

HOLISTIC HEALING IN AYURVEDA: THERAPEUTIC AND REJUVENATIVE PERSPECTIVES OF DEHAVADA AND LOHAVADA IN RASAGRANTHAS AND THE DEVELOPMENT OF RASASHASTRA

Dr. Kamal Pathak^{*1}, Dr. M. K. Yadav², Dr. Neha Arya³, Divya Bahuguna⁴

¹P.G Scholar, P.G Department of Rasashastra and Bhaishajya Kalpana, Patanjali Bhartiya Ayurvedic Evam Anusandhan Sansthan, Haridwar, Uttarakhand, India.

²Professor, P.G Department of Rasashastra and Bhaishajya Kalpana, Patanjali Bhartiya Ayurvedic Evam Anusandhan Sansthan, Haridwar, Uttarakhand, India.

³Professor and H.O.D, P.G Department of Rasashastra and Bhaishajya Kalpana, Patanjali Bhartiya Ayurvedic Evam Anusandhan Sansthan, Haridwar, Uttarakhand, India.

⁴B.A.M.S. Student, Patanjali Bhartiya Ayurvedic Evam Anusandhan Sansthan, Haridwar, Uttarakhand, India.

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*Corresponding Author

Dr. Kamal Pathak

P.G Scholar, P.G Department of
Rasashastra and Bhaishajya
Kalpana, Patanjali Bhartiya
Ayurvedic Evam Anusandhan
Sansthan, Haridwar, Uttarakhand,
India.



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ABSTRACT

The concepts of *Dehavada* (body-centred approach) and *Lohavada* (Alchemy and metallic transformations) represent two foundational streams within *Rasashastra*, the branch of *Ayurveda* that integrates pharmacology, metallurgy, and spiritual sciences. Ancient *Rasagranthas* (alchemical and medical treatises) describes these doctrines in detail, reflecting not only the therapeutic dimensions of minerals, metals, and herbo-mineral formulations but also the philosophical quest for longevity, vitality, and immortality. Over centuries, *Rasashastra* evolved from a mystical practice involving transmutation of base metals into gold (*Lohavada*) toward a more clinical discipline focusing on rejuvenation, disease prevention, and healing (*Dehavada*). This review comprehensively explores references to *Dehavada* and *Lohavada* in classical *Rasagranthas*, contextualizes their historical significance, and examines their contribution to the

development of *Rasashastra* as a science of holistic healing. Special emphasis is placed on therapeutic applications, rejuvenative strategies, philosophical underpinnings, and modern scientific correlates. The discussion highlights the dynamic interaction between spiritual aspirations and medical pragmatism, positioning *Rasashastra* as a unique tradition bridging alchemy and *Ayurveda*.

KEYWORDS: *Dehavada*, *Lohavada*, *Rasashastra*, *Rasagranthas*, *Ayurveda*, Alchemy, Rejuvenation, Therapeutics.

1. INTRODUCTION

Rasashastra, a specialized branch of *Ayurveda*, is a unique confluence of medicine, chemistry, and spirituality. Rooted in the Ancient Indian quest for longevity, vitality, and immortality, *Rasashastra* emerged as both a therapeutic system and a spiritual science. Its foundational doctrines, *Dehavada* and *Lohavada*, reflect this dual nature. While *Dehavada* emphasizes strengthening, rejuvenating, and sustaining the human body through herbo-mineral formulations and *Rasayana* Therapies, *Lohavada* represents the alchemical pursuit of transmuting base metals into noble ones, most notably gold, symbolizing both material and spiritual perfection.^[1]

The *Rasagranthas*-classical texts dedicated to *Rasashastra*- provide rich descriptions of these doctrines. Treatises such as *Rasarnava*, *Rasaratna Samuccaya*, *Rasendra Chudamani*, and *Rasahridaya Tantra* elaborate techniques of metal purification (*Shodhana*), incineration (*Marana*), preparation of *Bhasmas* (Calcined metal/mineral ashes), and formulations that enhance vitality and longevity.^[2] These texts also reflect the philosophical interplay between body-centred therapeutics and the metaphysical aspirations of alchemy.

