

**A CRITICAL APPRAISAL OF RASARATNA SAMUCHAYA: AN AUTHORITATIVE AND
COMPREHENSIVE TREATISE ON INDIAN ALCHEMY****Dr. Mahesh Kumar Bairwa^{*1}, Prof. P. L. Sharma², Dr. Hemlata Dixit³, Dr. Ramprasad Meena⁴**¹P.G. Scholar, PG Department of Agad Tantra Evum Vidhi Vaidyaka – M.M.M. Govt. Ayurved College Udaipur Rajasthan.²Professor & H.O.D., PG Department of Agad Tantra Evum Vidhi Vaidyaka – M.M.M. Govt. Ayurved College Udaipur Rajasthan.³Lecturer - PG Department of Agad Tantra Evum Vidhi Vaidyaka – M.M.M. Govt. Ayurved College Udaipur Rajasthan.⁴P.G. Scholar, PG Department of Agad Tantra Evum Vidhi Vaidyaka – M.M.M. Govt. Ayurved College Udaipur Rajasthan.***Corresponding Author: Dr. Mahesh Kumar Bairwa**P.G. Scholar, PG Department of Agad Tantra Evum Vidhi Vaidyaka – M.M.M. Govt. Ayurved College Udaipur Rajasthan. DOI: <https://doi.org/10.5281/zenodo.18429940>**How to cite this Article:** Dr. Mahesh Kumar Bairwa^{*1}, Prof. P. L. Sharma², Dr. Hemlata Dixit³, Dr. Ramprasad Meena⁴ (2026). A Critical Appraisal Of Rasaratna Samuchaya: An Authoritative And Comprehensive Treatise On Indian Alchemy. World Journal of Pharmaceutical and Medical Research, 12(2), 210–215.
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ABSTRACT

Rasaratna Samuccaya (R.R.S.), a 13th-century C.E. alchemical treatise authored by Vaagbhata, is an important classical compilation that systematically documents the preparation, properties, and therapeutic applications of drugs derived from minerals and metals. The text provides valuable insight into the advanced state of Indian alchemical knowledge, particularly with respect to the extraction, purification, and transformation of metals and minerals into therapeutically acceptable forms. It also elaborates on various alchemical instruments and techniques developed for pharmaceutical purposes, as well as the management of numerous diseases through herbo-mineral formulations. The present work aims to summarize the salient features of Rasaratna Samuchaya and to highlight its significance and contribution to the evolution of Indian alchemy. A critical review of the text was carried out using the Suratnojjvalaa Hindi commentary by *Ambikadatta Shastri*, and the compiled information was compared with other classical texts of *Rasashastra*. Relevant concepts were also examined in the light of modern scientific research to better understand certain principles described by *Vaagbhata*.

KEYWORDS- *Ayurveda, Rasashastra, Rasa Ratna Samuchchaya, Yantra.***INTRODUCTION^[1]**

In its early phase, the Ayurvedic pharmacopoeia was predominantly composed of drugs derived from plants and plant-based sources. Classical treatises such as the *Charaka Samhitaa* and other foundational texts of Ayurveda extensively employed medicinal plants in therapeutic practice. A significant transformation, however, occurred during the medieval period, when medicines of mineral and metallic origin gradually gained prominence within the Ayurvedic system.

The precise period marking the initiation of metals and minerals in therapeutics is difficult to ascertain. It is generally believed that around the 6th century C.E., the medicinal use of metals and minerals began to develop steadily and gained wider acceptance. Over the

subsequent century, this evolving practice matured into a distinct and well-structured scientific discipline known as *Rasashastra*.

Rasashastra primarily encompasses the study of mercury along with various metals, minerals, gems, and substances derived from plants and animals. The principal objective of this discipline is *dehavaada*, which aims at achieving longevity and a healthy life through formulations prepared from mercury and other metals and minerals. In later periods, *Rasashastra* was also applied to *lohavaada*, the process concerned with the transmutation of base metals into noble metals such as gold and silver.

