moving about”, “spreading” is *Ya*. From this come words such as

- *Yaj* for praise i.e. spreading good word about someone/something good
- *Yatra* for going across the spread of the land
- *Yati* for one who has renounced and moves around from place to place spreading knowledge
- *Yan/Yān* for a vehicle that moves or carries people or things around
- *Yantra* for a device, engineered to perform a task to move something from one state to another i.e. achieve a desired result
- *Prayana* for a journey etc.

The word *Yagna* / *Yajna* comes from the root word *Yaj* meaning singing praise, revering, adulating, worshipping. From this comes *Yajaman* for one who is worthy of all this, as a Lord, for having mastered something.

While western translations have limited a Yagna to a ritual act of sacrifice, Yagna has a much “wider” and “expansive” implication.

The etymological meaning of Yagna has been explained by scholars as having 3 facets:

"देवपूजा सङ्गतिकरण दानेषु"

Devapuja sangatikarana daneshu

1. *Devapuja* – worship of the Divine
2. *Sangatikarana* – unifying, harmonizing
3. *Daneshu* – offering, donating

Functional and Fundamental Understanding

Let us look at the 3 aspects of Yagna – worship, unifying and offering.

1. The worship aspect in a Yagna comes from the root *Yaj* itself of singing praise, stuti.
2. Unification or harmonization can be seen from 2 perspectives:
 - a. **Getting concentrated into One** - It can be seen as the “One”, pulling everything to merge into it as just that single One or
 - b. **Pervading as One** - It can be seen as that “One” thing, extending and spreading to encompass everything else and make everything the same as itself and One.
3. When it comes to *Daneshu* or giving, there are again 3 further aspects to giving:
 - a. **Offering**, which stems from a sense of dedication such as "I dedicate this."
 - b. **Sacrifice**, which stems from a sense of selflessness, effort, service and deprivation, wherein "I willingly give this at the cost of that, so that something else, higher may arise."
 - c. **Giving up**, which stems from a sense of renouncing, with surrender and detachment too, wherein, "I no longer shall want it or stay attached to it."

Thus, in a Yagna, the act of giving may take any of these 3 moods and modes of giving, to result in a harmonized state where the revered idea, purpose or goal for which the Yagna was started, spreads and encompasses all into the same transformed state.

Contrasting Yoga and Yaga / Yagna

Thus, while Yoga has the notion of that which causes unification through concentration, Yagna / Yaga from *Ya*, has the notion of “that which moves and spreads around, encompassing All into the One” and thus causes the unifying or harmonizing to happen.

One is inward and the other is outward.

The Widespread, Unabating Acts of Yagna

Indian epics and legends are replete with stories and instances of many Yagna conducted under the aegis of various Kings or Rishi to unite smaller factions into a larger unit, with one common goal, aim, objective, thought, leadership etc.

What is interesting is that the act of performing a Yagna is not restricted to Kings and Rishi alone.

While Homa is an act of invoking the Agni and a Divinity to make an offering to them, in order to achieve a transformation, Yagna also takes the form of an act to achieve a transformation. However, in a Yagna, one offers oneself too, for a transformation to happen. Homa thus, is one aspect of a Yagna.

There is Yagna continuously happening in the Universe. At each level, each Yagna is a sacrifice, i.e. dedication of something or self, to achieve a desired goal. The Universe exists because of Yagna happening everywhere, at all times.

- It is a Yagna when remnants from a previous cycle of Creation offer themselves to go through a process of churn called Panchikaranam, which then results in a new cycle of Creation
- It is a Yagna when water offers itself to the heat of the sun, to become vapour and clouds and come down again as a shower of rain
- It is a Yagna when seeds offer themselves and crack their shell to go through the process of germination and become a new plant that can bear more grain
- It is a Yagna when grains offer themselves to be consumed by mankind and animals, so that they in turn can grow and bear their offsprings
- It is a Yagna when a human offers himself/herself to go through a process of control and conditioning so that a civilization may grow and survive

- It is a Yagna when even Time offers itself to be consumed, so that Age / Elapse time can grow and increase until the point when there is no more Time left to be consumed. The Universe reaches its maximum Age then and dissolves back into its pre-existing state.

Yagna is thus, the base for the cause-effect chain, *parinama* cycle “going on”, moving forward continuously. It is the selfless act of Prakriti Herself, to evolve all the way down, to every being in Creation.

Such a never-ending, cause-effect chain is therefore called a *Yagna*, as it keeps going on, moving on, never stopping as suggested by the root syllable *Ya*. It is a flow that gets put into motion, *Ya*, initially by the Supreme Consciousness, *Gna/Jna* and continues to happen on its own thereon.

Mankind's Role In Yagna

While the Universe is continuously in a Yagna mode and most Yagna in the Universe happen on their own, mankind endowed with power to think and act, also has the propensity to create good or bad influences on the self balancing cycle of Yagna in Nature. Hence man, besides living in harmony with Nature, is also duty bound to manually perform Yagna additionally, to ensure balance at different levels and sustain the ecosystem from self to the cosmos.

These form Man's debts (*Rn*) to existence and form a set of Yagna that he has to engage in, in order to service these debts.

- **Brahma Yagna** – acts that make mankind seek and experience the realm of all pervading Consciousness and True Knowledge, by offering and surrender of identity/ Ego – a *Samarpan* through *Gnana*, *Bhakti* or *Seva*
- **Deva Yagna** – acts of regulation to generate equanimity and to bring him in harmony with the forces of the Cosmos that operate beyond his control and perception and produce comfortable and uncomfortable effects – a *Samyogam* through Yoga and Dhyana
- **Pitr Yagna** – acts of man done to keep the lineage, customs, traditions and gene pool of ancestry alive, by remembering the same across

generations and putting them into continued practice – a *Tarpan*

- **Bhuta Yagna** – acts of offering done by mankind in the form of Homa to keep Nature and Society sustained, as *Arpan*.
- **Manushya Yagna** – acts done to keep self and fellow beings in a state of wellbeing by following recommended routines, habits and good practices – the *Acharan*.

Thus, while Homa has a connotation of kindling a new fire for invoking Agni and making offerings of suitable Havis to it, Yagna can include an act of Homa as well as other acts where there is no visible Fire in the act, but the act of offering is done as part of a long sustaining chain, driven by the ever expanding Brahmāgni that leads the process of Creation, Evolution and Dissolution on a much grander scale.

Water/ Jala in Japa Homa

Just as Agni burns, absorbs the ingredients in the Havis given with Ahuti and spreads them all around for goodness and makes the place around *Pavan* (pure), Jala too absorbs the goodness / vibes in words, thoughts and intentions and changing its crystalline form, takes it and spreads it around, wherever it is sprinkled or poured, to make the place pure, *Pavan*.

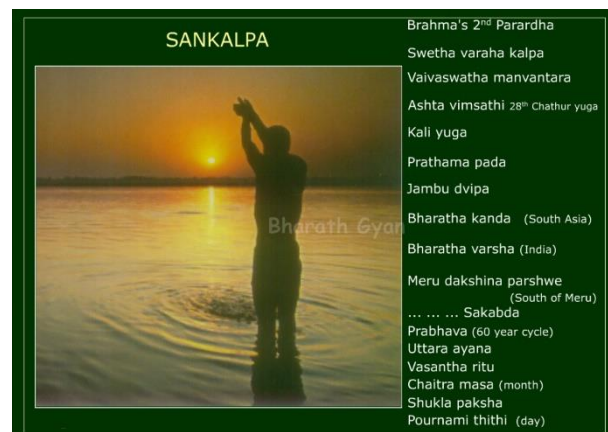
This is why, water after Japa is used to purify places – *pavamanam, punyojanam*.

Making a Yagna work

Time for a Yagna

A Yagna starts with a *Sankalpa*.

Sankalpa is expressed orally at the start of a *Yagna* with a registering of the *Yagna* in the Cosmic Space-Time continuum, with details such as the intention, its performer, the place and the date and time of its performance, spanning all the way from start of Creation to current time and location.



Performing Sankalpa

The word *Sankalpa* literally means “good intention”, “act to cause a good happening”. When the intention is expressed orally along with all these detailed components of Time, it becomes a record of passage of Time.

Sankalpa is also done at the transition of different timezones during a day, with the good intention, prayer that the Cosmos and Time can continue to evolve as it ought to.

Sankalpa, thus has been a continuously updated, oral, astral, geo-positioning calendar of the Bharata civilization from across millennia.

The Timeless Indian Ethos of Sacrificing

The Bharata civilization has been prosperous ever since the times the Veda were composed and when they were last recompiled 5100 years ago too. Too much prosperity and riches also run a risk as they can lead to decadence setting into the civilization too.

India has therefore kept its prosperity and flourish sustained, as well as its use regulated, by creating a sense of indebtedness, gratitude and sacrifice among the people. Every one in this civilization repaid the debts of the civilization as a whole, to the various forces of Existence that has kept the civilization sustained and flourishing. Each one sacrificed in their own way.

Some, sacrificed their physical strength, efforts and time to ensure that the civilization could be fed and had other produce and comforts to lead a healthy and comfortable life. Production was not done for themselves alone.

Some, sacrificed their family and homely comforts so that they can travel far and wide to sell the produce from this civilization and earn various forms of wealth for the civilization. Wealth was earned for themselves alone.

Some, sacrificed their lives in battles so that the civilization – the land, people, their wealth, their food, their practices, knowledge and culture could be protected and all forms of threats to it could be decimated. They did not live for their families alone.

Some, sacrificed their brains, memory, ego and worldly possessions so that, they could connect with the subtle realm of consciousness, to tap and gather deeper, spiritual knowledge as well as provide means for others in the civilization, to connect with Nature, elements and the subtler aspects of existence, beyond the worldly needs too. They led a life of austerity to seek benefits for others.

Thus, people in society sacrificed their fortes, specialties to ensure that both, worldly as well as spiritual needs of their civilization and mankind were met satisfactorily and were sustained.

Each, ensured and helped the others discharge their own set of debts from Brahma Rn to Manushya Rn independently, as well as collectively.

Each sacrificed his mite for the civilization.

Who did not sacrifice then? Who does not sacrifice even today?

Thus, if Agni in a Homa burns and brings about purification of self, people and environs, Yagna spreads its objective around and unifies everyone under the ambit of its objective.

Conclusion

Agni serves as the fundamental "activation energy" that triggers essential cause-and-effect chains across the physical (*Adhyatmika*), environmental (*AdiBhautika*), and subtle (*AdiDaivika*) domains of existence. The ritual of Homa provides a practical mechanism to influence the Panchabhuta (five elements), utilizing the transformative power of fire to address modern ecological challenges such as pollution control, ozone layer regeneration, and agricultural fortification.

Furthermore, the expansive concept of Yagna establishes a universal principle of selfless sacrifice and harmony, where individual actions are dedicated

to sustaining a broader cosmic and social order. By integrating the ancient etymological insights of the Nirukta with modern scientific validation, these practices foster a timeless ethos of indebtedness and gratitude, ensuring a sustainable path for regulated prosperity and collective well-being

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Technical Travellogue / Reinventing IKS

Exploring Jantar Mantar, New South Indian Experiment, Reviving Ancient Indian Knowledge System in Astronomy, Astrophysics, Astrology and Mathematics

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Abstract

This study explores the Background, Objectives and revival of Jantar Mantar, the ancient science of instrumentation to measure time and position of Astral bodies. Traditionally, Jantar Mantar was established in North India at 5 places (Ujjain, Jaipur, Delhi, Kāshi and Mathura). This tradition is now brought to South India at Bhārati Yoga Dhāma, Mysore (BYD, Mysore). The study explores how this experiment to revive the ancient knowledge in South India can help the Indian knowledge System.

Keywords: Jantar Mantar, Astronomy, Astrology, Astrophysics, Mathematics, Jyotishya Shastra, Indian Knowledge System (IKS)

Introduction

Jantar Mantar points to Indian Astronomical observatories built by Maharaja Jaisingh II of Jaipur built at 5 places in North India (Jaipur, Ujjain, Delhi, Banaras and Mathura). They were built as big geometric instrument civil engineering constructions between 1724 and 1735. The instruments constructed here are described in Ancient Indian Astronomy and Astrology texts. The instruments are designed to track the Sun, Moon and Planets. Instruments are aligned using Stars. Instruments give readings to measure Time, calibrate Panchānga/Calendar. Bigger instruments were constructed to improve precision in measured values.

After the colonial takeover of India, support for Indian Astronomy died and Western Calendar and Western Astronomy was imposed. However, the Indian Civilians followed the traditional Panchānga/Indian Calendar. Although there was a huge user base, apart from maintaining the panchānga, no serious work continued. Even to maintain panchānga, Ephemeris, the transcoding table to map a place and associated time corrections to a reference standard place (like Ujjain to map celestial objects) was used. This short cut method destroyed Observation based and Research oriented Jantar-Mantar usage. Shortcut methods use approximations and introduce errors. Hence today's panchānga contain accumulated errors and do not exactly show the true position of celestial objects.

Bhārati Yoga Dhāma has taken the mammoth task of building Jantar-Mantar costing crores of rupees in south India and they are starting to rebuild the ancient traditional method of Astronomy, Astrology based on observations using Jantar-Mantar instruments. The initiative has a noble goal of correcting errors in the Indian traditional calendar/Panchānga, to make it more precise. Elimination of errors in Panchānga should improve Astrology predictions. Improved results should bring back the lost trust in Astrology across the society. Bhārati Yoga Dhāma has a strong opinion that Indian Astrology developed by our Maharshis since Vedic times is based on verifiable data and hence it is a science. They want to establish this point using Jantar-Mantar. If they succeed, it will be a major contribution to the Indian Knowledge System, as Jyotishya/Astronomy is one of the six parts associated with Vedas (Called Vedāngās : Shiksha, Chandas, Vyakarana, Nirukta, Kalpa, Jyotisha).

Revered Sage Nārada has explained the importance of Astrology in texts as follows

*सिद्धान्तसंहिताहोरारूपस्कन्धत्रयात्मकम् ।
वेदस्य निर्मलं चक्षुर्ज्योतिःशास्त्रमनूत्तमम् ॥*

Meaning: Astrology is a great science and is a sacred part of the Vedas. It comprises three Skandās (Chapters). Siddhānta, Samhita and Hora. Siddhānta (Measurement, Calculation and Observation wing). Samhita (Information about everything like planets, animals, rain, building constructions [vāstu] etc.). Hora (phalita, Using planets position in the Zodiac Signs one can tell Bhuta [Past], Bhavishya [Future] and Vartamāna [Present time] of anyone/anything). Bhārati Yoga Dhāma is primarily focussing on Siddhānta.

Just because a few scientists oppose Astrology it does not mean that in this scientific age Astrology is a farce. This verdict has been given by the Supreme Court of India as well. In the 2004 landmark case (P.M. Bhargava Vs. University Grants Commission), the Supreme Court of India ruled that Astrology (Jyotisha) is a discipline requiring the study of celestial bodies, and legally permitted universities to offer courses and degrees in Vedic Astrology. The verdict primarily focused on academic autonomy and policy rather than scientific validity.

Indian constitution calls for a fundamental duty to its citizen through article 51-A(h)

Article 51-A(h): Makes it a duty for every citizen to "develop the scientific temper, humanism and the spirit of inquiry and reform."

Bhārati Yoga Dhāma's efforts are aligned with this objective. They are structurally building an eco-

system as per modern scientific practices to rebuild Astrology. Their comprehensive Trayi Vidya (Yoga, Ayurveda and Astronomy) covers, treats and develops 3 Indian knowledge systems as scientific streams.

Methods

This paper is a study report. I visited Bhārati Yoga Dhāma, interviewed the different stake holders and documented their views, objectives, Journey & what has been achieved so far etc. The aim of the paper is to increase visibility among academic community and bring interested person/institutions to join hands and derive useful knowledge/research out of it.

I visited Bhārati Yoga Dhāma on Friday, 5th June 2026. Sri Purushottam Joshi was assigned to take us on a guided tour. Jantar Mantar in Bhārati Yoga Dhāma is a reserved space of about 5 acres. Several instruments have been constructed and are now open to the public for visit. The site is not complete, as they need funding support to complete the planned infrastructure.

The details of the project and various issues discussed during the visit is reported here.

Motivation and Goals behind the project

Motivation is to bring North Indian bound Jantar-Mantar to South India and make the facility available to scholars, researchers, teachers, practitioners, students and general public. The idea is to revive the Ancient Indian knowledge of observation-based astronomy and astrology. Do further research and develop the stream.

Stated objectives are as follows.

Indian cultural rituals and daily practices are best performed by observing *Muhurta* (Right timing) in order to reap the greatest benefit.

Bhārati Yoga Dhāma's current research to calculate *Thithi* (lunar day) will help establish a definitive Panchāngam (calendar and almanac) using these unique methods of observation and calculation.

- Audio-video presentations designed to educate the public about the relationship between astrology and the Indian way of life.
- Will conduct objective assessments of ancient and modern astrophysics using astronomical observations and calculations.
- Access to ancient astrological texts and research for Gurukula students, international researchers

and global scholars interested in planetary influences on human life and the world.

- Includes a museum and theatre drawing thousands of public visitors to this important astronomical complex.
- Aims to bring uniformity to the Panchāngas (Indian calendars) through rigorous scientific observations.
- Enlighten modern society on the important insights of ancient astrologers like Aryabhata, Bhaskarāchārya, and Varāhamihira, whose contribution to astrology and astronomy have been long forgotten.

JM at Mysuru is the brainchild of Dr. Shankaranarayana Jois (Fig.1).



Fig. 1. Acharya Shakarnarayana Jois at Jantar Mantar site at Bhāratī Yoga Dhāma, Mysore, India.



Fig. 2. Grand Statue of Ācharya Varaha Mihira at Bhāratī Yoga Dhāma, Mysore, India.

Instruments implemented

- **Shanku Yantra** - Measure Dik, Desha and Kāla.
- **Dhruva Darshana Bitti** - Measure Dhruva, The Pole Star
- **Yantra Sāmrat** - Measure local Solar time and Declination
- **Nādi Valaya** - Track Sun as per Uttarāyana and Dakshināyana, Measure time
- **Kapāla Yantra** - Simulate and track Sun in celestial space
- **Krāntivrutta Yantra** - Measure the celestial latitude and longitude of the Sun, Planets, and Zodiac constellations
- **Rama Yantra** - Measure position of any celestial object.
- **Bitthi Yantra** - Measure Celestial Bodies Altitude, when it crosses the Meridian

The details of the same are presented here.