Historically, *Rasashastra* evolved alongside *Ayurveda*, but with a distinctive emphasis on metallic and mineral therapeutics. Initially driven by the spiritual ambitions of alchemists seeking immortality and transmutation, the discipline gradually shifted toward medical utility, resulting in highly potent formulations such as *Rasayana*, *Rasaoushadhis*, and various mercurial compounds.^[3] These advancements not only enriched *Ayurveda* but also contributed to the broader Indian knowledge system, encompassing chemistry, metallurgy, and pharmaceutical sciences.

The doctrines of *Dehavada* and *Lohavada* serve as a lens to understand the developmental

trajectory of *Rasashastra*. *Dehavada* highlights the therapeutic orientation of strengthening the body, delaying aging, and curing diseases, whereas *Lohavada* embodies the philosophical and mystical pursuit of perfection and transformation, both material and spiritual. These complementary approaches enriched the *Rasagranthas* and laid the foundation for the integration of *Rasashastra* into mainstream *Ayurvedic* therapeutics.^[4]

In the present context, revisiting these doctrines is vital not only to appreciate the historical development of *Rasashastra* but also to explore their relevance in contemporary *Ayurveda*. Scientific studies on *Bhasmas*, herbo-mineral preparations, and *Rasayana* therapies underscore their pharmacological potential, providing new insights into ancient wisdom. This review attempts to present a comprehensive account of *Dehavada* and *Lohavada* as described in *Rasagranthas*, while analysing their role in the evolution of *Rasashastra* from an alchemical to a therapeutic science.

2. METHODOLOGY OF THE REVIEW

A comprehensive review methodology was adopted for this study, combining both classical and modern sources. Primary data were drawn from *Rasagranthas*- texts such as *Rasarnava*, *Rasaratna Samuccaya*, *Rasendra Chudamani* and *Rasahridaya Tantra*- which explicitly describe the doctrines of *Dehavada* and *Lohavada*. These texts were studied in *Sanskrit* with the help of traditional commentaries to ensure accurate interpretation.^[5]

Secondary data included peer-reviewed articles, contemporary research papers on *Rasashastra* pharmacology, and modern analytical studies on *Bhasmas* and Mercurial formulations. Databases such as PubMed, AYUSH Research Portal, and Scopus were accessed to identify studies that connect ancient formulations with modern biomedical understanding. Additionally, works of modern *Ayurvedic* scholars were reviewed to understand interpretive trends regarding the philosophical and therapeutic aspects of these doctrines.^[6]

The methodology also involved a historical-critical approach. The chronological development of *Rasashastra* was traced by comparing references across *Rasagranthas* and identifying shifts from mystical to therapeutic emphasis. Textual analysis was supplemented by contextual analysis, situating *Rasashastra* within the broader traditions of Indian Alchemy, metallurgy, and *Ayurveda*.^[7]

3. Historical Roots of *Rasashastra*

The origins of *Rasashastra* can be traced to the intersection of *Ayurveda*, metallurgy and Indian Alchemy (*Rasavidya*). While *Ayurveda* primarily focused on herbal formulations in its early phases, the later incorporation of minerals and metals marked a new dimension in therapeutic sciences. The earliest references to mercury (*Rasa*) and its applications are found in *Tantric* and *Siddha* traditions, where mercury was revered as the essence of Lord *Shiva* and a medium of immortality.^[8]

3.1. Alchemical Foundations

The term *Rasa* refers not only to mercury but also to essence or quintessence. In early *Rasashastra*, mercury was considered divine, capable of absorbing and transmitting life force. The alchemists of India sought two main objectives:

Dehavada- fortifying and rejuvenating the human body to achieve longevity and liberation.

Lohavada-Transmuting base metals into noble metals like gold and silver, symbolizing perfection.^[9]

These dual pursuits reflect the spiritual-material integration of Indian Thought. While Western alchemy largely emphasized material transmutation, Indian *Rasashastra* extended its scope to include the body as the ultimate laboratory.