Historically, *Rasashastra* reached its zenith during the 8th century C.E., largely due to the monumental contributions of *Aacharya Naagarjuna*. Numerous treatises were composed during this period, and renowned centers of learning such as Naalanda, *Takshashilaa*, and *Kaashi* emerged as hubs for teaching and research in *Rasashastra*. Unfortunately, during the invasions led by Mohammed of Ghazni in the 11th century C.E., a substantial portion of the existing *Rasashastra* literature was destroyed. Although a few texts survived, many were either incomplete or primarily focused on *lohavaada*, leading to a significant fragmentation of knowledge.

This situation created an urgent need for a systematic compilation of the scattered and fragmented principles of *Rasashastra*. This intellectual requirement was effectively fulfilled by *Vaagbhata* through his seminal work *Rasaratna Samuchaya* (R.R.S.), composed in the 13th century C.E. *Vaagbhata*, the son of *Sinhagupta*, explicitly states in the opening chapter that he examined numerous texts of *Rasashastra* and distilled their essential principles into this comprehensive treatise. The very title *Rasaratna Samuchaya* signifies a “collection of gems,” symbolizing the compilation of valuable and refined knowledge of *Rasashastra*.

The present review attempts to highlight the salient features of *Rasaratna Samuchaya* and to establish its significance and contribution to the development of Indian alchemy. For this purpose, a critical analysis has been undertaken based on the *Suratnojvala* Hindi commentary by *Kaviraj Ambikadatta Shastri*. This commentary, which comprehensively covers all 30 chapters of R.R.S. and is widely available, was therefore selected as the primary source for the present study.

The Author and Determination of the Period^[2]

Rasaratna Samuchaya (R.R.S.) was authored by *Vaagbhata*, who has briefly mentioned details regarding his lineage and background within the text itself. There exists a scholarly debate concerning the identity of this author. Some scholars consider the author of *Ashatanga Sangraha* and *Rasaratna Samuchaya* to be the same individual, while others regard them as distinct personalities. *Gananatha Sen* opines that the father of *Vaagbhata*, the author of R.R.S., was *Sanghan gupta* rather than *Simahagupta*.

In the first chapter of R.R.S., while enumerating the names of renowned *Rasa Siddhas* (adepts who successfully stabilized mercury), *Vaagbhata* mentions *Naagarjuna* (8th century C.E.), *Govinda* (10th century C.E.), and *Bhairava* (12th century C.E.). The inclusion of these figures indicates that the author lived after the 12th century C.E. Further support for this inference is provided by the reference to *Somaroga*, a disease entity that is not documented in texts prior to the 12th century C.E.

Additionally, R.R.S. contains numerous citations from earlier authoritative works such as *Rasaarnava* (8th century C.E.), *Rasendra Mangala* (11th century C.E.), and *Rasendrachudamani* (12th century C.E.), suggesting that the text was composed subsequent to these treatises. A formulation known as *Vaishvaanara Pottali Rasa*, described in the 16th chapter of R.R.S., is attributed to *King Singhal*, whose reign is dated between 1200 and 1247 C.E.

Moreover, the mention of drugs such as *Ahiphena* (*Papaver somniferum* L.) and *Vijayaa* (*Cannabis sativa* L.), which are absent in Ayurvedic literature prior to the 12th century C.E., further strengthens the chronological placement of R.R.S. Based on these internal and external evidences, it can be reasonably concluded that *Rasaratna Samuchaya* was composed around the mid-13th century C.E.

Composition of Rasaratna Samuchaya

In the opening chapter of *Rasaratna Samuchaya* (R.R.S.), *Vaagbhata* pays homage to 27 *Rasa Siddhas* and invokes their blessings before outlining the scope and objectives of the treatise. This introductory chapter presents an overview of the subject matter of R.R.S. and includes descriptions of *Rasas*, *Uparasas*, *Lauhas*, *Yantras*, purification procedures of metals, extraction of *Sattva*, preparation of *Druti*, and the various processes involved in *Bhasma* preparation.