Shanku Yantra

Shanku in astrology refers to the needle. Shanku Yantra is one of the oldest astronomical instruments in India. Described in ancient texts like the Surya Siddhānta and works by Aryabhata and Varāhamihira. It is the foundational tool of traditional Indian astronomy and Panchānga. It is simply a vertical gnomon (rod) on a flat, horizontal surface. By measuring the shadow's length and direction, ancient astronomers accurately determined cardinal directions, local time, and seasonal changes (*Dikku, Desha, Kala*).



Fig. 3. Shanku Yantra, Bhāratī Yoga Dhāma, Mysore, India



Fig. 4. Shanku Yantra, Jantar-Mantar, Ujjain, India.

How it works

- **Tracking Time:** When sunlight hits the vertical rod, it casts a shadow on the platform. The shortest shadow marks local noon, pinpointing the North-South line.
- **Tracking Seasons:** Shadow lengths shift throughout the year. The shadow is longest during the winter solstice and shortest during the summer solstice.
- **Calculating Latitude:** If the height of the rod is known and the shadow's length is measured, basic trigonometry is used to find the latitude of a location.

Dhruva Darshana Bitthi Yantra

“Dhruv Darshana Bitthi” is an ancient astronomical instrument designed to determine the exact position of the Pole Star (Dhruva Tāra) at night and measure the declination of celestial bodies.

It is a trapezoidal stone masonry structure inclined at an angle equal to the local latitude. The sloping upper edge is perfectly aligned to point toward the celestial North Pole (the Pole Star). A smaller handheld/portable metal plate called the “Dhruvabhrama Yantra” is also mentioned, which was used for night time navigation and calculating star positions, while on travel.

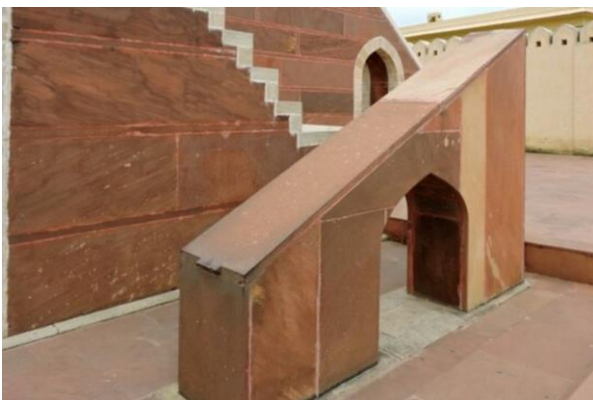


Fig. 5. Dhruva Darshana Bitthi, Jantar-Mantar, Jaipur, India.

How it works

- **Locating Pole Star:** Looking at the direction of the arrow, marked at the bottom during night, one can locate the pole star. Historically, it served as a compass, enabling ancient astronomers to track the positions of the 12 zodiac signs and gauge the time of night by observing the sky.

Yantra Samrāt

The Yantra Samrāt is a monumental equinoctial (=aligned to equinox) sundial that measures local solar time, celestial coordinates, and sun declination. It is a massive structure and main instrument of the Jantar Mantar complex. Bigger structure means more precise measurement of time.

Yantra Samrat at Jaipur is the biggest among the sun dials. The instrument has readings to the precision of 2 seconds.



Fig. 6 Yantra Samrat, Bhārati Yoga Dhāma, Mysore, India.

How it works

- **Measure Local Time:** When sunlight hits the central triangular structure, it casts a shadow on the circular construction. The circular structure is the dial with scale, to read time. The shadow falls from Sunrise to noon on one side. Shadow moves to the other half between noon to Sunset. The instrument gives time between Sunrise and Sunset.

Nādi Valaya

The Nādivalya Yantra is an ancient equinoctial sundial used in Indian astronomy to measure local solar time and track the Sun's movement across the equator. It features two circular, flat dial plates—one facing north and the other facing south—that are perfectly parallel to the Earth's equator. Metal rods (Shanku's) extend perpendicularly from the center of each dial, pointing directly toward the celestial poles.



Fig. 7 Nādivalaya Yantra, Bhārati Yoga Dhāma, Mysore, India.

How it works

- Track Sun Time: When sunlight hits the vertical rod (Shanku, the needle), it casts a shadow on the circular dial.
- The two dial plates are utilized at different times of the year depending on the Sun's hemisphere
- Equinoxes: On the exact dates of the equinox, the Sun's rays are parallel to the equator, illuminating both faces simultaneously
- Summer (March 21 to September 22): The Sun is in the northern hemisphere, illuminating the northern dial face
- Winter (September 23 to March 20): The Sun is in the southern hemisphere, illuminating the southern dial face.

Kapāla Yantra

Kapāl yantra simulates celestial conditions. It consists of two complementary, hemispherical concave marble bowls built into the ground on an east-west axis. The inner surfaces of the bowls are engraved with intricate celestial coordinates. The primary purpose is to track sun and transform graphically the horizon system of coordinates into the equatorial system



Fig. 8 Kapāla Yantra, Bhārati Yoga Dhāma, Mysore, India.

How it works

- Simulate sun in celestial space: The western bowl measures the sun's position on the local horizon, while the eastern bowl graphically transforms this data into equatorial systems (to map the stars)
- It operates as a highly advanced sundial and coordinate converter
- Unlike instruments that only map a single celestial view, it is specially designed to transform coordinates directly from one system to another.

Krāntivrutta Yantra

Krāntivrutta means Ecliptic. Ecliptic refers to the imaginary, circular path in the sky that the sun appears to follow over the course of a year when viewed from Earth. Because Earth orbits the sun on a tilted axis, the sun's path (the ecliptic) is tilted at an angle of roughly 23.5° relative to the Earth's equator.

The primary purpose of Krāntivrutta Yantra is to measure the celestial latitude and longitude of the sun, planets, and zodiac constellations.

It consists of two circular metal frames (about the size of a ship's navigation wheel) that rotate on a masonry base. One wheel represents the celestial equator, while the other represents the ecliptic plane of the Earth. The two frames and their base are set at an exact angle of 47° to measure coordinates.



Fig. 9 Krāntivrutta Yantra, Bhārati Yoga Dhāma, Mysore, India.

How it works

- Measure readings in Ecliptic: Unlike simple sundials that measure the sun's position relative to the local horizon, the Kranti Vritta Yantra measures coordinates using the ecliptic system (the plane of the Earth's orbit around the sun).

- An observer looks through the instrument to align its axis with a specific celestial body. Once aligned, the scales engraved directly onto the circles provide immediate readings for the object's Right Ascension and its ecliptic longitude and latitude
- It allows astronomers to directly determine the position of celestial bodies in the ecliptic coordinate system without complex calculations.

Rama Yantra

The Rama Yantra is one of the most unique and innovative instruments. It consists of two identical, open-to-the-sky cylindrical buildings. The floor of each structure is raised to chest height and split into radiating stone sectors, with open spaces between them. One building's stone sectors correspond exactly to the empty gaps of the other. A tall, vertical pillar stands perfectly in the dead centre of each cylinder. The height of the walls and the central pillar are exactly equal to the internal radius of the structure. The walls and stone floor sectors are finely etched with degree markings to measure altitude (vertical angle above the horizon) and azimuth (horizontal compass direction).



Fig. 10 Rāma Yantra, Jantar-Mantar, New Delhi, India.



Fig. 11 Rāma Yantra, Bhāratī Yoga Dhāma Mysore, India.

How it works

- Daytime Observations: The sun's position is recorded by observing exactly where the shadow cast by the tip of the central pillar falls on the calibrated floor or walls
- Night time Observations: An astronomer stands inside the empty gaps of the structure, looks up, and uses a sighting thread tied to the top of the central pillar to align a target star or planet, reading its coordinates directly off the scale.
- Because the buildings are exact spatial opposites, if a celestial body's shadow falls into an empty walking gap in the first structure, the observer simply moves to the second structure to take an uninterrupted reading.

Bhitthi Yantra

Bhitthi Yantra, also called The Daksinottara Bhitthi, is based on the meridian dial of earlier times. It incorporates a quadrant or half-circle inscribed on a north-south wall, with a metal rod at the center. The meridian is an imaginary plane running north-south in line with the earth's axis and extending directly overhead.



Fig. 12 A model of Bhitthi Yantra



Fig. 13 Bhitthi Yantra, Bhāratī Yoga Dhāma, Mysore, India



Fig. 14 Inside view of Bihitthi Yantra, Shastamsha Yantra, Bhāratī Yoga Dhāma, Mysore.

How it works

- At midday, the sun casts a shadow of the rod onto the Semicircular scale, giving the meridian altitude. The instrument may also be used at night to obtain the meridian altitude of other celestial bodies. Although seemingly basic, meridian-altitude measurements can be used to determine other astronomical data such as local latitude and the obliquity of the ecliptic.

Instruments coming up

- **Rāshivalaya Yantra** - The Rāshivalaya Yantra is a set of 12 unique astronomical instruments (sundials). Each Yantra is for a Zodiac symbol. The angle of each instrument (Gnomon angle) is different from each other, because each zodiac sign is located at a different position on the ecliptic. When a particular zodiac sign reaches the local meridian, the instrument of that particular zodiac sign is used to take accurate astronomical measurements for about 2 hours. Primary purpose is to work on Almanacs & Predictions.
- **Jaya Prakāsha Yantra** - This yantra includes two hemispherical bowls like sundials with graded marble slabs. The elevation, azimuth, hour angles and exact position of heavenly bodies are detected using the inverted image of the sky, and the movement of the inverted shadows on the slabs
- **Chakra Yantra** - The Chakra Yantra is a major Astronomical instrument which is mainly used to measure the speed of the Sun, its inclination and celestial coordinates.
- **Gola Yantra** - It is known in the West as the Armillary Sphere, is an ancient astronomical instrument composed of interlocking metal

rings. The device maps the celestial sphere, modelling the equator, ecliptic, meridian, and horizon to track stars and calculate planetary positions. It is a 3D map of the sky. The metal rings represent major celestial pathways, including the Sun's path (the ecliptic) and the constellations of the zodiac. It is primarily used as a teaching aid to understand the geocentric model of the cosmos.

Results and Discussions

The Indian Knowledge System (IKS) is not just theory. It included laboratory experiments. Jantar-Mantar was an observatory and a laboratory. Practitioners built and used a host of scientific equipment to study nature and build knowledge systems. Jantar Mantar at Bhāratī Yoga Dhāma, establishes this important point and provides evidence to prove the Indian Knowledge System is not some random thought process, but a structured knowledge system. Data is collected, analysed, knowledge refined, discoveries and inventions were made, universities were built.

The facility is an important modern experiment to revive and structurally practice ancient astronomy, astrology, astrophysics and associated mathematics as living examples.

Conclusion

The paper primarily discusses technicality of instruments available at the facility and what can be measured from them. What new instruments are being planned?

We hope the paper will increase awareness and visibility on this important experiment being carried out in south India. It brings together Academicians, Researchers, Practitioners, Teachers, Students and General Public interested in the subject. It will help to derive and re-build useful Indian Knowledge System.

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Concept paper

The planet problem and its 'energetic' solution

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Abstract

People who do not believe in astrology commonly blame the astrologers that they do not have common sense by saying, "you people say that sun is a planet, nonsense; sun is a star". Similarly, they also argue about Rahu and Kethu, and say that they have merely exist. Further they also argue that Earth, Uranus and Neptune which are planets do not find place in the birth charts. In such a context the astrologers are normally taken aback.

This paper addresses the conceptual confusion arising from the translation of the Sanskrit term Graha as "planet." While modern astronomy defines planets based on physical matter and orbital dynamics, the Vedic system of Navagraha is rooted in an energetic framework centred on the Earth as a receiver of influence. By comparing spiritualistic (energy-based) Indian thought with materialistic Western models, this study argues that Grahās are "energy-based entities" rather than mere physical masses. We provide textual and scientific evidence for the microcosm-macrocosm relationship and the biological influence of planetary resonances.

Thus, the paper not only cautions astrologers, but any individual from any field for that matter to be careful while using Englishized traditional words in their day to day part of their profession. In this background, the paper also emphasizes change in the astrologers to relook into the approach towards astrology, and calls for more research in this area.

Keywords: Graha, planet, energy, matter, Navagraha, spirituality

Introduction

In modern primary schools, the children are taught in the Geography classes that there are eight planets in the solar system. However, about 3 decades back, in the same Geography classes, the children were taught that there are nine planets in the solar system. The 'Pluto' is no longer in the list of planets. What

happened in just 30 years? Did Pluto vanish? A little thought into this issue gives an eye-opening thought.

That apart, on the other side, in almost all homes, the children are taught about the navagrahas, through a *shloka* (poetic form of representation of knowledge),

¹ Paper writing assistance from scratch to production of Paper was given by Editorial Board Member of Pūrṇam.

नमः सूर्याय चन्द्राय मङ्गलाय बुधाय च ।
गुरुशुक्रशनिभ्यश्च राहवे केतवे नमः ॥

namaḥ sūryāya candrāya maṅgalāya budhāya ca |
guruśukraśanibhyaśca rāhave ketave namaḥa ||

which mentions about the nine *Grahās*. Thus, there are two systems, the planetary system having 9 planets, and the *navagraha* system containing 9 *grahās*. While the two systems are not one and the same; having taken casually, or not giving a thought on, they are considered to be the same. All astrology texts say there are 9 planets.

This has led to the blame on astrologers that they do not have scientific thought; nor they have common sense because astrologers because, they

- consider sun as a planet,
- Rahu and Kethu merely exist, and they are a part of the planets in the birth chart
- Uranus, Neptune and Pluto are not at all considered in the birth chart.

When the non-believers argue on these aspects, the astrologers are taken aback. This paper supports the astrologers and explains what is the actual problem.

The concept

In the above, background we have to relook as to what planets are; and what are *grahās*. To explain this, first let us compare the two systems, viz., the planetary system and the *navagraha* system. Table 1 gives a comparative list of the components of the two systems.

Table 1: Components of the Planetary system and the navagraha system

Planetary system	Navagraha system
Mercury	<i>Budha</i>
Venus	<i>Shukra</i>
Earth	??
Mars	<i>Mangala</i>
Jupiter	<i>Guru</i>
Saturn	<i>Shani</i>
Uranus	??
Neptune	??
Pluto	??

Planetary system	Navagraha system
??	Sun
??	Moon
??	<i>Rahu</i>
??	<i>Kethu</i>

From the table we can make the following observations can be made:

- Sun, Rahu and Kethu are missing in the list of the planetary system.
- Earth, Uranus, Neptune and Pluto are missing in the *navagraha* system.
- Earth is a planet according to the planetary system
- Sun and moon are *grahās* according to the *navagraha* system, and also, added to the list are the Rahu and Kethu.

The difference between, and the basic concepts in the two systems are discussed herewith.

Planets vs. *Grahās*

Planets:

Through simple observation it can be understood that a planet is:

- a physical body (huge matter)
- they revolve around the sun in a plane
- they are under the control of the sun

From the above we can observe and come to an understanding that those bodies which revolve in a plane, and in the control of the sun are called planets. Thus, the concept of planet is from the point of view of matter, and the space in which it revolves. The understanding, about 30 years back was that pluto was a planet. Now pluto is not considered as a planet because it is now understood that pluto is not under the control of the sun. Or, possibly, now it has gone out of the control of the sun.

Further, it is also worth noting that in modern geography, the solar system is recognized as having eight planets. The reclassification of Pluto by the International Astronomical Union (IAU) in 2006 serves as a vital case study for the distinction between physical bodies and *Grahās*. According to IAU Resolution B5, a celestial body is a planet only if it (a) orbits the Sun, (b) assumes a nearly round shape, and

(c) "has cleared the neighbourhood around its orbit". Pluto is classified as a "dwarf planet" because it has not satisfied this third criterion, as its orbit is dictated by the gravity of Neptune. In contrast, the *Navagraha* system remains consistent because its criteria are based on influencing power rather than orbital clearance.

Grahās:

On contrary to the planets which are matter based, the *grahās* are energy based. *Grahās* are those celestial bodies, and their positions which has key influence on the energy of the earth. This influence consequently has effect on the matter and the living organisms on the earth.

Hence, Uranus, Neptune and Pluto, which do not have considerable influence on the energy of the earth are not considered as *grahās*. Also, the very earth itself is not considered as a *graha*. As such, the concept of *graha* is centred around earth, which is the receiver of energy.

Rahu and kethu are considered as *chāyagrahās*. The *chāya* in vedic terminology means shadow. These are basically the alterations in the energy received by the earth due to the shadows caused due to the periods of eclipses.

When the moon intervenes between the earth and the sun, the shadow of the moon falls on the earth. Consequently, the earth loses the energy of the sun. This position is called *surya grabana* (solar eclipse). *Grabana* means the energy eaten on account of shadow. Similarly, when earth comes between the sun and the moon, the shadow of the earth falls on the moon. Consequently, the moon loses energy. Loss of energy to the moon leads to loss of energy to the earth, since the moon cannot give energy to the earth. In these two circumstances the earth loses energy due to shadow. When the earth loses the energy of the sun, the shadow is called *Rāhu*. Similarly, when the earth loses the energy of the moon, it is called *kethu*. Hence *Rāhu* and *kethu* are *chāyā* (shadow) *grahas*.

Etimological definition: Planets and grahas

Further, etymologically, the English word "planet" comes from the Greek *planētēs*, meaning "wanderer". Conversely, the Sanskrit root *graha* means "to seize, to grasp, or to hold". Thus, a *Graha* is defined as an astronomical body that "holds or captures" or plays a significant role in influencing energy, and thus life on Earth.

Planet – n – graha relationship

It can thus be understood that the planetary system and the *navagraha* systems are altogether based on

totally different concepts. However, there is a relationship between the two systems. This relationship is summarized in the table 2.