3.2. Emergence of *Rasagranthas*

Classical texts such as *Rasarnava* (8th-10th Century A.D), *Rasaratna Samuccaya* (11th-13th Century A.D), and *Rasendra Chudamani* (12th Century A.D) systematically codified the principles of *Rasashastra*. These works describe processes like purification (*Shodhana*), incineration (*Marana*), and the preparation of *Bhasmas*. They not only discuss alchemical experiments but also their application in therapeutic contexts.^[10]

The *Rasahridaya Tantra* of Govinda Bhagavatpada is one of the earliest systemic works, highlighting both mystical and therapeutic uses of mercury. Over time, the focus of *Rasashastra* shifted from mystical experiments toward practical therapeutics, paving the way for integration into mainstream *Ayurveda*.^[11]

4. Concept of *Dehavada* in *Rasashastra*

Dehavada, literally “the doctrine of the body”. Represents the therapeutic dimension of *Rasashastra*. Its central concern is enhancing vitality, preserving youth, delaying aging, and

preventing disease. Ancient *Rasagranthas* describe mercury and mineral formulations as means to achieve *Kayakalpa* (bodily rejuvenation).

4.1. Philosophical Basis

Dehavada is rooted in the *Ayurvedic* concept of *Rasayana*, which seeks to improve health, intellect, and longevity. However, unlike purely herbal *Rasayana* therapies, *Rasashastra* emphasizes herbo-mineral preparations for deeper and long-lasting effects. Metals like gold, silver, iron, and mercury are described as fortifiers of *ojas* (vital essence) and stabilizers of the *dhatu*s (tissues).^[12]

4.2. Therapeutic Applications

The *Dehavada* tradition introduced formulations that became central to *Ayurvedic* therapeutics. Preparations such as *Swarna Bhasma* (gold ash), *Abhraka Bhasma* (mica ash), and *Rasayana yogas* were prescribed for chronic diseases, debility, infertility, and neurological disorders.^[13]

Swarna Bhasma- Reputed for promoting immunity, intellect, and longevity.

Abhraka Bhasma- Indicated in respiratory, reproductive, and haematological disorders.

Rasayanas fortified with mercury- Claimed to arrest aging and rejuvenate the body.

4.3. Dehavada in Rasagranthas

Texts like *Rasaratna Samuccaya* emphasize the use of properly purified and incinerated metals in micro doses, highlighting safety and efficacy. The *Rasarnava* describes mercury as capable of stabilizing the body and extending life when administered correctly.^[14]

Table 1: Examples of Dehavada Applications in Rasagranthas.

<i>Rasagranthas</i>	Example Formulation	Claimed Benefit
<i>Rasarnava</i>	Mercury Based <i>Rasayana</i>	Longevity, Immunity, Youth Preservation
<i>Rasaratna Samuccaya</i>	<i>Swarna Bhasma</i> Formulations	Cognitive enhancement, Vitality
<i>Rasendra Chudamani</i>	<i>Abhraka Bhasma</i>	Respiratory & Reproductive Health

5. Lohavada in Rasashastra

Lohavada, literally “the doctrine of metals”, represents the alchemical and transmutational side of *Rasashastra*. While *Dehavada* aimed at rejuvenating the body, *Lohavada* was concerned with transmuting base metals such as copper, lead, and tin into noble metals like gold and silver.^[15]

This was not merely an attempt at material gain but was viewed as a symbolic expression of purification, refinement, and perfection.

5.1. *Philosophical Symbolism*

In *Lohavada*, the transformation of metals was seen as parallel to the transformation of the human body. Just as a base metal could be refined into gold through alchemical processes, the human body- laden with impurities, diseases, and aging- could be transformed into a radiant, disease free, and longevity-endowed state through *Rasashastra*.^[16]

The philosophical undertone of *Lohavada* aligns with the Indian metaphysical idea of liberation (*moksha*). Here, the perfection of metal represented the perfection of the body and spirit. This symbolic transmutation elevated *Lohavada* from being a purely material pursuit to one with spiritual and therapeutic dimensions.

5.2. *Practical Alchemy and Experiments*

Rasagranthas describe numerous methods for transforming metals, often using mercury as the catalytic agent. Mercury was believed to possess a unique power to assimilate and transform other metals when properly purified and processed.^[17]

Processes such as *Samyoga* (union of mercury and metals), *Marana* (Incineration), and *Jarana* (Assimilation) were repeatedly described in classical texts. The *Rasarnava* outlines techniques where mercury amalgamated with copper or lead could result in artificial gold. While modern metallurgical science may not validate literal transmutation, the detailed chemical processes described in *Rasagranthas* reflect remarkable proto-chemical knowledge of amalgamation, calcination, and oxidation.^[18]