R.R.S. is composed of 30 *Adhyayas* (chapters), each designated by its respective numerical title rather than a title reflecting its subject content. Structurally, these 30 chapters may be broadly classified into two sections. The first section, comprising the initial 11 chapters, deals primarily with the theoretical foundations of *Rasashastra* and the pharmaceutical processing of metals and minerals.

The remaining 19 chapters are chiefly devoted to therapeutic applications. These chapters briefly describe the pathology, symptomatology, and classification of diseases, followed by detailed accounts of numerous herbo-metallic and mineral formulations indicated for their management.

The available commentaries on R.R.S., along with the thematic content of each chapter and the classification of metals, minerals, and related substances into various groups, are systematically summarized in Tables 1–3, respectively.

Chapter-wise Overview of *Rasaratna Samuchaya*

Chapter No.	Contents
Chapter 1 st	<p>The chapter opens with Vaagbhatta offering reverential salutations to Lord Shiva, revered as the originator of <i>Rasashastra</i>.</p> <p>It introduces the scope and subject matter of <i>Rasa ratna Samuchaya</i>.</p> <p>A detailed description of the <i>Himalaya</i> region is provided, emphasizing its importance as a source of mineral wealth.</p> <p>The origin and characteristics of <i>Hingula</i> (cinnabar) are explained.</p> <p>The text describes the five types of <i>Rasa</i> (mercury) and their distinct features.</p> <p>Ritualistic worship of <i>Rasa</i> (mercury) is highlighted, underscoring its central role in <i>Rasashastra</i>.</p> <p>The significance and therapeutic effects of <i>murchhita parada</i> (processed or stabilized mercury) are elaborated.</p> <p>The commentator, <i>Ambikadatta Shastri</i>, offers insightful contemporary explanations of the defects (<i>doṣas</i>) of mercury described in classical <i>Rasashastra</i>.</p> <p>He further supplements the classical account with detailed modern information regarding the origin, mineral ores, availability, and methods of extraction of mercury.^[3]</p>
Chapter 2 nd	<p>This chapter deals with the eight <i>Mahaarasas</i>, the group of substances regarded as superior and essential in the processing of mercury.</p> <p>It describes their different types, acceptable varieties, and distinguishing characteristics.</p> <p>The therapeutic properties and clinical utility of each <i>Mahaarasa</i> are elaborated.</p> <p>Detailed methods for purification (<i>Shodhana</i>) and calcination (<i>maarana</i>) of these substances are presented.</p> <p><i>Capala</i> is discussed as a controversial substance, with differing opinions regarding its identification as either bismuth or selenium.</p> <p>The commentator of R.R.S. correlates <i>Capala</i> with bismuth, although no explicit textual or experimental evidence is provided in support of this view.</p> <p>The chapter is further enriched by the inclusion of relevant modern chemical insights related to <i>Abhraka</i> (mica) and <i>Makshika</i> (pyrite), which enhance its scientific relevance and clarity.^[4]</p>
Chapter 3 rd	<p>This chapter describes <i>Uparasas</i>, a group of eight substances considered slightly inferior to <i>Mahaarasas</i> in their role in mercury processing.</p> <p>It also elaborates on <i>Saadharana Rasa</i>, comprising eight substances regarded as inferior to <i>Uparasas</i> in the processing of mercury.</p> <p>The mode of description follows a structure similar to that adopted for <i>Mahaarasas</i>, including classification, properties, and therapeutic relevance.</p> <p>Unlike <i>Mahaarasas</i>, the procedures for calcination (<i>maarana</i>) of <i>Saadharana Rasa</i> are not included in this chapter.</p> <p>Scientific and contemporary explanations are provided selectively for <i>Gandhaka</i> (sulphur), <i>Gauripaashana</i> (arsenic), and <i>Anjana</i> (black antimony), enhancing the understanding of these substances from a modern perspective.^[5]</p>
Chapter 4 th	<p>The text describes fourteen different <i>Ratnas</i> (gems) recognized in <i>Rasashastra</i>.</p> <p>Among these, five are identified as the superior or most auspicious <i>Ratnas</i>.</p> <p>Each gem is systematically correlated with a specific planet.</p> <p>These associations are explained from an astrological perspective, highlighting the influence of planetary forces on human health and wellbeing.</p> <p>The discussion emphasizes the therapeutic and symbolic significance of gems based on their planetary relationships.^[6]</p>
Chapter 5 th	<p><i>Rasaratna Samuchaya</i> presents, for the first time, a detailed and systematic exposition of <i>Lauhas</i> (metals).</p> <p>The text clearly describes the various types of metals along with their characteristic attributes.</p> <p>Procedures for purification (<i>shodhana</i>) and calcination (<i>maarana</i>) of each <i>Lauha</i> are elaborated.</p> <p>Therapeutic indications and clinical applications of the metals are also specified.</p> <p>Notably, methods for the transmutation of base metals into precious metals are not described.</p> <p>This omission suggests a gradual decline of the <i>Lohavada</i> concept within <i>Rasashastra</i>.</p> <p>It also reflects the recognition of limitations in achieving success in the complete stabilization of mercury.^[7]</p>