Table 2: Relationship between the elements of planetary and navagraha systems

Navagraha system	Planetary system
Surya	Energy of the sun
Chandra	Energy of the moon
Mangala	Energy of the mars
Budha	Energy of mercury
Guru	Energy of Jupiter
Shukra	Energy of Venus
Shani	Energy of Saturn
Rahu	Energy as a result of solar eclipse
Ketu	Energy as a result of lunar eclipse

Here, the term energy in simplest language, refers to the influence of the emissions of the celestial body, or the change in state of the energy received by the earth due to relative positions of the celestial bodies; for which Rahu and Ketu are the examples.

Considering Rahu and Ketu, the *chāyagrahās*, Astronomically, they are the mathematical points of intersection of the Ecliptic (the Sun's apparent path) and the Lunar orbital plane. Rahu is the North Lunar node and Ketu is the South Lunar node. They are included as *grahās* because their positions cause eclipses, creating significant alterations in the electromagnetic energy received by the Earth.

Microcosm macrocosm synonym

The relationship between the individual (*Pinda*) and the cosmos (*Brahmānda*) is a cornerstone of classical Indian philosophy. The popular aphorism "*Yathā piṇḍe tathā brahmāṇḍe, yathā brahmāṇḍe tathā piṇḍe*" ("As is the microcosm, so is the macrocosm") is a traditional maxim summarizing ancient Indian philosophy.

Charaka Sambhita (Sharirasthāna, 5.3), states, "*Yāvantah hi loke bhāvaviśeṣaḥ tāvantah puruṣe, yāvantah puruṣe tāvantah loke*" which means, whatever entities exist in the universe, the same exist in the human being; and whatever exists in the human being, exists in the universe.

The theological seed originates in the Purusha Sukta (*Rigveda* 10.90 / *Shukla Yajurveda* 31), which views creation as the manifestation of a single Cosmic Giant (*Purusha*).

The aspect is also available in Goraksha Shatakam composed by Sage Gorakshanath, which maps cosmic geographies (mountains, rivers, stars) to structural parts of the human physical body (*pinda*).

This concept is also about the total interconnectedness between the individual and the universe. It states that the human body (the microcosm) is a miniature replica of the entire cosmos (the macrocosm) Yajurveda states: "*Yathā pinde tathā brāhmande, yathā brahmānde tathā pinde*" (As is the individual, so is the universe). Similarly, the Charaka Samhita affirms: "*Purushyoyam loka sannidab*" (Man is a miniature universe). These texts suggest that the governing eternal laws of the macrocosm are the cause of internal codes and motions in the microcosm.

Thus, *navagrahas* are not just limited to the solar system, but also applicable to the human body. As such human body is the microcosm, and the solar system is the macrocosm. Microcosm, the later part of existence, being the product of the macrocosm. Table 3 gives a continued analogy of the macrocosm and the microcosm with reference to the *navagrahas*, many of which are also well understood and applied by the astrologers.

Table 3: Components and equivalents macrocosm and microcosm

Macrocosm	Microcosm
Sun (Surya)	Ātma
Moon (Chandra)	Manas
Mangala	Agni (heat)
Budha	<i>Buddhi</i>
Guru	Understanding
Shukra	Vision
Shani	Inertia
Rahu	two different states during meditation.
Ketu	

This is yet another important aspect the astrologers should consider during their day to day professional activities. That means, the astrological interpretations should also consider the microcosm equivalents of the *grahas* to understand the effects and has influence on humans.

Scope for research

The planetary interactions influence genetic compositions. The aspect is supported by modern

research into Bioelectromagnetics. Organisms are continuously exposed to natural electromagnetic frequencies, such as the Schumann Resonance (7.83 Hz), which mimics human brainwave patterns. Research shows that "Electromagnetic Energy and Sound Vibration Modulates Gene Expression" and can "affect the flow of ions across cell membranes, potentially altering cellular function and signalling pathways". These natural frequencies regulate biological rhythms, suggesting a mechanism for how celestial "energies" (*Grahās*) interact with human biological systems.

There is quite a lot of scope for research in the area of astrology. The energies of each of the *grahās* have their qualities. The interaction between or combination of these energies gives rise to a resultant energy. The interaction effect of the *grahās* (the energies) in the macrocosm, and the *grahās* (equivalent energies) in the microcosm is worth understanding which requires correlation studies. Also, it is worth researching the effect of the interactions of the *grahās* at the time of birth on the quality of the person. While this is exactly what the astrologers are currently doing, from the net effect point of view. However, this should be approached from mechanism point of view considering things at a subtler level, may be the genetic compositions and vibrations level.

Conclusion:

Planets and *grahās* are altogether two different concepts. Planets are matter based. *Grahās* are energy based. The confusion between the two systems is basically because of the blunder committed in trying to "Englishize" the Indian word *graha*, into planets. Hence planets to be referred to as planets only. Similarly, *grahās* to be referred to as *grahās* only, and never as planets. In astrology we are basically concerned with *grahas* and not the planets. Astrologers should take special care henceforth in replacing the word planet with *graha*. *Grahās* should be considered especially at the microcosm energy-based levels. Also, there is quite a scope for research on the effect of interactions between the energies of the macrocosm and microcosm at subtler levels.

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पूर्णमदः पूर्णमिदं पूर्णात् पूर्णमुदच्यते ।

पूर्णस्य पूर्णमादाय पूर्णमेवावशिष्यते ॥

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Research Questions

A golden-mine for research questions in toxicology: Khagendramani Darpanam

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Abstract

The Khagendramani Darpanam (KMD), a seminal 14th-century work on Indian toxicology (Vishavaidya) authored by Mangaraja, represents an extensive yet largely unexplored "golden-mine" of traditional clinical wisdom. Written in Old Kannada (Halegannada), the text systematically categorizes toxins into inanimate (Sthāvara), animate (Jangama), and artificial (Kritrima) sources, offering nearly 600 medicinal plant remedies and complex herbo-mineral formulas. This paper identifies KMD as a fertile ground for modern pharmacological research, focusing on its sophisticated multi-modal treatment protocols for severe envenomation. The paper discusses the scope for research in KMD and appeals more and more researchers to work in the area to contribute to scientific validation of Indian Knowledge Systems and humanity at large. The paper suggests a couple of typical research questions for researchers to work on, as a sample; while hundreds of researchers can work on. Furthermore, the paper explores KMD's unique integration of psychosomatic acoustics (Mantra Chikitsa) and revival techniques (Kakapada), suggesting modern neuro-acoustic methodologies to measure autonomic stabilization. By bridging Mangaraja's holistic "Mani, Mantra, Mardu" approach with modern evidence-based medicine, this study underscores the text's potential to inform contemporary drug discovery, sepsis management, and emergency clinical protocols.

Keywords: Khagendramani Darpanam, Mangaraja, *Vishavaidya*, Toxicology, Research Methodology, Monitor Lizard Toxicity, Phytochemistry, Traditional Medicine.

Introduction

Toxicology, traditionally referred to as *Vishavaidya* in the Indian Knowledge Systems, is the scientific study of poisons (*visha*), their origins, their effects on

humans, animals or any living beings, and the methods used to neutralize them.

Khagendramani Darpanam (KMD) is a monumental 14th-century encyclopedia of Indian toxicology (*Vishavaidya*). Written by the poet-physician

Mangaraja in approximately 1350 CE, the work is composed in the Halegannada (Old Kannada) Champu style, which intricately weaves together prose and poetry. It is regarded as one of the most systematic and exhaustive treatises on the science of poisons within the Indian Knowledge Systems (IKS), uniquely documenting advanced medical wisdom in a regional language.

The text is organized into sixteen comprehensive chapters (*Adhikārās*) that detail the diagnosis, prognosis, and treatment of various envenomations. It classifies toxins into three primary categories:

- **Sthavara Visha:** Inanimate poisons derived from plants and minerals, identifying twenty-five distinct types including *Vatsanabha* and *Kalakuta*.
- **Jangama Visha:** Animate poisons from living creatures, detailing clinical protocols for the eight major lineages of serpents, scorpions, rats, rabid dogs, tigers, and even injuries from human teeth and nails.
- **Kritrima Visha:** Artificial or deceptive poisons surreptitiously introduced into food, drinks, or perfumes.

A distinguishing feature of the source is its psychosomatic approach to healing, which emphasizes the synchronization of medicine (*Aushadha*) with Mantras (incantations) and Mani (precious stones) to stabilize a patient's mental and physical state. The core clinical methodology described involves:

- **Pāna:** Medicated drinks to neutralize internal toxins.
- **Anjana:** Collyrium or medicated eye drops.
- **Nasya:** Nasal administration, based on the principle that the head is the primary seat of the nervous system.
- **Lepana:** Topical ointments and coatings applied to the site of the bite or wound.

Rooted in Jain medical traditions and drawing from the works of masters like Puṇyapāda, Mangarāja defines the fundamental philosophy of his work as "*sarvajānopakāra*"—the noble pursuit of providing benefit and protection to all living beings. The source also serves as a massive pharmacological repository, detailing over 600 medicinal plants and precise instructions for their collection based on seasons and soil conditions.

Contents of Khagendramani Darpanam

Khagendramani Darpana has 16 chapters, known as *Adhikārās*, which provide a systematic exploration of

Indian toxicology (*Vishavaidyā*). These chapters cover the classification of poisons, diagnostic methods, and a variety of clinical treatments ranging from herbal drugs to sound therapy. The contents of the 16 chapters (C1 to C12) are mentioned in brief, in the following paragraphs.

Prathamādhikāram (C1): *Sanjñā*

Prakaranam (ಸಂಜ್ಞಾ ಪ್ರಕರಣಂ)

This chapter introduces the science of toxicology, defining basic terminology and the intent of the work. It addresses the general classification of poisons and the foundational principles of diagnosis and prognosis. A significant portion is dedicated to "*Dhoota Lakshana*," or interpreting omens and signs from a messenger to determine the clinical outcome of a bite victim.

Dwitiyādhikāram (C2): *Sthāvaravisha*

Prakaranam (ಸ್ಥಾವರವಿಷ ಪ್ರಕರಣಂ)

The focus of this chapter is on inanimate poisons derived from approximately 25 different plant and mineral sources. It addresses the toxicity found in various parts of plants, such as roots, fruits, leaves, and flowers, including potent toxins like *Vatsanābha* and *Kālakoota*. The chapter details the symptoms caused by these inanimate poisons, such as diarrhea, fainting, and hallucinations, and provides extensive herbal remedies to neutralize them.

Trutiyādhikāram (C3): *Sangrahādhikāram*

(ಸಂಗ್ರಹಾಧಿಕಾರಂ)

This chapter begins the study of animate poisons (*Jangama Visha*), specifically focusing on the eight major lineages of serpents. It addresses the physical characteristics and toxic potential of snakes like *Ananta*, *Vāsuki*, and *Takshaka*. Clinical issues discussed include the patterns of bite wounds (*kshata*) and how different elemental forces like earth, water, and air influence the spread and symptoms of venom in the body.

Chaturtādhikāram (C4): *Gāruda*

Mantradhikāram (ಗಾರುಡಮಂತ್ರಾಧಿಕಾರಂ)

This chapter addresses the psychosomatic and vibrational aspects of poisoning through the science of *Mantras* (incantations). It provides specific auditory formulas designed to stabilize a victim's mental state and physically neutralize toxins. The chapter discusses how these *mantras* can be used for "*Stambhana*" (arresting the spread of poison) and "*Nirvisha*" (neutralization) during critical emergencies.

Panchamādhikāram (C5): *Pānādhikāram*

(ಪಾನಾಧಿಕಾರಂ)

Internal toxicity is the primary concern of this

chapter, specifically focusing on poisons that have entered the circulatory system and affected the seven tissues (Dhatus) of the body. It provides detailed protocols for administering medicated drinks (Pana) to treat the varying stages of snake envenomation. The chapter addresses symptoms occurring as venom progresses through different "vegās" or stages of intensity within the human body.

Shashtādhikāram (C6): Anjana Prakaranam (ಅಂಜನ ಪ್ರಕರಣಂ)

This chapter deals with toxicity that affects the eyes and vision, as well as the use of the eyes as a superior route for systemic detoxification. It addresses symptoms like ocular dimness and delusions caused by various poisons. The chapter details the preparation and application of "Anjana" (medicated collyrium) as a superior modality for reviving unconscious victims and clearing the mind.

Saptādhikāram (C7):

Nasya Prakaranam (ನಸ್ಯ ಪ್ರಕರಣಂ)

The toxicity issues addressed here concern the head and respiratory systems, based on the principle that the head is the "entrance" to the body's vital functions. It provides treatments for poisons that cause neurotoxic symptoms, such as loss of speech, motor failure, and respiratory distress. Nasal administration (*Nasya*) is used to deliver potent herbal extracts directly to the central nervous system to revive victims.

Astādhikāram (C8): Lepana Prakaranam (ಲೀಪನ ಪ್ರಕರಣಂ)

This chapter focuses on localized toxicity and the immediate physical trauma at the site of a bite or sting. It addresses inflammation, swelling, and localized necrotic effects caused by venomous fangs. The primary treatment method discussed is "Lepana," the application of medicated pastes and topical coatings to draw out toxins and prevent their systemic absorption.

Navamādhikāram (C9): Anjana, Pana Nasya Lepana Prakaranam (ಅಂಜನ ಪಾನ ನಸ್ಯ ಲೀಪನ ಪ್ರಕರಣಂ)

This chapter addresses severe, multi-systemic toxicity that requires the simultaneous application of all four major clinical procedures: drinks, eye drops, nasal drops, and topical ointments. It focuses on cases where the poison is so deep-seated or potent that a single route of administration is insufficient to save the patient. The text emphasizes the synergistic effect of combining these treatments for acute envenomation.

Dashamādhikāram (C10): Kshudrasarpa Vishāpaharanam (ಮಂಡಲಸರ್ಪ ಪ್ರಕರಣಂ)

This chapter specifically addresses the toxicity resulting from the bites of 19 varieties of "minor" snakes, primarily viper-like serpents known as Mandali. It details the specific symptoms associated with each type, such as localized rotting of the flesh, excessive bleeding, and high fever. The chapter provides unique diagnostic signs for these snakes, including the patterns of their body markings and the specific timing of their activity.

Ekādashādhikāram (C11): Vruschika Prakaranam (ವೃಶ್ಚಿಕ ಪ್ರಕರಣಂ)

Toxicity from the stings of scorpions is the sole focus of this chapter. It addresses the varying degrees of pain and systemic reactions caused by different scorpion species, categorized by their color and toxic potency. The chapter provides specific remedies, including fumigation and topical treatments, to neutralize the sharp, localized burning sensation characteristic of these stings.

Dwādashādhikāram (C12): Mooshikavisha Prakaranam (ಮೂಷಿಕವಿಷ ಪ್ರಕರಣಂ)

This chapter deals with the toxic effects of bites from 18 varieties of rats and mice. It addresses symptoms such as localized itching, fever, hair standing on end, and more severe systemic manifestations. The chapter lists nearly 45 different herbal remedies and fumigation techniques specifically designed to treat rodent-born toxicity.

Trayodashādhikāram (C13): Sarva Jangama Visha Prakaranam (ಸರ್ವ ಜಂಗಮ ವಿಷಮ ವಿಷಚಿಕಿತ್ಸಾ ಪ್ರಕರಣಂ)

This comprehensive chapter addresses toxicity from all other animate sources beyond snakes, scorpions, and rats. It covers the bites and stings of wild animals like tigers and bears, domestic animals like dogs and cats, as well as insects, spiders, and even human bites. Issues such as rabies ("*Penkuli*") and the toxic reactions to animal saliva and nails are explored in detail.

Chaturdashādhikāram (C14): Kritrima Vishachikitsā Prakaranam (ಕೃತ್ರಿಮ ವಿಷಚಿಕಿತ್ಸಾ ಪ್ರಕರಣಂ)

The toxicity issues in this chapter concern "artificial" or deceptive poisons known in Kannada as Kaimasaku or Maddaku. It addresses poisons deliberately introduced into food, drinks, or cosmetics, often causing chronic conditions, mental confusion, or slow systemic failure. The chapter details symptoms like digestive disorders, coughing,

and wasting diseases resulting from these hidden toxins.

Panchadashādhikāram (C15):

***Bhaspachikitsa Prakaranam* (ಬಾಷ್ಪಚಿಕಿತ್ಸಾ**

ಪ್ರಕರಣಂ)

This chapter addresses a unique toxicological concept involving "toxic vapors" or humors known as Bhaspa. It identifies 21 specific types of these toxic states, including Pitta Bhaspa and Krimi Bhaspa, which manifest through symptoms like internal burning, tremors, and metabolic disturbances. The chapter provides diagnostic criteria and specialized treatments to purge these toxic humors from the system.

Shodashādhikāram (C16):

***Sankeernādhikāra* (ಸಂಕೀರ್ಣಾಧಿಕಾರಂ)**

This miscellaneous chapter covers various remaining toxicological issues, including general detoxification and preventive medicine. It addresses environmental toxicity, such as identifying if a house or area is infested with venomous creatures, and provides methods to attract or expel them. The chapter also discusses the long-term management of recovered patients and techniques for testing if food or water has been contaminated.

Scope for research

KMD is currently in bookshelves of libraries, and hardly any attention is paid towards the contents and its practical usage. This can best be overcome by two routes. One, the contents should be brought to public information by putting it in a language easily understandable by common-man in their languages, upon which the required people put them to use just believing in the content. The second is research scholars who can bridge the gap traditional wisdom and evidence-based medicine. These scholars, a scope for at least 1000 scholars, to take up research on various issues of toxicity addressed in KMD to know the modern evidence-based practicality aspects and offer their findings for practice by public as applicable. Since KMD documents nearly 600 medicinal plants and over 150 combinations for treating Sthavara (inanimate) and Jangama (animate) poisons, which are the toxicity challenges society is facing, the second route is what the current paper is emphasizing on. In this context, some possible research questions are highlighted here, which could be taken as examples to formulate over thousand research questions.

Do the aqueous and ethanolic extracts of the *Chilla* plant (*Strychnos potatorum*), as described in the

Panadhikāra, exhibit significant neutralization of the enzymatic and lethal activities of *Daboia russelii* (Russell's viper) venom in vitro?

What are the specific phytochemical profiles and bioactive secondary metabolites of the herbs used in the *Krutantakudharashani Rasa* that contribute to its purported efficacy against systemic cobra envenomation?