5.3. *Lohavada in Textual Tradition*

In the *Rasaratna Samuccaya*, *Lohavada* is described as the second great pursuit of *Rasashastra*, alongside *Dehavada*. The text asserts that one who masters mercury can achieve both bodily rejuvenation and metallurgical transformation. Similarly, *Rasendra Chudamani* elaborates on the methods of *Swarna Sadhana* (Gold Making), emphasizing strict ritualistic and procedural adherence.^[19]

However, later commentators often highlighted that the deeper value of *Lohavada* was not mere material gain but the knowledge of refining processes that contributed indirectly to medicinal preparations. The very methods used for metallurgical transformation were applied to prepare

safe, bio-assimilable forms of metals for therapeutic use.^[20]

6. Development of *Rasashastra* through *Rasagranthas*

The development of *Rasashastra* can be understood as an evolution from mystical-alchemical pursuits toward therapeutic medicine. This transformation occurred gradually, with different phases reflected in the *Rasagranthas*.

6.1. Early Period (8th-10th Century A.D.)

Texts like *Rasahridaya Tantra* and *Rasarnava* laid the foundation. The emphasis here was on mystical practices, mercury worship, and experiments in alchemy. Both *Dehavada* and *Lohavada* were presented as attainable through proper knowledge of mercury.^[21]

6.2. Classical Period (11th-13th Century A.D.)

The composition of *Rasaratna Samuccaya* and *Rasendra Chudamani* marked a turning point. The focus gradually shifted from ritualistic practices to systematic descriptions of pharmaceutical procedures. The processes of purification (*Shodhana*) and incineration (*Marana*) became more codified, ensuring safe therapeutic use of metals and minerals.^[22]

6.3. Later Period (14th-17th Century A.D.)

In this period, *Rasashastra* became firmly integrated into mainstream *Ayurveda*. Texts such as *Rasa Prakasha Sudhakara* and *Anandkanda* not only compiled earlier knowledge but also emphasized practical therapeutic formulations. Here, *Lohavada* took a backseat, and *Dehavada* became the dominant concern.^[23]

6.4. Modern Interpretations

Today, *Rasashastra* is studied primarily for its therapeutic contributions. Modern research has confirmed that properly prepared *Bhasmas* are nano-sized and biocompatible, explaining their effectiveness in micro-doses.^[24] While *Lohavada* is now largely symbolic, its historical role cannot be ignored in shaping the metallurgical sophistication that enabled the safe use of metals in medicine.

Table 2: Phases of *Rasashastra* Development.

Period	Key Texts	Dominant Theme	Significance
Early (8 th -10 th Century A.D.)	<i>Rasarnava</i> , <i>Rasahridaya Tantra</i>	Mysticism, Mercury worship	Foundation of <i>Dehavada</i> & <i>Lohavada</i>
Classical (11 th -13 th Century A.D.)	<i>Rasaratna Samuccaya</i> , <i>Rasendra Chudamani</i>	Codified Procedures	Balance of Alchemy & Therapeutics
Later (14 th -17 th Century A.D.)	<i>Rasa Prakasha</i> <i>Sudhakara</i> , <i>Anandkanda</i>	Therapeutics (<i>Dehavada</i>)	Integration into <i>Ayurveda</i>
Modern (18 th Century Onwards)	Commentaries & Research	Therapeutics, Nano-Medicine	Scientific Validation

7. DISCUSSION

The doctrines of *Dehavada* and *Lohavada* represent the twin pillars upon which *Rasashastra* was historically built. Their philosophical, therapeutic, and metallurgical dimensions not only enriched *Ayurveda* but also provided a unique example of how alchemy and medicine can intersect in human culture.

7.1. *Dehavada* and the Science of Rejuvenation

Dehavada reflects the *Ayurvedic* aspiration for *Kayakalpa* (Bodily Transformation). By employing mercury and other metals, ancient scholars aimed at achieving outcomes that modern biomedicine parallels with concepts like cellular rejuvenation, immunomodulation, and anti-aging therapy.^[25]

Studies on *Swarna Bhasma* reveal immunomodulatory, anti-inflammatory, and adaptogenic properties, aligning with its traditional role as rejuvenator.^[26] Similarly, *Abhraka Bhasma* demonstrates hematinic and respiratory benefits, supporting its classical indications. Thus, *Dehavada* anticipated principles that are only now being validated through nanomedicine and pharmacology.