Chapter 6 th	<p>The text enumerates the desirable qualities of a physician and an assistant, closely resembling those described in the <i>Caraka Samhitaa</i>. Detailed guidelines are provided regarding the appropriate location and systematic establishment of a pharmacy (<i>Rasashalaa</i>). The procedures for the preparation of <i>Rasaliṅga</i> are described in detail. Methods for the ritual worship of <i>Rasaliṅga</i> are clearly outlined. The initiation ceremony (<i>dikshaa</i>) for disciples entering the study and practice of <i>Rasashastra</i> is explained comprehensively. Although the treatise does not primarily deal with <i>Dhaatuvaada</i> (alchemy aimed at metal transmutation), the author emphasizes, at the conclusion of this chapter, the importance of maintaining secrecy regarding the specialized knowledge of <i>Rasashastra</i>.^[8]</p>
Chapter 7 th	<p>This chapter provides a systematic and comprehensive account of pharmaceutical science (<i>Rasashala</i>). It describes the ideal location and structural requirements for establishing a pharmacy. Proper arrangement and placement of pharmaceutical instruments are detailed. The organization of various functional sections or departments within the pharmacy is explained. Criteria for the qualification, competency, and conduct of personnel required in the pharmacy are specified. The principles and guidelines laid down in this chapter remain relevant and applicable even in contemporary pharmaceutical practice.^[9]</p>
Chapter 8 th	<p>Terminology plays a crucial role in <i>Rasashastra</i>, as words that appear simple in common usage often carry specialized technical meanings within this discipline. A term may differ significantly in its scientific interpretation compared to its everyday meaning. For example, <i>Kajjali</i> generally denotes a black-colored powder, whereas in <i>Rasashastra</i> it specifically refers to black mercuric sulphide prepared by triturating mercury and sulphur in defined proportions. This chapter is devoted to clarifying such specialized technical terms used in <i>Rasashastra</i>. It includes a systematic explanation of 78 terminologies originally defined by Somadeva in his renowned treatise <i>Rasendracchudaamani</i>.^[10]</p>
Chapter 9 th	<p>This chapter presents a detailed account of 31 different instruments essential for pharmaceutical operations in <i>Rasashastra</i>. The descriptions of these instruments are based on the classical explanations provided by <i>Somadeva</i>. Each instrument is explained with respect to its structure and functional utility in pharmaceutical procedures. The chapter highlights the importance of appropriate instrumentation for the accurate and effective processing of <i>Rasa</i> formulations.^[11]</p>
Chapter 10 th	<p>This chapter describes seventeen different types of <i>Musha</i> (crucibles) along with their methods of manufacture. Four varieties of <i>Koshthee</i> (furnaces) used in pharmaceutical and alchemical procedures are explained. It details ten types of <i>Putra</i>, referring to pits of varying sizes employed for the calcination of metals and minerals. The chapter also defines the terminology related to 24 commonly used procedural and material groups. Collectively, these descriptions provide a comprehensive understanding of the heating techniques and apparatus fundamental to <i>Rasashastra</i>.^[12]</p>
Chapter 11 th	<p>The chapter explains various units of measurement relevant to <i>Rasashastra</i> preparations. It details the <i>Parada asta sanskaara</i>, the eight fundamental processing steps essential for preparing mercury. The use of mercury is contraindicated in cases of wounds and burns due to potential adverse effects. Dietary guidelines specifying do's and don'ts during internal administration of mercury are outlined. Measures to manage and treat adverse reactions arising from improper use or faulty processing of mercury are described. Twelve types of blemishes (<i>doshas</i>) found in impure mercury are identified along with procedures to eliminate them.</p>