Neuro-Acoustics and Psychosomatic Modulation
The *Garudamantradhikāra* emphasizes the use of specific auditory vibrations (Mantras) to stabilize a victim's mental state and induce a state of trance. Does the rhythmic repetition of the *Amrutadhara* and *Pakshiraja* mantras produce a measurable effect on autonomic nervous system parameters (heart rate variability, cortisol levels) in patients experiencing acute trauma or toxic shock? Hence, can the procedure of *Krosha Pataha Tadana* (beating drums near the ear) be analyzed as a form of sensory-evoked neural stimulation to assist in reviving victims of neurotoxic syncope?

Anjana (ocular) and *Nasya* (nasal) are two routes of administration of drugs which are not common in modern medicine; based on the primacy of the head in the human nervous system. Does the nasal administration (*Nasya*) of herbal preparations containing garlic and black pepper provide a faster route for bioactive compounds to bypass the blood-brain barrier compared to standard oral delivery during toxicological emergencies? Similarly, what is the permeation rate and systemic absorption profile (bioavailability) of the herbal-mineral coatings (*Lepana*) when applied to wounds using the *Kākāpāda* (crow's foot incision) method as a local stimulant for peripheral blood flow?

The *Kritrima Visha Prakarana* details poisons introduced through deceptive means, such as food contamination and physical contact. So the question arises as how does the clinical symptoms of artificial poisoning (*Kritrima Visha*) described in KMD correlate with modern diagnostic criteria for chronic heavy metal toxicity or environmental chemical exposure? Thus, can the antidotes for "*Kaitaka*" toxins, applied through kissing or skin contact, be validated for their efficacy in neutralizing modern industrial skin irritants or biological allergens?

Even the most "strange" treatments recommended in KMD can be analyzed for their biological potential. Thus, the question to be answered by research scholar is whether there a presence of specific microbial enzymes or chemical irritants in biological waste products (such as the excreta mentioned in the text) that could historically have acted as a chemical trigger for the respiratory centers in cases of severe neurotoxic paralysis? Thus, typically, does the application of sesame (*Tilaja*) to

eyes exposed to caustic Calotropis milk provide a surfactant effect that reduces corneal tissue damage? By addressing these questions through clinical trials and laboratory analysis, the Indian Knowledge Systems (IKS) can move from preservation to active scientific contribution.

Typical specific research questions:

When it comes to animate bites, the most common bites heard of are the dog bite, snake bite, honeybee bite and scorpion bites. However, KMD in chapter 13 suggests remedies for a number of bites (Table 1), all of which are worth researching on.

Table 1: Cases of animate toxicity for which neutralization is suggested in KMD, Chapter 13

Animate Toxicity Source	KMD verse reference
Tiger [ವ್ಯಾಘ್ರ / ಪುಲಿ]	13: 5–11
Lion [ಹರಿ (ಸಿಂಹ)]	13: 15
Wolf [ವ್ಯಕ (ತೋಳಿ)]	13: 15, 21
Jackal [ಗೋಮಾಯು / ನರಿ]	13: 47–48
Bear [ಕರಡಿ]	13: 18–19
Elephant [ಎಭ / ಗಜ / ಆನೆ]	13: 15, 61
Horse [ಅಶ್ವ / ಕುದುರೆ]	13: 12, 64
Wild Boar / Pig [ವಾರಾಹ / ಸೂಕರ / ಹಂದಿ]	13: 15, 20
Cow or Buffalo [ಅಮ್ಮಾವಿ / ಕೋಣ / ಗೋ]	13: 63, 74–75
Dog [ಕುಕ್ಕುರ / ನಾಯಿ ಮತ್ತು ಪೆಂಕುಳಿ]	13: 15, 24–46
Cat [ಬಿಡಾಲ / ಬೆಕ್ಕು]	13: 15, 49–51
Mongoose [ನಕುಲ / ಮುಂಗುಸಿ]	13: 12, 58–59
Rabbit [ಮೊಲ]	13: 78
Porcupine / Hedgehog [ಎಯ್ಯಿ]	13: 79–80
Monkey / Primate [ವಾನರ / ಮುಸು / ಸಿಂಗಳಿಕೆ]	13: 15, 59, 60, 62
Stag / Deer [ಕಡವು / ಮರೆ / ಹುಲ್ಲೆ / ಸಾರಂಗ]	13: 70–73
Wall Lizard [ಪಲ್ಲಿ / ಗೃಹಕೋಗಿಲೆ]	13: 90–95
Garden Lizard [ಓತಿ / ಸರತಿ]	13: 86
Chameleon [ಗೋಸುಂಬೆ]	13: 87
Monitor Lizard [ಉಡೆ]	13: 83–85
Crawling Lizard / Insect [ಪಾವರಣೆ]	13: 88–89
Crocodile / Shark [ಮಕರ / ಶಿಶುಮಾರ (ಮೊಸಳೆ)]	13: 96
Fish [ಮೀನೆ]	13: 97–100
Crab [ಏಡಿ / ಕುಲೀರ]	13: 101
Leech [ಜಿಗುಳೆ / ಜಲಾಶ]	13: 107
Frog [ಭೇಕ / ಕಡ್ಡೆ]	13: 102–106
Bee / Wasp / Swarming Insects [ಅಳಿ / ತುಂಬೆ]	13: 109–110
Hornet / Wasp [ಕಡೆಂದುರು]	13: 111

Animate Toxicity Source	KMD verse reference
Honeybee [ಜೇನನೋಣ]	13: 113
General Fly [ನೋಣ]	13: 114–116
Swarming Gnats [ನೋರಜು / ಗುಂಗುರು]	13: 124–125
Ant [ಇರುವೆ / ಕೆಂಜಿಗ]	13: 121–122
Bedbug [ತಗುಣೆ]	13: 121
Caterpillar [ಕೆಂಬಳಿಹುಳು]	13: 119
Specialized Worms / Insects [ಕೊಡಹುಳು / ಬಚ್ಚಹುಳು]	13: 120, 123, 126
Various Small Insects [ಕೀಟಕ (ವಿವಿಧ ಕೀಟಗಳು)]	13: 133–140
Bird Excreta [ಖಗಾಳಿ ಮೂತ್ರ-ವಿಷ್ಣು (ಪಕ್ಷಿಗಳ ಮಲಮೂತ್ರ)]	13: 108
Human Bites / Scratches [ಮನುಜ ದಂತ-ನಖ (ಮನುಷ್ಯನ ಹಲ್ಲು ಮತ್ತು ಉಗುರು)]	13: 128–131

Consider a typical case, arbitrarily, of Monitor Lizard toxicity. Modern literature does not give any specific neutralizer (Vikrant *et. al.*) KMD in three verses 83–85 of chapter 13, give three types of suggestions for its neutralization; namely pāna, lepana and anjana; meaning, for internal consumption, external application and eyebrow application respectively. The three verses are as follows:

"ಭಲ್ಲಾತಕ ತರುಮೂಲಂ ಸಲ್ಲಿತ ಗುಡೂಚಿ ಭದ್ರಮುಸೆಯಿವಂ
ತಾಂ |
ನಿಲ್ಲದೆ ನೀರಿಂ ಕುಡಿಯಲ್ ನಿಲ್ಲದು ಹೇರುಡುಗಳಗಿದು ತುಡುಕಿದ
ಗರಳಂ"
"Bhallātaka tarumūlaṁ sallita guḍūci
bhadramuseyivam tāṁ |
nillade nīriṁ kuḍiyal nilladu hēruḍuḡaḷagidu
tuḍukida garaḷaṁ".

(KMD, 13: 83)

This verse suggests a medicated drink. It means as follows. To neutralize the fierce venom of a monitor lizard, grind the root of the marking nut tree (*Bhallātaka*), heart-leaved moonseed (*Guduchi*), and nut grass (*Bhadramuste*) in water and give it to the victim to drink.

The therapeutic mechanism for neutralizing monitor lizard toxicity through this verse could be through the synergistic action of Bhallātaka (*Semecarpus anacardium*), Guduchi (*Tinospora cordifolia*), and Bhadramuste (*Cyperus rotundus*) ground in an aqueous medium. Monitor lizard bites are clinically significant for causing severe localized infection and systemic sepsis due to the complex bacterial flora in their saliva; therefore, the inclusion of *Guduchi* could provide essential immunomodulatory and anti-inflammatory support to stabilize the victim's metabolic response. *Bhadramuste* is known to act as a potent detoxifier that aids in blood purification, while the root of *Bhallātaka* is traditionally valued for

its deep-tissue penetration, likely working to neutralize necrotic enzymes and prevent the systemic spread of the venom.

"ಕನಕದ ರಸಮುಂ ಗರ್ದುಗುಂ ಜನಹಿತಕರಮೆನಿಸಿ ಪರ್ನಿದೆಯೆಲೆ

ನಾಗಂ |

ಸುನಯದಿನರೆದು ವಿಲೇಪಿಸ

ಲ್ಮನುಪಮಮೆನಿಪುಡುಗುಗ್ರವಿಷಮದು ತಿಳಿಗುಂ"

"Kanakada rasamuṃ garduguṃ janahitakāramenisi
parṇideydele nāgaṃ |
sunayadinaredu vilēpisa
lmanupamamenipuḍugaḷuḡraviṣamadu tiḷigum".

(KMD, 13: 84)

This verse suggests an ointment. It means as follows: To clear the intense toxicity, prepare a paste by grinding the juice of the Datura plant (*Kanaka*), bonduc nut (*Gardugu*), and the leaves of the "five-leafed Naga" plant, then apply it as an ointment to the site of the bite.

The therapeutic mechanism of the *Lepana* (ointment) described here might focus on countering the localized tissue destruction and rapid infection characteristic of a monitor lizard (*Uda*) bite. By grinding the juice of Datura (*Kanaka*), Bonduc nut (*Gardugu*), and the leaves of the "five-leafed Naga" plant (botanical equivalent to be researched), the combination could create a potent biochemical barrier at the site of envenomation. *Caesalpinia bonduc* (Bonduc nut) is traditionally valued for its antiseptic and anti-inflammatory properties, which directly target the complex bacterial flora found in reptilian saliva to prevent systemic sepsis. Furthermore, the alkaloids in the Datura juice likely could act as local modulators to suppress the enzymatic breakdown of tissue, thereby stabilizing the wound and preventing localized necrosis from progressing into the circulatory system

"ಅತಿಬಜೆ ಕರ್ಪುರ ಗುಂಜಾನ್ವಿತಮಪ್ಪಭಯಂಗಳೆಂಬಿವಂ

ಪಾಲಿಂದು |

ಯತಮಾಗೆ ಕಣ್ಣೆಳಿಚ್ಚಿ ಲ್ಪುತಿಮಮೆನಿಪುಡುವಿನುಗ್ರ

ವಿಷತತಿಯಚ್ಚುಗುಂ"

"Atibaje karpura guṇjānṇitamappabhayaṅgaḷembivam
pālindu |

yatamāḡe kaṇṇollicca lṇṇtimamenippuḍuvinuḡra
viṣatatiyacchaguṃ"

(KMD, 13: 85)

This verse suggests eyeliner application. It means as follows. To destroy the severe spread of the venom, grind sweet flag (*Atibaje*), camphor, rosary pea (*Gunja*), and myrobalan (*Abhaya*) in milk and apply the mixture to the eyes as a medicated collyrium.

The possible therapeutic mechanism of the *Anjana* described here focuses on the rapid systemic and

neurological stabilization of the victim. By grinding Sweet Flag (*Atibaje*), Camphor (*Karpura*), Rosary Pea (*Gunja*), and Myrobalan (*Abhaya*) in milk, the remedy could use a lipid-based vehicle to enhance the absorption of bioactive compounds. Monitor lizard bites are clinically associated with severe sepsis and potential neurotoxic effects; the ophthalmic route is traditionally employed in *Vishavaidya* to provide a direct pathway for medicinal metabolites to protect the central nervous system and vision. The aromatic and neuro-modulatory properties of ingredients like *Acorus calamus* (*Atibaje*) likely work to counter the "severe spread of venom" (ಉಡುವಿನುಗ್ರ ವಿಷತತಿ) by inducing rapid cortical arousal and systemic detoxification

Considering the possible research methodology for the three verses, the following propositions can be made.

The first step in the research, not only for the three verses, but any of the verses is the botanical standardization of the material or the herb. Next would be to employ LC-MS/MS phytochemical profiling to identify the specific metabolites that contribute to the formula's property to combat the particular pathogen.

With respect to pāna, (KMD, 13:83), modern research could employ in vitro enzymatic inhibition assays to test the extract's ability to halt tissue-degrading enzymes and in vivo animal models to conduct LD50 shift assays, measuring the formula's systemic efficacy in increasing survival rates after envenomation. Finally, a histopathological review of vital organs and the bite site would be necessary to confirm if the formula effectively prevents the rapid progression of sepsis and localized necrosis typical of such animal bites

With respect to *lepana* (KMD, 13:84) scientific validation could start with in vivo animal modelling, where the *lepana* is applied to standardized bite wounds to monitor its ability to halt tissue degradation via histopathological reviews of the site. Additionally, transdermal absorption studies can be used to measure how effectively the medicinal compounds penetrate the skin to neutralize localized toxins, providing a translational evidence base.

For scientific validation researchers could then employ In Vivo bioavailability assays using animal models to measure the concentration of medicinal markers in the bloodstream and cerebrospinal fluid, specifically comparing the speed of absorption via the ophthalmic route versus standard oral administration. Furthermore, specialized trans-barrier studies could be conducted to determine if the lipid medium (milk; by default, meaning Bos-Indicus milk) effectively assists these herbal compounds in bypassing the blood-brain barrier to

mitigate neurotoxic damage. Further, the study could assess the synergistic role of the *Anjana* within the holistic "*Pana-Lepana-Anjana*" framework to see if its inclusion results in a statistically significant reduction in systemic sepsis and recovery time.

The three methods, being working in different routes, perhaps could be complementary to each other. Thus, even simultaneous use of the three is also worth studying, which could hasten the action; is also worth studying.

Yet another interesting possible research from chapter 4 of KMD is given in brief here. This compelling example for research is based on verse 4:49 (an arbitrary verse) of KMD reads as follows:

"ಕ್ರಮದೋಂ ನಮೋ ಭಗವತಿ ಪ್ರಮುಖಾಕ್ಷರಮಂ ಜಪಂಗೆ |ಯಲ್ ಸೀಂ|

ನೂಟಂ |

ಟಮರ್ಬರೆ ಬಟಿಯಂ ತಾಡಿಸು |

ಡಮರುಗಮಂ ದಷ್ಟಪಾಶ್ವರೋಕ್ ಸಾಕ್ಷೋಶಂ"

kramadoṃ namō bhagavati pramukhākṣaramaṃ japaṅge
[yal nīṃ] nūḷiṃ | ṭamardire baḷiyam tādīsu |
ḍamarugamaṃ daṣṭapāśvadoḷ sākrośaṃ

(KMD, 4:49)

This means, "The physician is instructed to chant the *Namo Bhagavati* mantra 108 times while simultaneously beating a drum (*damaruga*) near the ear of a victim who has fallen into a toxic coma from a snake bite." The goal is to "awaken" or revive the patient using high-decibel acoustic and vibrational triggers.

Modern validation of this protocol involves the systematic application of Neuro-Acoustic Spectral Analysis to perform a Fast Fourier Transform (FFT) on the rhythmic, high-decibel drumming of the *damaruga* and the 108 repetitions of the *Namo Bhagavati* mantra to identify frequencies that may trigger cortical arousal in victims of neurotoxic paralysis. By monitoring objective clinical markers such as EEG brainwave patterns and Heart Rate Variability (HRV), the protocol seeks to quantify how these traditional vibrational triggers stabilize the Autonomic Nervous System and potentially stimulate neural pathways to awaken a patient from a toxic coma. This methodology aims to bridge Mangaraja's esoteric "*Mantra Chikitsa*" with contemporary evidence-based medicine, investigating whether sensory-evoked neural stimulation can function as a viable resuscitation limb within a holistic clinical framework.

While many such examples can be given, only a couple of them is considered in order to say the scope for research on KMD which is virtually endless.

Conclusion:

Khagendramani Darpana stands as a monumental but largely unexplored repository of 14th-century toxicological wisdom, bridging ancient Indian Knowledge Systems with potential modern scientific applications. Its systematic documentation of intricate herbal-mineral formulations; presents a vast field for phytochemical and pharmacological research into identifying novel bioactive compounds for anti-venom therapy.

The scope for research extends beyond pharmacology into the realms of neuro-acoustics and psychosomatic medicine, where the text's elaboration on *Mantra Chikitsa* (such as the *Amrutadhaba* mantra) and sensory-stimulation procedures (like *Krosha Pataba Tadana*) offers unique data for studying autonomic nervous system modulation. Additionally, the text's emphasis on specialized administration routes like *Nasya* (nasal) and *Anjana* (ocular) provides a historical basis for investigating trans-barrier drug delivery systems in medical emergencies.

Ultimately, the transition of this text from a literary treasure to a modern research subject requires translational inquiry and rigorous clinical validation. By applying contemporary methodologies to its protocols for managing *Jangama* (animate), *Sthavara* (inanimate/stationary), and *Kritrima Visha* (artificial poisons), the scientific community can fulfill Mangaraja's noble philosophy of *sarvajanopakāra*—ensuring that this "unexplored treasure" contributes effectively to global public health and evidence-based medicine.

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Ecology & Environment

Panchavati: Sacred Trees and Ecological Heritage towards Human Well-being

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Abstract

Panchavati, the sacred assemblage of five revered trees, represents one of the oldest ecological traditions embedded in the cultural landscape of India. Although widely known through epics, Puranic literature and temple traditions, Panchavati extends beyond religious symbolism and embodies a sophisticated understanding of biodiversity conservation, ecological balance, medicinal plant utilization and harmonious coexistence between humans and nature. The deliberate cultivation of selected tree species around hermitages, temples and settlements served multiple ecological and social functions, including soil conservation, microclimate regulation, habitat creation for birds and pollinators, carbon sequestration and preservation of medicinal plant resources. Traditional communities perceived these trees as sacred entities, thereby ensuring their protection through cultural practices rather than legal regulations.