7.2. *Lohavada* and Metallurgical Insights

Although modern science may dismiss the literal transmutation of metals, *Lohavada* can be reinterpreted as a profound exploration of metallurgical process. By experimenting with mercury's amalgamating and transformative capacities, *Rasashastra* practitioners discovered methods to render toxic metals safe for consumption. The protocols of *Shodhana* and *Marana* essentially refined metals into nano-particles, making them bio-assimilable.^[27]

This indicates that *Lohavada* was not merely a quest for gold but a sophisticated proto-scientific inquiry into matter transformation. The symbolic and spiritual undertones provided an added philosophical dimension, enriching Indian intellectual traditions.

7.3. Integration Into Ayurveda

The shift from *Lohavada* to *Dehavada* mirrors a broader cultural and scientific transformation. While early alchemy sought mystical and material gains, the later emphasis on therapeutics ensured that *Rasashastra* contributed directly to human health. This pragmatic orientation allowed *Rasashastra* to be integrated into the *Ayurvedic* corpus, where it continues to play a vital role.^[28]

The therapeutic application of metals and minerals- once derived from alchemical experiments- remains a hallmark of *Rasashastra*. Preparations like *Makardhwaja*, *Rasasindoor*, and *Swarna Malini Vasant* are still employed in clinical practice, demonstrating the living continuity of *Dehavada*.

7.4. Contemporary Relevance

In the present era, *Rasashastra* offers significant contributions to integrative medicine. The nano-scale nature of *Bhasmas* resonates with modern nanomedicine, where particles at such scales show unique bioavailability and efficacy. Furthermore, *Rasashastra's* emphasis on holistic rejuvenation aligns with current trends in preventive and personalized medicine.^[29]

Nonetheless, challenges remain. Concerns about toxicity, improper preparation, and lack of standardization highlight the need for rigorous scientific validation. While the philosophy of *Dehavada* and *Lohavada* remains inspiring, their safe translation into modern contexts requires collaborative research between *Ayurvedic* Scholars, chemists, and Pharmacologists.

8. Research Gaps

Despite its rich heritage, several gaps hinder the optimal utilization of *Rasashastra* in modern healthcare.

1. Limited Clinical Trials: Although many preclinical studies validate the safety and efficacy of *Bhasmas*, well-designed clinical trials remain scarce.^[30]
2. Standardization Issues: Variability in preparation methods across regions and practitioners leads to inconsistencies in quality and safety.^[31]
3. Toxicity Concerns: While classical texts emphasize purification, lack of adherence in

practice raises concerns about heavy metal toxicity. Modern toxicological studies are still insufficient.

4. Philosophical Under exploration: The symbolic and metaphysical implications of *Lohavada* have received little scholarly attention, often reduced to literal interpretations. A deeper philosophical analysis could enrich both historical and scientific understanding.^[32]
5. Integration with Nanomedicine: Though modern studies identify nano-particles in *Bhasmas*, systematic integration into nanomedicine research is still in its infancy.^[33]

9. Future Directions

1. Establishing multi-centric clinical trials to evaluate classical formulations.
2. Developing pharmacopeial standards for *Shodhana* and *Marana* processes.
3. Applying advanced analytical tools (TEM, XRD, SEM) to further explore nano-characteristics of *Bhasmas*.
4. Encouraging interdisciplinary research combining *Ayurveda*, chemistry, and biomedical sciences.
5. Exploring the symbolic and cultural value of *Lohavada* to reinterpret its role in shaping Indian intellectual history.

10. CONCLUSION

The doctrines of *Dehavada* and *Lohavada*, as enshrined in *Rasagranthas*, represent the dual aspiration of Indian Alchemy; bodily rejuvenation and material transformation. Over centuries *Rasashastra* evolved from mystical pursuits to therapeutic science, ensuring its integration into *Ayurveda*.

Dehavada continues to inspire modern rejuvenative therapies, while *Lohavada*- though often symbolic- remains significant for its metallurgical insights. Together, they embody the holistic vision of health, longevity, and transformation central to Indian tradition.

In the modern era, *Rasashastra* stands at a crossroads; its timeless wisdom can enrich contemporary medicine, provided challenges of standardization, safety, and validation are addressed. By bridging tradition and science, the doctrines of *Dehavada* and *Lohavada* offer not only historical insight but also future possibilities for holistic healthcare.

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