	The chapter also presents 25 methods of producing <i>Paarada bandhas</i> , i.e., stable and therapeutically safe forms of mercury. ^[13]
Chapter 12 th -30 th	This section extensively discusses therapeutic aspects of <i>Rasashastra</i> treatment. Chapters 12 to 25 provide detailed coverage of 64 diseases, including brief descriptions of their pathology, types, and symptoms. ^[14] Numerous effective formulations for treating these diseases are elaborated upon in detail. Chapters 26 and 27 focus on specialized therapies: chapter 26 addresses <i>Jwara Roga</i> (geriatric disorders) and <i>Rasayana</i> (rejuvenation therapy), while chapter 27 covers <i>Vajikarana Chikitsa</i> (aphrodisiac therapy). ^[15] The final three chapters (28 to 30) are significant for demonstrating treatments of various ailments using specific medication types such as: <i>Lauha Kalpa</i> (iron-based formulations) <i>Visha Kalpa</i> (preparations from poisonous substances) <i>Parada Bhasma Kalpa</i> (formulations involving calcinated mercury). These chapters highlight the therapeutic versatility and depth of <i>Rasashastra</i> medicine. ^[16]

Importance of Rasaratna Samuchaya

- * Written by *Vaagbhatta* in the 13th century C.E., *Rasaratna Samuchaya* is a key compilation on the properties and preparation of mineral- and metal-based medicines.
- * It uniquely integrates all eight branches of Ayurveda while focusing on therapeutic applications of metals and minerals for over 68 ailments.
- * The text contains 30 chapters, 3,871 verses, and details 960 formulations.
- * It discusses classification of metals and minerals, innovative tools, specialized formulations, and cautions against their use during pregnancy.
- * According to PC Ray, R.R.S. is a comprehensive and systematic treatise on materia medica, pharmacy, and medicine, combining scientific rigor with traditional knowledge.
- * *Vaagbhatta* stresses the necessity for science to be both systematic and scientific for effective application.
- * The initial chapters cover foundational *Rasashastra* principles, including the mythological origin and classification of *Parada* (mercury) and related substances into *Mahaarasa*, *Uparasa*, and *Saadhaarana Rasa*.
- * *Mahaarasas* are emphasized for their extensive medicinal use and role in mercury processing (*parada sanskaras*), detailed in chapters two and three; chapters four and five focus on metals (*lohas*) and calcined materials.
- * *Ratnas* (gems) are valued higher than metals and require longer preparation; they play a significant role in mercury-based treatments.
- * Ayurveda outlines essential qualifications for pharmacy personnel, including *pariccharaka* (attendants), *Shishya* (disciples), and *Guru* (teachers).
- * Historically, mineral medicines were used sparingly due to the lack of advanced pharmaceutical methods for converting them into suitable forms.
- * The evolution of pharmaceutical techniques in *Rasashastra* enabled the effective transformation of

minerals into therapeutically appropriate dosage forms, expanding their clinical use.