Modern botanical and pharmacological investigations demonstrate that many Panchavati species possess significant bioactive compounds with antioxidant, antimicrobial, anti-inflammatory, immunomodulatory and cardioprotective activities. Simultaneously, these species contribute to ecosystem resilience through nutrient cycling, groundwater recharge, carbon storage and enhancement of local biodiversity. The Panchavati tradition therefore illustrates an integrated ecological philosophy where spiritual values, environmental stewardship and community health reinforce one another.

This review synthesizes classical literary sources, ethnobotanical knowledge and contemporary scientific literature to examine Panchavati as a multidisciplinary framework connecting sacred ecology, agroforestry and ecological sustainability. The study argues that traditional sacred grove practices continue to provide valuable insights for biodiversity conservation and ecological restoration.

Keywords: Panchavati, Sacred Trees, Ethnomedicine, Sacred Groves, Ecology, Medicinal Plants, Biodiversity Conservation, Agroforestry, Ecological Health

Introduction

Across civilizations, trees have served as symbols of continuity, resilience and life. In the Indian subcontinent, reverence for trees evolved into sophisticated ecological traditions that integrated spirituality with environmental stewardship. Among

these traditions, *Panchavati* occupies a distinctive position as a sacred assemblage of five selected tree species cultivated in hermitages, temple complexes and community landscapes. The term *Panchavati* literally denotes a grove of five sacred trees, although regional traditions differ in the exact botanical

composition. Classical literature associates *Panchavati* with spiritual practice, meditation, ecological harmony and human well-being.

The Ramayana immortalized *Panchavati* as the forest dwelling of Rama, Sita and Lakshmana, transforming it into a symbol of ideal coexistence between humans and nature. Subsequent Purāṇic literature, temple rituals and regional customs further enriched the concept by associating individual trees with divine principles, medicinal virtues and ecological functions. Sacred trees such as Bilva, Ashvattha, Tulasi, Ashoka and Khadira became integral components of cultural landscapes, while regional traditions incorporated Neem, Banyan, Amla and Banni according to local ecological conditions.

Beyond religious symbolism, *Panchavati* represents a remarkable example of indigenous ecological planning. The deliberate preservation of perennial tree species created stable microhabitats that supported biodiversity, moderated local climate, conserved soil moisture and supplied medicinal resources for surrounding communities. The ecological services provided by sacred groves anticipated many principles now recognized in restoration ecology and sustainable landscape management.

Recent advances in ethnobotany, phytochemistry and conservation biology have renewed interest in sacred groves as reservoirs of biological diversity and traditional knowledge. Numerous medicinal plants associated with *Panchavati* possess pharmacologically active compounds that continue to attract biomedical research. Simultaneously, sacred groves function as repositories of native germplasm and contribute to landscape resilience in increasingly fragmented ecosystems.

The present review reinterprets *Panchavati* through an interdisciplinary lens by integrating historical literature, botanical science, ethnomedicine, ecology and agroforestry. It seeks to demonstrate that the *Panchavati* tradition represents not merely a cultural heritage practice but an enduring ecological paradigm capable of informing contemporary approaches to environmental conservation and human well-being.

Historical Evolution of the *Panchavati* Concept

The concept of *Panchavati* occupies a distinctive position in the cultural and ecological history of the Indian subcontinent. The Sanskrit term *Panchavati* literally denotes "a grove consisting of five sacred trees." Classical literature portrays such groves as ideal habitats for contemplation, spiritual practice, education, and harmonious interaction between human society and nature. Although the specific

composition of *Panchavati* varies regionally, the underlying philosophy remains constant: the conservation of ecologically and culturally significant tree species through sacred traditions.

The most celebrated reference to *Panchavati* occurs in the *Valmiki Ramayana*, where Lord Rama, Sita, and Lakshmana established their forest hermitage on the banks of the Godavari River. The narrative depicts the grove as a landscape of exceptional biological richness, abundant water resources, flowering trees, birds, and wildlife. Rather than serving merely as a mythological setting, *Panchavati* represents an ecological ideal where human habitation is integrated with natural ecosystems without degrading environmental integrity.

Subsequent Purāṇic literature, Āgamic traditions, and regional religious practices further expanded the symbolism of *Panchavati*. Various sacred texts associate particular trees with specific deities and cosmic elements, thereby reinforcing their protection through ritual observances. Such traditions effectively transformed ecological conservation into a cultural obligation, ensuring the survival of valuable native species over centuries.

Regional traditions across India adapted *Panchavati* according to local ecological conditions. In Karnataka, combinations involving Ashvattha (*Ficus religiosa*), Bilva (*Aegle marmelos*), Banyan (*Ficus benghalensis*), Neem (*Azadirachta indica*), Amla (*Phyllanthus emblica*), and Banni (*Prosopis cineraria* or related species) have been maintained in temple precincts and village commons. These regional adaptations demonstrate the dynamic relationship between traditional ecological knowledge and local biodiversity.

From an environmental perspective, *Panchavati* may be interpreted as an early community-based conservation strategy where religious values ensured long-term protection of ecologically important species without formal legal institutions. Such sacred landscapes contributed significantly to biodiversity preservation and ecological resilience throughout history.

Further, it is worth noting here that *Panchavati* is one model. There are similar models like the *Rāshi vana*, *Nakshatra vana*, *Panchabhoota vana*, *Devara kādu*, *Charaka vana*, Neem-Peepal-Bayan combination, Neem-Peepal *vivāh* (marriage) etc. All such concepts serve similar purpose as the *Panchavati*.

Botanical Diversity and Ecological Significance

The botanical composition of *Panchavati* differs among textual traditions and geographical regions, yet certain species occur repeatedly because of their

ecological adaptability, medicinal importance, and cultural significance. Table 1 shows a typical

Table 1: Typical Panchavati tree combinations in various regions.

Spiritual Forest Type & Primary State / Region	The Five Representative Sacred Trees / Plants
Pan-India Standard (Central, Northern, & Western India)	1. Peepal (<i>Ficus religiosa</i>) 2. Banyan / Vata (<i>Ficus benghalensis</i>) 3. Bilva / Bael (<i>Aegle marmelos</i>) 4. Amla (<i>Phyllanthus emblica</i>) 5. Ashoka (<i>Saraca asoca</i>)
Arid & Semi-Dry Zone (Rajasthan, Punjab, Haryana)	1. Peepal (<i>Ficus religiosa</i>) 2. Banyan (<i>Ficus benghalensis</i>) 3. Bilva / Bael (<i>Aegle marmelos</i>) 4. Neem (<i>Azadirachta indica</i>) 5. Shami (<i>Prosopis cineraria</i>)
Southern Evergreen Zone (Tamil Nadu, Karnataka, Kerala)	1. Ashwatha (Peepal) 2. Audumbara / Gular (<i>Ficus racemosa</i>) 3. Bilva (<i>Aegle marmelos</i>) 4. Nimba / Neem (<i>Azadirachta indica</i>) 5. Vanni / Shami (<i>Acacia ferruginea</i>)
Nashik Pilgrimage Core (Maharashtra State)	Five Standalone Banyan Trees (Five distinct individual Vats / Vrikshas)
Jain Tirthankar Van (Gujarat, Rajasthan, Maharashtra)	1. Bargad / Vata (<i>Ficus benghalensis</i>) 2. Sal (<i>Shorea robusta</i>) 3. Peepal (<i>Ficus religiosa</i>) 4. Ashoka (<i>Saraca asoca</i>) 5. Mahua (<i>Madhuca indica</i>)
Navgraha Van / Vatika (Pan-India Astrological)	1. Arka / Rui (<i>Calotropis gigantea</i>) 2. Palash (<i>Butea monosperma</i>) 3. Khair (<i>Acacia catechu</i>) 4. Apamarga (<i>Achyranthes aspera</i>) 5. Shami (<i>Prosopis cineraria</i>)

A typical one is explained here.

Among the *Panchavati* trees these, **Bilva (*Aegle marmelos*)** occupies a central place owing to its association with Lord Shiva and its extensive use in Ayurveda. The tree tolerates drought, improves soil quality, supports insect diversity, and produces fruits rich in vitamins, tannins, coumarins, and alkaloids. Modern pharmacological investigations have

demonstrated antioxidant, antidiabetic, antimicrobial, and gastroprotective activities.

Ashvattha (*Ficus religiosa*), commonly known as the sacred fig, represents one of the most ecologically significant trees in South Asia. Its extensive canopy supports hundreds of bird, insect, and epiphytic species while providing nesting habitats and food resources. Its deep root system contributes to groundwater recharge and soil stabilization, making it an important component of traditional landscape ecology.

Tulasi (*Ocimum tenuiflorum*), revered in household courtyards across India, combines medicinal importance with ecological value. Rich in eugenol, ursolic acid, rosmarinic acid, and essential oils, Tulasi exhibits antimicrobial, antiviral, anti-inflammatory, and immunomodulatory properties. Its flowers attract numerous pollinating insects, thereby enhancing local ecological interactions.

Ashoka (*Saraca asoca*), traditionally associated with feminine fertility and prosperity, is an important medicinal species used extensively in Ayurvedic gynecological formulations. The tree also serves as an ornamental species that supports urban biodiversity and contributes to landscape aesthetics.

Khadira (*Acacia catechu*), widely distributed in dry deciduous forests, contributes to nitrogen cycling, soil improvement, and sustainable agroforestry systems. Catechin and catechu tannins extracted from its bark possess significant medicinal and industrial applications.

The ecological value of *Panchavati* therefore extends beyond symbolic associations. Each constituent species contributes unique ecosystem services including carbon sequestration, pollinator support, nutrient cycling, habitat formation, and microclimatic regulation.

Placement of *Panchavati* plants in the land

A traditional Vaastu-based layout for a *Panchavati* (a sacred grove of five trees), detailing their specific directional placements, associated deities, and elemental connections.

The arrangement is centred around the Vata (Banyan) tree, (figure 1) which is positioned in the middle and associated with Shiva and Prakriti (Nature). This arrangement places the Bilva tree in a position of supreme importance, serving as the axis around which the other four sacred trees and their respective elemental and divine spheres are organized.



Figure 1: Arrangement of the Panchavati plants

The figure also shows the placement of four other sacred trees in the ordinal directions, each linked to one of the four elements:

- **Northeast (Ishanya):** This direction is designated for the Ashvattha (Peepal) tree. It is associated with the element of Water and the deity Vishnu. The diagram also notes a connection to Tulasi in this sector.
- **Southeast (Agneya):** The Karaveera (Oleander) tree is placed here, representing the element of fire. It is associated with Surya (the Sun) and mentions Bili Ekke (White Calotropis) as a secondary plant.
- **Southwest (Nairutya):** This corner features the Vidira (Bamboo) tree, linked to the element of Earth (Bhumi). The deities associated with this direction are Ganesha and Durga.
- **Northwest (Vayavya):** The Ashoka tree is positioned in this direction, corresponding to the element of Air/Wind. It is associated with the deity Vayu and the goddess Ambika/Parvati.

Table 2: The Panchavati plants/trees

Direction	Primary plant/tree	Ground-level / Surrounding plant
Center (Kendra)	Bilwa <i>Aegle marmelos</i>	Drona (Thumbe) <i>Leucas aspera</i>
Northeast (Ishanya)	Ashvattha (Peepal) <i>Ficus religiosa</i>	Tulasi <i>Ocimum tenuiflorum</i>

Direction	Primary plant/tree	Ground-level / Surrounding plant
Southeast (Agneya)	Karaveera (Oleander) <i>Nerium oleander</i> *	Bili Ekke (White Calotropis) <i>Calotropis procera</i>
Southwest (Nairutya)	Vidira (Bamboo) <i>Bambusa arundinacea</i> *	Durva (Bermuda Grass) <i>Cynodon dactylon</i>
Northwest (Vayavya)	Ashoka <i>Saraca asoca</i> *	Shanka Pushpa <i>Convolvulus pluricaulis</i>

Ethnomedicinal Importance of Panchavati Species

Traditional medical systems have long recognized the therapeutic potential of Panchavati species. Classical Ayurvedic literature, regional folk medicine, and indigenous healing traditions describe numerous applications for these plants in preventive and curative healthcare.

Bilva fruits and leaves have been employed in gastrointestinal disorders, dysentery, diabetes, inflammatory diseases, and digestive dysfunctions. Experimental studies indicate the presence of marmelosin, aegeline, and various flavonoids contributing to these pharmacological effects.

Tulasi remains one of the most extensively investigated medicinal herbs worldwide. Contemporary research demonstrates antioxidant, adaptogenic, anti-inflammatory, antimicrobial, antiviral, and immunoregulatory activities. Its essential oils have attracted interest for respiratory disorders, metabolic diseases, and stress management.

Ashvattha bark, leaves, and latex are traditionally utilized in wound healing, diabetes management, asthma, and inflammatory disorders. Phytochemical analyses have identified flavonoids, phenolic compounds, sterols, and glycosides with potential therapeutic applications.

Ashoka bark is regarded as an important uterine tonic within Ayurveda and continues to be incorporated into several classical formulations for women's reproductive health. Scientific studies indicate anti-inflammatory and antioxidant activities associated with polyphenolic constituents.

Khadira possesses antimicrobial, antioxidant, anti-inflammatory, and wound-healing properties. Extracts have shown efficacy against several microbial pathogens and have applications in oral healthcare and dermatological conditions.

It is important to recognize that while many

traditional uses are increasingly supported by pharmacological investigations, therapeutic application should rely upon validated clinical evidence and appropriate medical supervision. Traditional knowledge provides valuable leads for biomedical research but should not substitute evidence-based clinical practice without adequate evaluation.

***Panchavati* and Traditional Agroecology**

Traditional agricultural systems recognized the ecological benefits of maintaining diverse perennial vegetation within cultivated landscapes. *Panchavati* exemplifies such integrated land-use planning by combining tree conservation with agricultural productivity and rural livelihoods.

Sacred trees improve soil organic matter through litter decomposition, regulate nutrient cycling, reduce erosion, enhance groundwater infiltration, and moderate local temperatures. Their canopies provide shelter for pollinating insects and natural predators of agricultural pests, thereby contributing indirectly to crop productivity.

Traditional agroforestry systems surrounding temples and village settlements often incorporated sacred trees as ecological buffers that enhanced landscape heterogeneity. Such multifunctional landscapes simultaneously supplied fruits, medicinal resources, fuelwood, fodder, shade, and cultural services.

Recent ecological studies emphasize that diversified tree-based agricultural systems exhibit greater resilience to climatic variability than monocultural systems. *Panchavati* thus represents an indigenous model of climate-resilient landscape management rooted in centuries of practical experience.

Sacred Groves, Biodiversity and Ecosystem Services

Sacred groves constitute one of the oldest forms of community-managed biodiversity conservation. Protected through religious beliefs and customary laws, these landscapes often preserve remnant patches of native vegetation that harbor rare and endemic species.

Ecological investigations across India demonstrate that sacred groves possess greater plant diversity, improved soil quality, enhanced carbon storage, and richer faunal communities than surrounding disturbed habitats. They function as ecological refugia supporting birds, reptiles, mammals, fungi, pollinating insects, and microorganisms essential for ecosystem functioning.

The conservation philosophy embedded within *Panchavati* contributed to maintaining ecological connectivity between forest fragments and agricultural landscapes. Such traditional institutions continue to provide valuable lessons for landscape restoration, ecological resilience, and community participation in conservation.

Beyond biodiversity, sacred groves generate ecosystem services including groundwater recharge, climate moderation, erosion control, nutrient cycling, carbon sequestration, and cultural identity. These services directly contribute to ecological health and human well-being by sustaining environmental quality and strengthening community relationships with nature.

***Panchavati*, Ecological Health and Human Well-being**

The increasing frequency of climate change, biodiversity loss, environmental degradation and lifestyle-related diseases has renewed scientific interest in traditional ecological practices that integrate human well-being with ecosystem conservation. The *Panchavati* tradition exemplifies such an integrated approach by recognizing that environmental health and human health are mutually dependent.

The selection of perennial tree species in *Panchavati* contributes significantly to ecological stability. Deep-rooted trees enhance groundwater recharge, reduce soil erosion, regulate hydrological cycles and improve soil organic matter through continuous litter deposition. Their extensive canopies moderate local temperatures by reducing heat stress, increasing humidity and improving microclimatic conditions, particularly in rural settlements and temple landscapes.

The biological diversity associated with *Panchavati* extends beyond the trees themselves. Sacred groves provide nesting sites for birds, refuges for reptiles and mammals, and food resources for pollinating insects and beneficial arthropods. Such ecological interactions support natural pest regulation and contribute to ecosystem resilience. Recent ecological studies increasingly recognize that small protected vegetation patches can function as biodiversity reservoirs within fragmented landscapes.

From a public health perspective, sacred green spaces influence both physical and psychological well-being. Exposure to tree-rich environments improves air quality, reduces particulate pollution, lowers ambient temperature and promotes recreational and spiritual activities that reduce psychological stress. Traditional communities intuitively understood these benefits and therefore

established sacred groves close to settlements and temples where social and cultural life was concentrated.

Medicinal plants associated with *Panchavati* further contribute to preventive healthcare. Their continued cultivation preserves valuable genetic resources that may support future pharmaceutical discovery. Consequently, *Panchavati* represents an integrated ecological-health model where environmental conservation simultaneously strengthens community health and cultural continuity.

Discussion

The *Panchavati* tradition demonstrates an extraordinary convergence of ecological wisdom, botanical knowledge, medicinal practice and cultural values. Rather than separating religion, science and environmental management into independent domains, traditional communities embedded conservation ethics within everyday religious practices. Such cultural mechanisms created powerful social institutions for protecting ecologically significant species across generations.

Modern conservation biology increasingly acknowledges the importance of indigenous and community-based conservation systems. Sacred groves preserved through customary practices frequently contain higher levels of biodiversity than surrounding landscapes subjected to intensive agriculture or urbanization. Their protection through cultural norms has often proven more durable than externally imposed regulatory frameworks.

Botanical investigations reveal that many *Panchavati* species possess exceptional ecological adaptability and medicinal importance. The coexistence of multiple perennial species within a single sacred landscape enhances structural diversity, supports pollinator communities and stabilizes ecosystem functions. Such diversity contrasts with monocultural plantations that frequently exhibit reduced ecological resilience.

Ethnomedicinal traditions associated with *Panchavati* illustrate the sophisticated empirical knowledge accumulated through centuries of observation. Although certain traditional therapeutic claims require additional clinical validation, numerous phytochemical investigations confirm the presence of biologically active compounds with antioxidant, antimicrobial, anti-inflammatory and immunomodulatory properties. This convergence between traditional knowledge and modern biomedical research provides opportunities for interdisciplinary collaboration.

The *Panchavati* concept also offers important insights for sustainable landscape planning. Urbanization and

agricultural intensification have contributed to declining tree cover and fragmentation of native vegetation. Integrating culturally important native tree species into urban parks, educational institutions, temple precincts, agricultural landscapes and community forests may simultaneously enhance biodiversity conservation, ecosystem services and public engagement in environmental stewardship.

Furthermore, *Panchavati* highlights the ethical dimension of ecological conservation. Sacredness functioned historically as a social mechanism that discouraged exploitation while encouraging long-term protection. Contemporary environmental education may benefit from recognizing the cultural and spiritual values that motivate conservation behavior alongside scientific arguments for biodiversity preservation.

Conclusion

Panchavati represents far more than a symbolic collection of five sacred trees. It embodies a comprehensive ecological philosophy in which biodiversity conservation, medicinal plant preservation, sustainable resource management and human well-being are understood as interdependent dimensions of a unified natural order.

Historical literature, regional traditions and ethnobotanical knowledge collectively demonstrate that *Panchavati* served as a practical model for integrating environmental stewardship into everyday cultural life. The deliberate protection of selected tree species generated multiple ecological benefits, including habitat conservation, carbon sequestration, soil stabilization, groundwater recharge and maintenance of biological diversity. Simultaneously, these species provided valuable medicinal resources that supported community healthcare through traditional systems of medicine.

Contemporary scientific investigations increasingly validate many ecological and pharmacological observations associated with *Panchavati* species. While traditional beliefs should be interpreted within their cultural context, modern botanical and biomedical research confirms that sacred trees contribute significantly to ecosystem functioning and possess substantial therapeutic potential. Their conservation therefore represents both a cultural responsibility and an ecological necessity.

In an era characterized by accelerating biodiversity loss and environmental instability, the *Panchavati* tradition offers an enduring model of coexistence between humans and nature. The preservation and restoration of sacred groves, integration of native medicinal trees into agroforestry systems, and documentation of associated traditional knowledge

may contribute significantly to future strategies for ecological restoration and community well-being.

The *Panchavati* tradition thus remains a living testament to the profound understanding that ecological integrity, cultural continuity and human health flourish together when nature is treated not merely as a resource but as a sacred partner in sustaining life.

Table 3. Representative Panchavati Species and Their Traditional Significance

Common Name	Traditional Significance	Major Ecological Function
Bilva	Sacred to Shiva; medicinal tree	Drought tolerance, pollinator support
Ashvattha	Sacred fig; meditation tree	Habitat for birds and insects
Tulasi	Sacred household herb	Pollinator attraction, medicinal value
Ashoka	Sacred feminine symbol	Ornamental biodiversity support
Khadira	Ritual and medicinal tree	Nitrogen cycling and soil improvement

Table 4. Selected Ethnomedicinal Properties of Panchavati Species

Species	Major Bioactive Constituents	Modern Pharmacological Evidence
<i>Aegle marmelos</i>	Marmelosin, flavonoids	Antidiabetic, antioxidant
<i>Ocimum tenuiflorum</i>	Eugenol, ursolic acid	Anti-inflammatory, antimicrobial
<i>Ficus religiosa</i>	Polyphenols, sterols	Antioxidant, antimicrobial
<i>Saraca asoca</i>	Polyphenols, tannins	Anti-inflammatory activity
<i>Acacia catechu</i>	Catechin, tannins	Antimicrobial, antioxidant

Table 5. Ecological Contributions of Panchavati Sacred Groves

Ecological Service	Contribution
Carbon sequestration	Long-term biomass accumulation
Pollinator conservation	Habitat for bees, butterflies and insects
Soil conservation	Reduction of erosion and improvement of fertility
Water conservation	Enhanced infiltration and groundwater recharge
Biodiversity conservation	Refuge for native flora and fauna
Microclimate regulation	Temperature moderation and humidity maintenance
Cultural ecosystem services	Spiritual practices and community identity

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Review paper

C.A.N. Protocol for Autism and ADHD Reversal: A Road Map by Dr. Biswaroop Roy Chowdhury

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Abstract

The global prevalence of neurodevelopmental disorders, specifically Autism Spectrum Disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD), has escalated to unprecedented levels, leaving millions of families in a state of perpetual struggle. This review article, narrated from the perspective of a parent and a scholar, examines the groundbreaking work of Dr. Biswaroop Roy Chowdhury in his book, *Cure Autism Now*. The article delves into the "Model of Cause"—a framework identifying vaccines, pharmaceutical interventions, dietary stimulants, and environmental radiation as primary triggers for neuroinflammation. By exploring the biological mechanisms of the gut-brain axis and the blood-brain barrier, this review explains the principles behind the C.A.N. (Cure Autism Now) Protocol. Furthermore, it analyzes the outcomes of an observational study involving 1,000+ children, which demonstrated a 52% average improvement in symptoms within 26 days. This work serves as both a scientific critique and a beacon of hope for parents navigating the conventional medical landscape, suggesting that these conditions are not permanent "brain wiring" issues but reversible biological manifestations.

Keywords: Autism Spectrum Disorder, ADHD, C.A.N. Protocol, Gut-Brain Axis, Neuroinflammation, Reversal, Integrative Medicine.

Introduction

I am a 39-year ordinary individual, and a faculty by profession. I am a father of a son with neurological issues, who has spent the last five years running through premium private and government hospitals, I am intimately familiar with the physical and mental hardship that families of children with

neurodevelopmental disorders undergo. I have spent significant time and financial resources seeking a solution, only to be met with the standard medical consensus: these conditions are permanent, incurable, and can only be "managed" through lifelong therapy and medication.

During this journey, watching huge queues in waiting halls of hospitals, I have witnessed the hardship and

heartbreak. We are often told that our children's brains are simply "wired differently." However, my perspective shifted fundamentally. When I came across Dr. Biswaroop Roy Chowdhury's book, *Cure Autism Now*, I found that the author has done significant justice in beautifully narrating the problems faced by the parents of children having neurodevelopmental issues, as well as the possible causes supported by scientific literature and evidence, and providing user-friendly solutions. Written in a language accessible to any educated parent yet rooted in deep biological inquiry, this book became the roadmap I had been searching for. I have started placing my son under the protocol suggested in the book, hoping to witness a significant and visible improvement that no conventional therapy could achieve. This article is my attempt to share my strong belief in the C.A.N. protocol with the scientific community and with parents who are still toiling without hope.

Prevalence and the "Model of Cause"

In the 1970s, Autism was seen in only about 1 in 10,000 children. Today, in parts of the United States, that number is as high as 1 in 31 children, while in India, approximately 1 in 100 children are diagnosed with Autism and 1 in 7 with ADHD. The book argues that this "pandemic" is driven by a "contamination of a newborn's body" via five specific factors, termed the "Model of Cause".

The first major factor is vaccination. While the public is often shielded from the details of vaccine components, the source highlights that children in India are injected with heavy metals like aluminum and mercury (thimerosal) at levels far exceeding safe limits. For instance, while the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) sets toxic aluminum limits at 4-5 mcg per kg of body weight, a single vaccine shot can contain 200-400 mcg.

The second and third factors involve pharmaceutical drugs and dietary stimulants. The frequent administration of antipyretics like paracetamol and antibiotics in early childhood is cited as a major disruptor of the blood-brain barrier and gut microbiome. Simultaneously, the introduction of "excitotoxins" like Monosodium Glutamate (MSG) in fast foods overstimulates brain cells to the point of damage, contributing to seizures and behavioral volatility.

The final factors are animal protein and gluten, which can trigger autoimmune reactions in sensitive children, and electromagnetic fields (EMF). The constant exposure to radiation from mobile phones and Wi-Fi is proposed to interfere with the body's natural electrical balance and compromise the

integrity of the blood-brain barrier.

The Biological Mechanism; The Gut-Brain Axis

To understand why my son—and so many others—responded to the protocol, one must understand the Gut-Brain Axis. As explained in the book, the gut is our "second brain". There is a continuous, two-way communication between our digestive system and our neurological system. When the gut microbiome is imbalanced (dysbiosis), harmful bacteria like *E. coli* can proliferate, leading to "leaky gut" or intestinal permeability.

This permeability allows toxins and undigested proteins to enter the bloodstream. In a healthy child, the blood-brain barrier acts as a filter, protecting the brain. However, factors like heavy metals and EMFs weaken this barrier, allowing toxins to cause neuroinflammation. This inflammation is what we observe as the "symptoms" of Autism or ADHD—social withdrawal, hyperactivity, and speech delays. The book posits that by removing the triggers and healing the gut, we can ease this inflammation and allow true healing to begin.

The C.A.N. Protocol

This section highlights the policies and principles of restoration; the CAN protocol. The C.A.N. Protocol is not a set of "recipes" in the culinary sense, but a strategic biological intervention based on five pillars. As I implemented these for my son, I realized they represent a policy of biological detoxification and circadian alignment.

1. Neem Therapy: The Policy of Detoxification

The protocol begins with the use of Neem (*Azadirachta indica*). The principle here is the restoration of the blood-brain barrier. Neem possesses unique phytochemicals that have been shown to protect neurons and mitigate brain swelling. The policy is to administer a precise dosage based on the child's body weight to facilitate the removal of heavy metals and environmental toxins from the system.

2. The D.I.P. Diet: The Principle of Live Nutrition

The Disciplined & Intelligent Persons' (D.I.P.) Diet is the nutritional cornerstone of the protocol. Its core policy is the total elimination of animal-based products (dairy, meat, eggs) and processed foods, which are seen as primary autoimmune triggers. The dietary principle focuses on Live Enzymes. These enzymes are vital for healing but are destroyed when food is heated above 70°C. Therefore, the protocol

dictates a multi fruit-based breakfast, and a specific "Plate 1 + Plate 2" approach for lunch/dinner in which the child must first consume a calculated amount of raw, enzyme-rich vegetables and fruits in plate-1 before consuming cooked food in plate-2. This ensures that the body receives the "living" nutrients required for cellular repair.

3. Probiotics: Re-establishing the Internal Colony

To correct gut dysbiosis, the protocol mandates the regular intake of fermented probiotic drinks, such as *Ambli*. The policy is to replace harmful bacteria with beneficial ones, thereby improving the gut-brain connection and reducing the "cloudiness" or irritability often seen in these children.

4. Zero Volt Therapy: The Policy of Grounding

Modern children are perpetually "charged" by the electrical environments they live in. The principle of Zero Volt Therapy involves physical contact with the Earth (grounding/earthing). The policy is to discharge the body's excess electrical voltage to zero, which has been shown to reduce neuroinflammation and improve sleep quality significantly.

5. Coconut Fat and the "Follow the Sun" Policy

The final pillar emphasizes the role of healthy plant-based fats, particularly coconut oil, for brain development. Crucially, the protocol advocates for a Circadian Rhythm Policy termed "Follow the Sun". This involves aligning the child's waking, eating, and sleeping cycles with natural sunlight. The principle is that light exposure and meal timing regulate hormonal balance and the body's internal clocks, which are almost always disrupted in children with ASD or ADHD.

A Critique of the "Autism Therapy Industry"

One of the most impactful sections of the book for me was the critique of current standard-of-care practices. The author argues that many common interventions, such as weighted blanket therapy, sensory integration, and speech therapy, are often "pointless" because they address only superficial symptoms while ignoring the underlying neuroinflammation.

The book suggests that an entire industry has developed around these disorders, profiting from the desperation of parents without ever offering a path to a "cure". It was a sobering realization for me: while I was spending a fortune on behavioral therapies, the "Model of Cause" (diet, toxins, radiation) was still active in my son's life, sabotaging any progress. The C.A.N. Protocol provides a way to step out of this

cycle.

Quantifiable Evidences

The book provides compelling evidence through an observational study conducted between August and November 2025, involving 1,000+ children from across the globe, including 889 from India. These children followed the C.A.N. Protocol for an average of 26 days.

The results were remarkable, showing a combined average improvement of 52% across all tracked parameters. The data was categorized into three tiers of symptoms:

- Primary Parameters (44% improvement): Included core issues like eye contact, hand-flipping, hyperactivity, and speech delays.
- Secondary Parameters (46% improvement): Included behavioral challenges like self-injury, persistent tiredness, and demanding behavior.
- Tertiary Parameters (66% improvement): Included physical health issues like constipation, eczema, and sleep disturbances.

Furthermore, 83% of children who were previously on pharmaceutical drugs were able to reduce or completely stop their medications during the study period. These are not just "anecdotes"; they are quantifiable results that challenge the "permanent disability" narrative.

Practical hint

By looking into the therapies and diet plans suggested in Dr. BRC's book, one may initially feel that it is difficult to follow every therapy and every diet plan. This may be due to constraints such as the place where people live, the accessibility of different food items, the availability of ingredients, and the level of acceptance of the therapies and diet plans by the beneficiary.

However, in the case of therapies, one can begin by implementing only those that are simple, practical, and feasible. As confidence and convenience improve, the remaining therapies can gradually be incorporated until the complete protocol is followed. This is the same approach that I have personally practiced.

Similarly, with regard to the diet plans and recipes, the book provides information on a wide variety of recipes and dietary options rather than restricting readers to a single specific plan. Among the many diet plans and recipes presented, there are several that can be easily adopted and followed by people from all walks of life, irrespective of their

circumstances.

Conclusion

After we started following the C.A.N. Protocol, we began noticing gradual and incremental improvements in my son's health. Although the changes have been slow, they have been encouraging, and they have given us renewed hope. With the consultation of the doctor, saying that my son is improving, we cut down on quite some medication, and even after the cut-down, we do not see any increase in the symptoms which we would see earlier. We firmly believe that by following the protocol consistently over a prolonged period, we will witness even better and more meaningful improvements.

My journey through hospitals and therapies led me to a dead end. It was only when I treated my son's condition as a reversible biological event rather than a permanent psychiatric diagnosis that I saw real change. The C.A.N. Protocol is more than a diet or a treatment; it is a philosophy of returning to nature's laws to allow the body to heal itself, irrespective of the cause of a neurodevelopmental disorder.

For every parent reading this who is currently "toiling from pillar to post," please know that there is hope beyond despair. We do not have to be victims of a system that only manages symptoms. By understanding the "Model of Cause" and implementing a rigorous policy of detoxification and nutritional restoration, hopefully we can invite our children back into the mainstream world.

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Concept paper

Description of health as per ayurveda

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Abstract

Health has been a central concern of humanity since antiquity. Among the traditional systems of medicine, Āyurveda presents one of the most comprehensive and holistic concepts of health by integrating physical, physiological, psychological, ethical, and spiritual dimensions of human life. Unlike disease-centred medical systems, Āyurveda emphasizes the preservation of health as its primary objective and the treatment of disease as its secondary objective.

The present paper examines the classical Ayurvedic concept of health through an analysis of its foundational definition, physiological principles, disease causation, therapeutic approaches, and preventive strategies. It also explores the relevance of these principles to contemporary healthcare. The study is based on an analytical review of the principal Ayurvedic classics, namely the Carakasaṁhitā, Suśrutasamhitā, and Aṣṭāṅgasaṅgraha, together with standard commentaries and selected contemporary literature on Ayurvedic medicine. Classical Ayurvedic literature defines health as the harmonious equilibrium of the doṣas, agni, dhātus, and malas, accompanied by mental, sensory, and spiritual well-being. The concepts of tridoṣa, Ṣaṭkriyākāla, Śodhana, Śamana, and Pañcakarma collectively constitute a systematic framework for disease prevention, diagnosis, and treatment.

The Ayurvedic concept of health extends beyond the absence of disease and presents a comprehensive model of holistic well-being. Its preventive orientation and individualized therapeutic approach continue to provide valuable insights for contemporary integrative and lifestyle medicine.

Keywords: Āyurveda; Health; Tridoṣa; Agni; Pañcakarma; Ṣaṭkriyākāla; Preventive Medicine; Indian Knowledge Systems

Introduction

Health is universally recognized as one of the most valuable assets of human life. The quality of life enjoyed by an individual depends largely upon physical vitality, mental stability, emotional balance, ethical conduct, and harmonious interaction with the

surrounding environment. Modern medicine has achieved remarkable success in diagnosing and treating numerous diseases; however, the increasing global prevalence of lifestyle disorders, metabolic diseases, psychological stress, and environmental health challenges has renewed interest in holistic systems of healthcare.

Among the world's traditional systems of medicine, Āyurveda occupies a unique position because it views health as a dynamic state of equilibrium rather than merely the absence of disease. The term Āyurveda is derived from the Sanskrit words *āyus* (life) and *veda* (knowledge), literally meaning "the science of life." Its scope extends beyond disease management to include the preservation and promotion of physical, mental, social, ethical, and spiritual well-being.

The philosophical foundations of Āyurveda are deeply rooted in the broader framework of Indian Knowledge Systems. While Yoga primarily addresses the discipline of the body and mind, Vedānta explores the nature of consciousness and ultimate reality. Āyurveda complements these traditions by providing practical principles for maintaining bodily health and preventing disease. Together, these three disciplines offer a comprehensive vision of human well-being in which physical health supports mental clarity, and both contribute to spiritual development.

One of the distinguishing features of Āyurveda is its preventive orientation. The classical texts consistently emphasize that preserving the health of healthy individuals (*svasthasya svāsthyarakṣaṇam*) is the foremost objective of medical science, whereas the treatment of disease (*āturasya vikārapraśamanam*) is considered its subsequent responsibility. This preventive philosophy has gained renewed importance in the context of modern public health, where lifestyle-related diseases account for a substantial proportion of global morbidity and mortality.

Unlike reductionist approaches that examine individual organs or isolated pathological processes, Āyurveda understands the human organism as an integrated whole. Health depends upon the harmonious interaction of physiological functions, digestive and metabolic processes, bodily tissues, excretory mechanisms, sensory faculties, mental balance, and spiritual awareness. Disease arises when this equilibrium is disturbed through improper diet, unhealthy lifestyle, environmental influences, psychological factors, or the natural processes of ageing.