DISCUSSION

- ❖ According to P.C. Ray, *Rasaratna Samuchaya* (R.R.S.) is a systematic and comprehensive treatise on materia medica, pharmacy, and medicine, combining traditional knowledge with scientific rigor.
- ❖ *Vaagbhatta* stresses that science must be both systematic and scientific to be effective.
- ❖ Although terminology, instruments, and equipment are discussed later (chapters 8–10), they ideally belong earlier for better understanding.
- ❖ R.R.S. uniquely covers all eight branches of Ayurveda, mainly focusing on the therapeutic (*dehavaada*) aspects of *Rasashastra*, unlike earlier texts that emphasized *dhaatuvaada* (metal transmutation).
- ❖ The first 11 chapters compile theoretical and pharmaceutical knowledge from earlier texts like *Rasendra Mangala* and *Rasendrachudaamani*; the remaining 19 chapters combine prior knowledge with *Vaagbhatta's* contributions.
- ❖ Many chapters share similarities with earlier texts, especially in classifications, terminologies (78 terms), and instruments (31 types), showing continuity in knowledge.
- ❖ R.R.S. aligns with *Charaka Samhita* and *Sushruta Samhita* in clinical and disease descriptions, with some content reflecting influences from *Ashtanga Sangraha*.
- ❖ The last three chapters (28–30) provide unique, specialized treatments with iron (*lauha kalpa*), poisonous drugs (*visha kalpa*), and mercury preparations (*parada bhasma*), not found in other texts.
- ❖ Notably, R.R.S. excludes metals and minerals in obstetric and pediatric treatments, implying their avoidance during pregnancy and childhood.
- ❖ Qualifications and qualities for students and attendants in *Rasashastra* are similar to those in *Ashtanga Sangraha*.

- ❖ Fifteen commentaries exist on R.R.S.; *Ambikadatta Shastri Suratnojjvalaa* commentary is notable for adding modern explanations, photos of instruments, and pharmaceutical details.
- ❖ Some controversial points remain unresolved, such as multiple drugs listed as “best rejuvenators” despite the tradition of recognizing a single best drug.
- ❖ Inconsistencies in mineral classification across chapters may be due to authorial error or later interpolations.
- ❖ Several formulations are named after sages and *rasa siddhas*, compiled systematically.
- ❖ Overall, this work serves as a valuable and comprehensive resource in the field of *Rasashastra*.

CONCLUSION

The use of mineral-based medicines in alchemy and pharmaceutical sciences gained prominence starting with *Naagarjuna* in the 8th–9th century A.D., who is regarded as the "Father of Indian alchemy and Ayurvedic pharmaceutical sciences related to metals." *Rasashastra* as a distinct science took shape during this period through systematic classification and documentation. Its core principle extends beyond mere alchemy (*dhaatuvaada*) to focus on preserving health and strengthening the body to ultimately achieve *Mukti* (liberation).

Vaagbhata consolidated the scattered knowledge of *Rasashastra* in the *Rasaratna Samuchaya* (R.R.S.). Critical analysis of R.R.S. clearly shows it to be the most comprehensive text on *Rasashastra* available today, encompassing all eight branches of Ayurveda alongside detailed pharmacological and therapeutic insights. Though a compilation, it serves a clear and focused purpose.

Worthy contributions are found particularly in chapters 22, 28, 29, and 30, whose significance merits further modern scientific research. *Ambikadatta Shastri's Suratnojjvala* commentary has greatly enhanced accessibility of the text, though not all metals and minerals received detailed modern descriptions; other commentaries help fill these gaps.

In summary, *Rasaratna Samuchaya* holds a pivotal place in *Rasashastra* literature, effectively compiling and preserving the fragmented knowledge of the tradition. It stands out as the best extant treatise on *Rasashastra*, covering the full scope of Ayurvedic branches along with its pharmacological and therapeutic dimensions.

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