The classical Ayurvedic literature presents a remarkably systematic explanation of the origin, progression, prevention, and management of disease. Concepts such as tridoṣa, agni, dhātu, mala, and Ṣaṭkriyākāla provide an integrated physiological and pathological framework that has guided Ayurvedic practice for centuries. Therapeutic approaches including Śodhana Cikitsā, Śamana Cikitsā, and Pañcakarma are designed not only to alleviate disease but also to restore physiological balance and enhance the body's inherent capacity for self-regulation.

In recent decades, there has been growing international interest in integrative medicine, preventive healthcare, and personalized medical approaches. Many of these emerging perspectives resonate with the classical principles of Āyurveda, particularly its emphasis on individualized constitution (*prakṛti*), preventive care, dietary regulation, and healthy lifestyle practices. Consequently, the Ayurvedic concept of health has acquired renewed relevance in contemporary discussions on sustainable healthcare and holistic medicine.

प्रयोजनं चास्य स्वस्थस्य स्वास्थ्यरक्षणम् आतुरस्य
विकारप्रशमनं च।

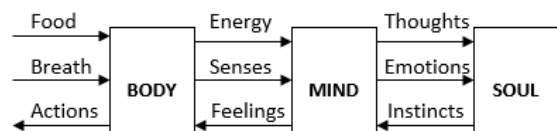
*prayojanam cāsyā svasthasya svāsthyarakṣaṇam
āturasya vikārapraśamanam ca.*

Carakaśaṃhitā, Sūtrasthāna 30.26

The purpose of this (Āyurveda) is the preservation of the health of the healthy and the alleviation of the disorders of the diseased. The objective of this paper is to examine the classical Ayurvedic concept of health by analysing its foundational definition, physiological principles, disease causation, therapeutic framework, and contemporary relevance.

Concept of Health in Āyurveda

The human body requires good food, the human mind requires good company and the human soul requires good vibrations. The inputs and outputs of the human system are indicated in the diagram shown below



Thus, the concept of health will have 3 domains namely – physical, mental and spiritual. Further, Āyurveda presents a multidimensional understanding that encompasses:

- physical,
- physiological,
- psychological,
- sensory,
- ethical, and
- spiritual well-being.

In the Indian Knowledge Systems, the specialized philosophical branches named as AyurvEda, yoga and vEdAntha, correspond to these 3 domains. As physical health is the one that requires immediate

attention, let us explore AyurVeda for the suitable definitions of health, along with the advices provided for the maintenance of one's health.

Definition of health as per Ayurveda

There are 6 main text books of Ayurveda classified into two groups:

Bṛhatrayī (The Great Trilogy)

- Carakasamhitā
- Suśrutasaṃhitā
- Aṣṭāṅgasaṅgraha (or *Aṣṭāṅgahr̥daya*, depending on the textual tradition adopted)

Laghutrayī (The Lesser Trilogy)

- Mādhavanidāna
- Bhāvaprakāśa
- Śārṅgadharasaṃhitā

Among these classical works, the Suśrutasaṃhitā provides the most widely accepted definition of health is as follows:

समदोषः समाग्निश्च समधातुमलक्रियः ।
प्रसन्नात्मेन्द्रियमनः स्वस्थ इत्यभिधीयते ॥
samadoṣaḥ samāgniś ca samadhātu-malakriyaḥ |
prasannātmendriya-manah svastha ity abhidhīyate ||

सुश्रुत संहिता (सूत्रस्थान १५/१०)

This means that when the three doṣas (vāta, pitta, and kapha), the digestive fire (agni), the seven bodily tissues (rasa, rakta, māṃsa, medas, asthi, majjā, and śukra), and the excretory functions (mala-kriyā) are in equilibrium, and when the ātman (self), indriyas (sense organs), and manas (mind) are in a state of tranquillity, the individual is said to be in a healthy state (svastha). Another definition of health is found in the Aṣṭāṅgasaṅgraha.as follows:

नित्यं हिताहार-विहार-सेवी समीक्ष्यकारी विषयेष्वसक्तः ।
दाता समः सत्यपरः क्षमावान् आप्तोपसेवी च भवत्यरोगी ॥
nityaṃ hitāhāra-vihāra-sevī samikṣyakārī viṣayeṣv asaktaḥ |
dātā samaḥ satyaparaḥ kṣamāvān āptopasevī ca bhavaty arogī ||

अष्टाङ्गसंग्रहः सूत्रस्थानम् अध्याय ५-६३

The one who daily consumes healthy food, enjoys outside regimen, is thoughtful in his actions, not involved in the sensory affairs, generous, just, truthful, forgiving, who takes care of close ones – such person remains unaffected by disease. In charakasamhithA, the following verse mentions about the importance of food:

आहारसम्भवं वस्तु रोगश्चाहारसम्भवः ।
हिताहितविशेषान् विशेषः सुखदुःखयोः ॥

āhārasambhavaṃ vastu rogaś cāhārasambhavaḥ |
hitāhitaviśeṣāt tu viśeṣaḥ sukhaduḥkhaḥ ||

Carakasamhitā, 28.45

Food gets formed by matter, and disease gets formed by food. Hence, comfort-discomfort caused by food is more important than the pleasant-unpleasant nature of food. As per the principles of Ayurveda, the bodies - the bodily portions - the age groups - the timings of the day - the natural seasons: all these can be classified into 3 basic humors named as vāta, pitta and kapha. Vāta means air driven (vāyu), pitta means heat driven (agni), and kapha means water driven (jala).

Humor (dosha)	vāta (airy)	piththa (warm)	kapha (cold)
Portions of the body	Abdomen	Stomach	Chest
Stage of life	Old age	Adult-hood	Child-hood
Seasonal predominance	Rainy season (aggrava-tion), autumn (manifestation) [varies by classical text]	Autumn	Late winter and spring
Main physiological function	Movement, circulation, respiration	Metabolism, digestion, regulation of body heat	Structural stability, lubrication, immunity
Food that causes increase in humor	Pungent, astringent, bitter	Sour, salty, pungent	Sweet, Sour, salty
Typical aggravating factors	Irregular meals, fasting, anxiety, excessive travel, sleep deprivation	Hot, spicy foods, alcohol, anger, excessive heat	Overeating, excessive sleep, inactivity, heavy foods
Lifestyle issues that cause increase in humor	Dry foods, stale foods, excessive travel, excessive workout, eating often, fasting, indiscipline, worry, fear, quarrel	Fried foods, excessive stress, unsystematic food consumption, indigestion, toxic drugs, alcoholism, fatigue, anger, envy	Cold conditions, Fatty foods, excessive sweets, excessive salt, roasted foods, laziness, doubt, avarice, cruelty
Sickness due to excessive increase in humor	Body pain, weakness, stiffness, cataract, light stroke	Burning sensations, skin issues, acidity, jaundice, foul smell	Phlegm, heaviness, insomnia, lack of hunger, obesity

Prakṛti: Constitutional Types

The relative predominance of the three doṣas gives rise to seven constitutional types (*prakṛti*):

1. Vāta-prakṛti
2. Pitta-prakṛti
3. Kapha-prakṛti

4. Vāta–Pitta–prakṛti
5. Pitta–Kapha–prakṛti
6. Vāta–Kapha–prakṛti
7. Sama–prakṛti (balanced constitution)

Individuals with sama–prakṛti, in whom the three doṣas remain in equilibrium, are considered to possess the most stable physiological constitution. However, this constitutional type is relatively uncommon, and most individuals exhibit one or two dominant doṣas.

The understanding of prakṛti forms the basis of personalized medicine in Āyurveda, influencing dietary recommendations, lifestyle practices, preventive measures, and therapeutic interventions

The humors of the body can be verified by an experienced vaidya, by checking the beats of the 3 pulses at the wrist of the person (right wrist for male, and left wrist for female).

A perfectly healthy human body is the seventh one, in which all 3 humors are in equal proportion, with uniform beats; but it is seldom the case.

In general, a person will have a particular type of body by birth itself. In addition, as the last three rows in the table indicate, the body will undergo changes in the humors, based on the quality of food that is consumed, and on the other lifestyle related issues. In this way, a particular humor can increase, by suppressing the other two; such condition is called as “vrddhi”. Later, it may increase beyond a limit, and will become aggressive, causing disease; that condition is called as “prakopa”. Hence, suitable therapy is required to handle both of these cases.

Reasons for diseases as per Ayurveda

Āyurveda explains that disease arises when the equilibrium of the doṣas is disturbed by inappropriate interactions between the individual and the internal or external environment. The classical texts identify four principal categories of disease causation.

Ābhyantara (Internal Causes)

These include disturbances arising within the body, such as impaired digestion (*agnimāndya*), accumulation of āma, hereditary predisposition, and physiological imbalances.

Āgantuka (External Causes)

These include trauma, infections, environmental toxins, accidents, poisonous substances, and other external factors that disturb physiological equilibrium.

Mānasa (Psychological Causes)

Mental disturbances such as excessive anger, grief, fear, anxiety, jealousy, attachment, and emotional stress adversely affect both the mind and body,

contributing to disease.

Svābhāvika (Natural Causes)

Certain conditions arise naturally through ageing, hunger, thirst, sleep, and the inevitable processes of biological ageing. These are regarded as natural phenomena rather than pathological abnormalities.

Improper Utilization of the Faculties

Āyurveda further classifies disease causation according to the manner in which the body and senses are used.

- Atiyoga — excessive utilization
- Hīnayoga — inadequate utilization
- Mithyāyoga — improper utilization

The appropriate and balanced utilization of all bodily faculties is known as Samyagyoga, which promotes health and prevents disease

In order not to have diseases, one should involve in the right usage of organs, which is called as samyagyoga.

The sequence in which excessive humors turn into diseases is mentioned in the following beautiful verse in Suśrutasamhitā:

सञ्चयं च प्रकोपं च प्रसारं स्थानसंश्रयम् ।
व्यक्तिं भेदं च यो वेति दोषाणां स भवेद्भिषक्॥
sañcayam ca prakopam ca prasaram
sthānasamśrayam |
vyaktim bhedam ca yo veti doṣāṇām sa bhaved
bhiṣak ||

सुश्रुत संहिता (सूत्रस्थान २१)

The humors in excess get accumulated in specific parts of the body (vāta in large intestine, pitta in small intestine, kapha in stomach), then they become aggressive if ignored, and they travel to other parts of the body, get settled in selected parts (vāta in joints, pitta in blood, kapha in lymphatic system), then get manifested as diseases, and finally they affect the functioning of the organs. This is called as Ṣaṭkriyākāla (6 durations of the humors), and the one who fully comprehends this, is called as a physician. If all the 3 humors become aggressive, then all the 3 pulses will be beating heavily, and such condition is called as Sannipāta; this is a serious condition, which requires immediate treatment.

Disease progression

One of the most distinctive contributions of Āyurveda to medical science is its concept of Ṣaṭkriyākāla, which explains that disease develops gradually through six recognizable stages. This framework enables early diagnosis and timely intervention before a disease becomes clinically established.

Table 2. Śaṭkriyākāla: Six Stages of Disease Progression

Stage	Sanskrit	Clinical Significance
I	Sañcaya	Accumulation of a doṣa in its natural site
II	Prakopa	Aggravation due to continued causative factors
III	Prasāra	Spread of the aggravated doṣa throughout the body
IV	Sthāna-saṁśraya	Localization in susceptible tissues (<i>kṛavaiḡṇya</i>)
V	Vyakti	Manifestation of recognizable clinical symptoms
VI	Bheda	Differentiation into specific disease entities with possible complications

The doctrine of Śaṭkriyākāla illustrates the preventive orientation of Āyurveda. Rather than waiting for overt disease to develop, the physician is encouraged to identify early physiological disturbances and institute appropriate dietary, behavioural, or therapeutic measures. This proactive approach aligns closely with modern concepts of preventive medicine and risk reduction.

Therapeutic Principles in Āyurveda

The primary objective of Ayurvedic therapeutics is the restoration and maintenance of physiological equilibrium. Since disease arises from the imbalance of the doṣas, impairment of agni, derangement of the dhātus, and improper elimination of the malas, treatment aims to re-establish harmony among these fundamental components of health.

Classical Āyurveda adopts an individualized approach to therapy. The selection of treatment depends upon several factors, including the patient's constitutional type (*prakṛti*), pathological condition (*vikṛti*), age, physical strength (*bala*), digestive capacity (*agni*), season (*ṛtu*), and the stage of disease (*Śaṭkriyākāla*). Consequently, treatment is tailored to the individual rather than directed solely at the disease.

Therapeutic interventions are broadly classified into two principal approaches:

- Śodhana Cikitsā (eliminative or bio-purificatory therapy)
- Śamana Cikitsā (pacification or palliative therapy)

These two therapeutic modalities complement each other and are selected according to the patient's condition.

Śodhana Cikitsā (Bio-purificatory Therapy)

Śodhana Cikitsā is intended to eliminate aggravated doṣas from the body through specific purification procedures. Unlike symptomatic treatment, Śodhana addresses the underlying pathological imbalance and is therefore regarded as a radical or definitive therapeutic approach in classical Āyurveda.

The principal purification procedures are collectively known as Pañcakarma.

Pañcakarma

The term Pañcakarma literally means "five therapeutic procedures." Each procedure is intended for specific pathological conditions and is selected according to the predominant doṣa involved.

Procedure	Primary Indication	Therapeutic Objective
Vamana	Kapha disorders	Therapeutic emesis
Virecana	Pitta disorders	Therapeutic purgation
Vasti	Vāta disorders	Medicated enema
Nasya	Disorders above the clavicle	Nasal administration of medicines
Raktamokṣaṇa	Disorders involving vitiated blood (<i>rakta</i>)	Therapeutic bloodletting

Among these procedures, Vasti is traditionally regarded as the most effective therapy for disorders of vāta, owing to the central role of vāta in regulating bodily functions.

Preparatory Procedures (Pūrvakarma)

Before administering the principal purification therapies, the patient undergoes preparatory procedures collectively known as Pūrvakarma. Their purpose is to mobilize aggravated doṣas from peripheral tissues toward the gastrointestinal tract, where they can be effectively eliminated.

Snehana (Oleation Therapy)

Snehana involves lubrication of the body through medicated oils or ghee.

It is of two types:

- Ābhyantara Snehana (internal oleation through oral administration of medicated ghee or oil)
- Bāhya Snehana (external oleation through therapeutic massage)

Snehana softens tissues, facilitates the movement of aggravated doṣas, improves flexibility, and prepares the body for purification.

When oleation is contraindicated, Udvartana, a dry massage using herbal powders, may be employed. Udvartana is particularly beneficial in disorders associated with excessive kapha, obesity, and impaired circulation.

Svedana (Sudation Therapy)

Following Snehana, Svedana (sudation therapy) is administered to induce perspiration. Steam, heat, or other suitable methods are employed to dilate the body channels (*srotas*), liquefy aggravated doṣas, and facilitate their movement toward the gastrointestinal tract.

The combined application of Snehana and Svedana enhances the effectiveness of the subsequent purification procedures.

Śamana Cikitsā (Pacification Therapy)

Not all patients are suitable candidates for eliminative therapies. In elderly individuals, children, debilitated patients, or those with mild disease, Śamana Cikitsā is preferred.

Rather than eliminating aggravated doṣas, Śamana gradually restores physiological balance through diet, lifestyle regulation, herbal formulations, and supportive therapies.

Two important therapeutic procedures are:

Dīpana

Dīpana stimulates the digestive fire (*agni*), thereby improving appetite and enhancing digestive efficiency.

Pācana

Pācana promotes the digestion and elimination of āma (metabolic toxins) without necessarily increasing appetite. It restores normal metabolism and prepares the body for further therapeutic interventions when required.

These therapies are often administered before Śodhana to improve digestive capacity and optimize therapeutic outcomes.

Post-Therapeutic Care (Paścātkarma)

Successful therapy extends beyond the elimination of aggravated doṣas. Following the principal purification procedures, the patient undergoes Paścātkarma, the post-treatment phase.

The most important component of Paścātkarma is Saṁsarjana Krama, a graduated dietary regimen in which light, easily digestible foods are introduced progressively until normal digestion is restored.

This gradual transition prevents digestive overload, protects the weakened agni, and supports tissue recovery following detoxification.

Rejuvenation and Health Promotion

After the restoration of physiological equilibrium, Āyurveda recommends rejuvenative therapies to maintain health and prevent recurrence of disease.

Rasāyana

Rasāyana comprises rejuvenative measures intended to promote longevity, improve immunity, enhance tissue nutrition, preserve cognitive function, and delay the ageing process.

Vājīkaraṇa

Vājīkaraṇa focuses on reproductive health, vitality, physical strength, fertility, and overall quality of life. Classical texts regard it as an important branch of

Āyurvedic therapeutics for promoting healthy progeny and sustaining vitality.

Table 3. Major therapeutic procedures in Āyurveda

Category	Procedure	Purpose
Preparatory	Snehana	Oleation and mobilization of doṣas
	Svedana	Sudation and channel dilation
	Udvardhana	Dry powder massage
Purificatory	Vamana	Elimination of kapha
	Virecana	Elimination of pitta
	Vasti	Elimination and regulation of vāta
	Nasya	Therapy for diseases of the head and neck
	Rakta-mokṣaṇa	Elimination of vitiated blood
Pacification	Dīpana	Enhancement of digestive fire
	Pācana	Digestion of āma
Post-treatment	Saṁsarjana Krama	Restoration of digestive capacity
Rejuvenation	Rasāyana	Promotion of longevity and immunity
	Vājīkaraṇa	Promotion of vitality and reproductive health

Therapy as per Āyurveda

To remove the aggravated humors from the body, Āyurveda prescribes a set of detoxifying therapies called Śodhana, which comprises five methods called Vamana, Virecana, Basti, Nasya, and Raktamokṣaṇa – hence collectively called Pañcakarma Cikitsā. All the five need not be conducted together, as their purpose is different, and hence are independent of each other. Vamana is the induced vomiting to cleanse the stomach and Virecana is the induced diarrhea to cleanse the small intestine. Basti is process of cleansing the large intestine by means of either herbal decoction or medicated oil / ghee / milk. Nasya is the instilling of medicated oil / ghee into the nostrils, for cleansing them as well as to increase the blood circulation at the head region. Raktamokṣaṇa is the removal of bad quality blood that is accumulated at some parts of the body.

To enhance Pañcakarma, there are some preparatory procedures (Pūrvakarma), such as Snehana and Svedana. Snehana can be internal, when medicated ghee / oil is consumed, and can be external, when the body is massaged using medicated oil. Due to any medical reason, if the person's body is unsuitable for oil massage, then medicinal powder's massage called Udvardhana, is administered. Svedana is the process of induced sweating, either by means of physical exercise or by exposure to steam, through which toxins get expelled out of the skin surface. These preparatory procedures help the person in having a safe detoxification.

Śodhana is performed when the person is having enough stamina to undergo the procedures, and the therapy will be quite effective in the removal of aggravated humors. But if the person is physically weak to face these therapies, then detoxification is performed by alternative procedures, by inducing digestion (*Dīpana*) and by increasing digestion (*Pācana*); these two are together called *Śamana*. Most of the times, these are performed to the strong person as well, as a preliminary action to *Pūrvakarma*, to enhance the digestion of medicated ghee / oil.

After the main procedure (*Pradhānakarma*) of *Śodhana* is completed, the concluding procedure (*Paścātkarma*) is called *Samśarjana*; which is the strengthening of the weakened body, by slowly introducing the normal food style, after administering easily digestible food varieties for a few days. Thus, in total, the detoxification therapy contains multiple procedures, and can be conducted for a minimum of 5 days or for a maximum of 18 days. During the therapy, as the food regimen gets prescribed by the *vaidya*, the body will have less work on the digestion and metabolism, and hence, the blood cells release the toxins that are inside, into the interstitial fluid, which later gets released into the blood stream, which later on gets its way into the gastrointestinal tract, which finally gets expelled out of the body.

Thus, Ayurveda advises and offers a wise and unique maintenance methodology for the human body, for regaining physical health, which is summarized in the following table:

Table. 4 Therapeutic Terminologies in Āyurveda

Therapeutic Terminology	Description
<i>Snehana</i> (<i>Snehana</i>)	Oleation therapy through external oil massage or internal administration of medicated ghee or oil
<i>Svedana</i> (<i>Svedana</i>)	Sudation therapy by inducing perspiration through steam or other heating methods
<i>Udvaartana</i> (<i>Udvaartana</i>)	Therapeutic massage using medicated herbal powders
<i>Lañghana</i> (<i>Lañghana</i>) (Reducing or lightening therapy)	<i>Śodhana</i> (<i>Śodhana</i>) (Elimination of vitiated <i>doṣas</i> from the body) Pañcakarma procedures: <i>Vamana</i> , <i>Virecana</i> , <i>Vasti</i> , <i>Nasya</i> , and <i>Raktamokṣaṇa</i> <i>Śamana</i> (<i>Śamana</i>) (Pacification of vitiated <i>doṣas</i> within the body) <i>Dīpana</i> (stimulation of digestive fire) and <i>Pācana</i> (digestion of <i>āma</i> and enhancement of metabolism)
<i>Samśarjana</i> <i>Krama</i> (<i>Samśarjana Krama</i>)	Graduated dietary regimen followed after <i>Śodhana</i> therapy to restore digestive capacity
	<i>Rasāyana</i> (<i>Rasāyana</i>)

<i>Br̥mhaṇa</i> (<i>Br̥mhaṇa</i>) (Nourishing and strengthening therapy)	Rejuvenation therapy that promotes nourishment, immunity, longevity, and tissue regeneration
	<i>Vājikaraṇa</i> (<i>Vājikaraṇa</i>) Therapy for promoting vitality, reproductive health, fertility, and physical strength

Contemporary Relevance of the Ayurvedic Concept of Health

The holistic concept of health described in *Āyurveda* remains highly relevant in the twenty-first century. The increasing prevalence of lifestyle disorders, obesity, diabetes mellitus, hypertension, cardiovascular diseases, mental stress, and sleep disorders has highlighted the limitations of approaches that focus primarily on disease management rather than disease prevention.

The Ayurvedic emphasis on balanced nutrition, regular daily and seasonal regimens (*dinacaryā* and *ṛtucaryā*), physical activity, mental discipline, and individualized healthcare aligns closely with several principles of preventive medicine and lifestyle medicine. Furthermore, the concept of *prakṛti* anticipates aspects of personalized healthcare by recognizing constitutional diversity among individuals.

Although Ayurvedic concepts employ a distinct philosophical and physiological framework, many of their practical recommendations—such as moderation in diet, maintenance of digestive health, regular exercise, adequate sleep, stress management, and seasonal adaptation—are increasingly supported by contemporary research in public health and behavioural medicine. These shared principles provide opportunities for constructive dialogue between traditional knowledge systems and modern biomedical sciences.

Consequently, the Ayurvedic concept of health may be viewed not merely as a historical medical doctrine but as a comprehensive framework for promoting long-term health, resilience, and quality of life.

Conclusion

Since millenniums, through the seers, the knowledge of *Āyurveda* is transferred to the human generation. *Āyurveda* presents a comprehensive and integrated concept of health that extends beyond the absence of disease. According to the classical definition of the *Suśrutasamhitā*, health is achieved through the equilibrium of the *doṣas*, *agni*, *dhātus*, and *malas*, together with the harmonious functioning of the mind (*manas*), sense faculties (*indriyas*), and self (*ātman*). This multidimensional understanding recognizes health as a dynamic state of physical,

physiological, psychological, ethical, and spiritual well-being.

The present study has examined the classical Ayurvedic concept of health by exploring its physiological foundations, the doctrine of Tridoṣa, the causes and stages of disease development, and the therapeutic principles of Śodhana, Śamana, and Pañcakarma. The concept of Śaṭkriyākāla demonstrates the preventive orientation of Āyurveda by emphasizing the recognition and management of disease during its earliest stages.

A defining feature of Āyurveda is its commitment to preserving health before treating disease. This objective is reflected in the classical maxim:

स्वस्थस्य स्वास्थ्यरक्षणम् आतुरस्य विकारप्रशमनम् च
svasthasya svāsthyarakṣaṇam āturasya
vikārapraśamanam ca

चरक संहिता (सूत्रस्थान 30.26)

"To preserve the health of the healthy and to alleviate the disorders of the diseased." This guiding principle is supported through daily and seasonal regimens, ethical conduct, dietary discipline, and individualized therapeutic interventions aimed at sustaining physiological balance throughout life.

In an era characterized by increasing lifestyle-related disorders and growing interest in integrative healthcare, the Ayurvedic concept of health offers a valuable perspective that complements contemporary approaches to disease prevention and health promotion. While its theoretical framework differs from that of modern biomedicine, its emphasis on individualized care, preventive strategies, and holistic well-being continues to inspire research and clinical practice. Thus, the classical principles of Āyurveda remain relevant not only as a part of India's intellectual heritage but also as a meaningful contribution to the global discourse on sustainable and person-centred healthcare. The health enthusiast is expected to study them and follow them, in order to remain disease-free.

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Perspective

Restoring Vyādhi-Kṣamatva: Ayurveda's Timeless Blueprint for Immunity and Epidemic Resilience

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Abstract

While modern medicine has made remarkable strides in acute care, its siloed approach often struggles with the complex, multi-factorial nature of non-communicable diseases and epidemic vulnerability. India's ancient medical heritage, however, offers a profoundly holistic concept of immunity—Vyādhi-Kṣamatva—which transcends the narrow biomedical model of antibodies. This paper explores the Ayurvedic framework for building unassailable immunity not through isolated supplements, but through a meticulously designed daily (Dinacaryā) and seasonal (R̥tucaryā) regimen. By analysing classical injunctions from the Caraka Saṁhitā and aligning them with modern chronobiology and environmental medicine, we argue that the strategic re-integration of these practices is the single most critical public health intervention we can offer a generation untethered from natural rhythms. This is not nostalgia; it is a restorative and deeply scientific return to a biodynamic way of living that holds the key to both personal wellness and societal resilience.

Keywords: Vyādhi-Kṣamatva, Dinacaryā, R̥tucaryā,

Introduction

The global crisis of the recent pandemic exposed a painful truth: a nation's health security cannot rest solely on pathogen-targeted therapies. True defence lies in the host's terrain. In the race to boost 'immunity,' the market was flooded with isolated vitamins, zinc tablets, and instant decoctions, creating a reactive culture of panic-driven supplementation. Ayurveda dismisses such fragmentary approaches. For the Ācāryas, immunity (Vyādhi-Kṣamatva, literally "the capacity to resist disease") is not a single biochemical entity to be topped up. It is an emergent property of a balanced

ecosystem within the body—a symphony where digestive fire (Agni), tissue integrity (Sāra), mental equanimity (Sattva), and synchronicity with the macrocosm all play indispensable parts.

Caraka defines the purpose of medicine entirely around preserving this equilibrium: "Svāsthya rakṣaṇam, āturya vikāra prasamanam"—first, protect the health of the healthy, then cure the diseased. This makes preventive, rhythmic living not an alternative hobby but the very bedrock of Ayurveda. The key strategic article today, therefore, must shift the discourse from searching for a magic immunity pill to embracing the profound wisdom of

Rtucaryā and *Dinacaryā*, protocols designed to prevent the vitiation of *Doṣas* long before a pathogen can colonise a weakened host.

Dinacaryā; the Circadian Hygiene as the First Vaccine

Modern science has just begun validating what our sages encoded millennia ago: the presence of a master biological clock. Chronobiologists have won Nobel Prizes for discovering molecular mechanisms of the circadian rhythm, yet the average Indian wakes to a jarring alarm, skips the crucial morning window, and eats dinner long after the sun's metabolic signal has waned. *Caraka Saṁhitā* Sūtrasthāna warns that habits contrary to nature's rhythm (*Prajñāparādha*) are the root cause of all epidemic and metabolic disease.

The *Dinacaryā* is a strategic, time-bound protocol for immunity engineering. The day begins with *Brahma Mubūrta* (approximately 48 minutes before sunrise). Rising at this time isn't a ritualistic superstition; it is a deliberate exposure to the charged, oxygen-rich atmosphere where the *Vāta* quality is light and mobile, facilitating complete bowel evacuation and mental clarity. This single practice sets off a cascade of neuro-endocrine benefits, balancing cortisol and serotonin naturally.

This is followed by a sequence of rituals that modern wellness has repackaged in isolation: tongue scraping (*Jihvā Nirlekhanam*) detoxifies the gustatory organ and prevents the reabsorption of overnight metabolic waste (*Āma*). Oil pulling (*Gandūṣa*) strengthens the oral mucosa and gums, acting as a primary barrier against airborne pathogens. *Abhyaṅga* (self-oil massage) before bathing is not just a luxury; it pacifies systemic *Vāta*, mobilises lymphatic drainage, and nourishes the peripheral tissues, directly contributing to *Bala* (strength) and *Ojas* (the vital essence of immunity). When an individual commits to this one-hour daily investment, they are not merely 'cleaning up'—they are systematically removing the fertile ground (*Duṣya*) upon which disease thrives. This is the most profound and cost-effective public health strategy a nation can adopt.

Rtucaryā; the micro-cycles

If *Dinacaryā* handles the micro-cycles of the day, *Rtucaryā* governs the macro-cycles of the year—and its neglect is the primary driver of epidemic transitions. The Indian subcontinent traditionally observes six seasons, each a distinct interaction of solar radiation, wind direction, and ecological change, which in turn directly modulate the body's

Doṣas. The transition between seasons (*Rtusandhi*), when the body is in a fragile state of adjustment, is identified in Ayurveda as the period of highest disease risk. The wise, therefore, gradually taper the regimen of the outgoing season and adopt the incoming one over a two-week window.

Consider the *Śarada* (autumn) season, a time of high Pitta and the season typically associated with viral outbreaks. *Caraka* prescribes specific foods: sweet, light, bitter, and cold to pacify the accumulated heat of the monsoons. He recommends eating only when the previous meal is fully digested, and consuming clarified butter (*Ghṛta*) medicated with bitter herbs to fortify the blood and skin—the seat of *Bhrajaka Pitta*, which governs the skin's immune barrier. Furthermore, the classical recommendation to observe a moderate harvest moon fast and wear garlands of purifying pearls or cooling flowers is not poetic whimsy; it is a psycho-somatic intervention. Cold-water bathing, moon-bathing at night, and the deliberate consumption of *śali* rice and moong beans create an internal environment so cool and resilient that the *Pitta*-aggravated pathogens of the season fail to colonise.

In stark contrast, the modern urbanite continues consuming the same refrigerated drinks, cold salads, and heavy non-vegetarian fare across all seasons, completely disregarding the *Agni*'s seasonal flux. By reviving *Rtucaryā* as an educational module in homes and schools, we equip communities with a dynamic, predictive health tool. The Ayurvedic axiom "*Rakṣet Kaleva kāleṣu*"—protect health by observing time-bound conduct—becomes the most scientific shield against seasonal epidemics.

The Inner Dimension

No discussion of immunity is complete without addressing the subtle body. Ayurveda proposes a fascinating model where physical strength (*Bala*), immunity (*Vyādhi-Kṣamatva*), and spiritual vitality are all downstream products of a supreme essence called *Ojas*. This *Ojas* is the final, refined nectar of all bodily tissues, and it is rapidly depleted not only by physical disease but also by negative mental states like worry, anger, grief, and excessive talking—causes modern medicine is only now recognising as chronic low-grade inflammation.

The classical texts state unambiguously: "*Viśeṣādasattvavataḥ... vyādhayaḥ*" — those who are mentally strong resist disease. The pathway to such strength lies in the cultivation of *Sattva*, the quality of clarity, compassion, and restraint. The *Ācāryas* thus prescribed a diet and lifestyle of *Sāttvic* conduct: truthfulness, non-violence, regulated sexual activity,

and the daily practice of *Yoga Nidrā* or meditation (*Dhyāna*). In the context of an epidemic, fear alone can induce a state of *Śoka* (grief) and *Bhaya* (fear), vitiating *Vāta* and rapidly incinerating *Ojas*. A society armed with the tools of *Prāṇāyāma* and meditative introspection possesses an immunological armour that no external pathogen can easily breach. The strategic revival of this inner dimension is perhaps the most urgent cultural reformation we need—an entire populace shifting from anxiety-driven reactivity to a calm, *Ojas*-preserving resilience.

A Strategic Call for Integration

The profound tragedy of the 21st century is that the nation which gave the world the science of life is seeing its citizens suffer from the very diseases its systems could prevent, simply due to a colonially induced amnesia. The resistance we often face—that *Dinacaryā* and *Rtucaryā* are impractical or time-consuming—is a failure of strategic communication, not a failure of the science itself. The pandemic taught us that health systems can collapse overnight, but personal and community immunity cannot. Re-learning to live in alignment with the *Kāla* (time) and *Deśa* (environment) is the most empowering, democratic, and decentralised form of health security available to humanity.

Therefore, the crucial article for this age is not a complex treatise on obscure herbal formulations, but a clarion call to revive the very rudimentary, non-negotiable daily and seasonal codes of conduct. These are the strategic tools that make medicine ‘preventive’ in its truest sense.

Conclusion

It’s time to re-establish Indian culture for a stronger nation, and the message worth passing here is; “Immunity is not bought in a bottle; it is cultivated every morning at sunrise, in a fragrant oil bath, in a conscious meal, and in the quiet, unwavering stillness of a Sāttvic mind.” Rebuilding this foundational health architecture is the greatest patriotic and spiritual service we can render to the coming generations.

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Vedashāla: A Gurukula for Astronomy is reinventing Jantar Mantar

Bhārati Yoga Dhāma's Vedashāla



A gurukula specialized in astronomy

Gurukulas are learning and experience centres which give wholesome education. The major outcomes are multi-skilled responsible personalities. Apart from being multi-skilled, most gurukulas are specialized in a particular area. One such Gurukula is the Bhārati Yoga Dhāma (BYD) of Mysore of Karnataka, India with children specializing in Astronomy.

The brains behind the Gurukula

The unique Gurukula is headed by Dr. K L Shankaranarayana Jois; found BYD in 2000 who has a true insight of original Indian Arts and Sciences. Along with him is his wife and Founding Trustee Smt. Vijaya Jois G and a team of other trustees of BYD Sri. Jagadeesha Sharma, Sri. Panduranga, Sri. Ganapathi Bhat, Sri. Srinivasa Bhat Sri. Madhukeshwara Hegde and Sri. Adarsha U J. Supported by scientists from various institutes has taken up the ambitious gurukula for Astronomy.



Reinventing Jantar Mantar

One of the prestigious projects of BYD is the Vedashāla, which essentially here refers to Jantar Mantar (JM). JM is a complex of a variety of Astronomical instruments, earlier developed by Savai Jaisingh in 1724-1735 CE. These are amazing stone-civil engineering structures built to do a variety of measurements and observations of celestial bodies, like determining local time, finding altitude and azimuth of celestial bodies, tracking sun's path and zodiac, predicting solar and lunar eclipses etc. Amazing thing is that these instruments which are available in North India in five places, built centuries back, are now being reinvented at BYD.

It is worth noting that reinvention is not just reproduction of the ones in the North. They have to be restructured recalibrated to suit not just South India, but the exact location of each instrument of the huge complex; for every instrument. While the thought of its reinvention itself is great, the same is being done with the help of the children of the gurukula; of course with the help of a number of Astronomical scientists; guided by the Trustees.

A Hub for future Astronomers and Researchers

At the Vedashāla, children conduct active research into numerous aspects of astronomy, present papers, win awards and bring recognition to the Gurukula. Trained by skilled teachers added with through hands-on experience, they help reclaim the "vast wisdom" in the area of Astronomy. Through JM, the Vedashāla also has instrumental facility to have precise data for updating the Indian astrological calendar (*panchānga*). The children have developed through a number of physical (and computer) models a number of astronomical phenomena. A striking example for this is the demonstration of the astronomical significance of the Vidyashankar Temple in Shringeri (built in 338 CE). The temple has 12 Zodiac Pillars (*Rashi stambhās*) that are strategically aligned with the sun's path, so precise that the morning sun's rays illuminate each pillar in a specific chronological order that matches the corresponding solar month.



Overall, it is a promising centre for research in Astronomy; worth being nourished and elevated for completion of its execution, and sustenance.
