



## Review Article

A critical study of *Rasamritam* and its applied aspectsSudhaldev Mohapatra, Ramesh K. Gupta<sup>1</sup>, K. R. C. Reddy<sup>2</sup>, Chandra Bhushan Jha<sup>3</sup>

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## Abstract

Historical studies of *Rasa shastra* reveal the use of metals and minerals, both for alchemical and therapeutical purposes in ancient past. But, gradually the alchemical use of the subject, declines and the therapeutical use takes over. *Rasamritam* is the latest doctrine in the field of *Rasa shastra* which compiles the extract of the older books and adopted some new and contemporary concepts. The practical aspects of this text influence both the academicians as well as physicians in large extent. Keeping the wealthier, timely concept of this text in mind, we are trying to review and analyze it critically for the benefit of researchers and practitioners and hope the idea will be fruitful.

**Key words:** *Amritikarana, Dhatu, Dwigandhaayasa, Marana, Shodhana*

## Introduction

*Rasa Shastra* deals with the knowledge of *Parada* and other matters pertinent to it, along with the manufacturing of medicines from metal/mineral, animal and some poisonous herbal sources. From the period of *Nagarjuna* (7<sup>th</sup> AD), both the alchemical and therapeutical use of the *Rasa Dravyas* were carried out by the *Rasa Siddhas* and *Rasa Vaidyas*. Due to the increase of diseases, advancement of science and decreasing of classical knowledge and sufficient practical textual references for alchemical methodologies and techniques, the therapeutic use of *Rasa Dravyas* dominates over it. The text *Rasamritam* is full of practical therapeutic use of different *Rasa Dravyas* and their processing techniques. In *Rasamritam* the classification of the drugs their descriptions, are presented in a very systematic way, instead of following the traditional method. The division of chapters are very much ideal. Description of indices with practical applicability at the end of the book is the magnitude of this text.

## Author's recognition

Vd. Yadavji Trikamji Acharya was born on 1881 at Porbandar in Gujarat, has contributed to Ayurveda in general and *Rasa Shastra* in particular by writing and editing many books and manuscripts like *Rasamritam*. Simultaneously he was a well known physician, academician and administrator. He authored

the text *Rasamritam*, on 1951 which was published by Motilal Banarasi Das in *Nirnaya Sagar Press*, Kolbhat Street, Bombay. After a very fruitful and far-fetched life he met the super soul on 1956.<sup>[1]</sup>

Vd. Yadavji Trikamji was one of the pioneers of Ayurveda. He was one of the most helping hands to Dr. P. N. Mehta who founded Gujrat Ayurveda University. Acharya Yadavji served Gulabakunvarba Ayurveda Mahavidyalaya as teacher, consultant and principal. He helped Vd. Hari Prapana Sharma for compiling *Rasa Yoga Sagara*. He also edited and published *Madhukosha Vyaksha* of Acharya Madhava, and *Ayurveda Deepika* of Acharya Chakrapani. In the series of *Ayurvediya Granthamala* he has edited and republished many books like *Ayurveda Prakash*, *Rasa Prakash Sudhakar*, *Rasa Kamdhenu*, *Rasa Sanketa Kalika*, etc. As an organizer, administrator, he chaired the *Nikhila Ayurveda Mahasamhelana* at Haridwar (1925), Gwalior (1932), Delhi (1950) and again in Haridwar (1953), He authored *Dravyaguna Vigyana*, *Ayurvediya Vyadhi Vigyana*.<sup>[2,3]</sup>

Subject matter of *Rasamritam* at a glance

- This book consists of total 09 chapters and 09 indices. As *Parada* is a central element of whole *Rasa Shastra*, it is described as first chapter followed by *Gandhaka* in a separate chapter.
- All the *Dhatus* (metals) like *Swarna*, *Rajata*, etc. are described along with *Khanija* (minerals) of the corresponding *Dhatu* like *Makshika* for *Tamra*, *Abhraka* for *Loha* etc. and *Mishra Dhatus* like *Pitala*, *Kansya*, etc. in a same chapter under the name *Loha Vigyaniya*.
- Drugs of *Malla*, *Sudha*, *Sikta*, *Lavana*, *Kshara*, *Ratna* are discussed in individual chapters. The last chapter consists of some compound formulations of therapeutic interest.
- At the end precious information and instructions are given

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regarding different pharmaceutical and clinical aspects in 09 indices.

- Information regarding *Putra* and preparation of *Bhasma* is given in 1<sup>st</sup> index. 2<sup>nd</sup> and 3<sup>rd</sup> indices consist of description of *Chapala* and *Shilajatu*.
- In 4<sup>th</sup> index special discussion on *Makshika* and *Vimala* is described. Authors own view on *Rasaanjana* is given in 5<sup>th</sup> index.
- 6<sup>th</sup> and 7<sup>th</sup> indices are the collection of adverse and toxic effects of *Rasa Dravyas* and mineral materials from which *Satva* can be extracted.
- *Shodhana* method of some plant materials frequently used in preparation of different compound formulations are given in 8<sup>th</sup> index. 9<sup>th</sup> index consists of the list of references from *Charaka* and *Sushruta Samhita*, where *Rasa Dravyas* are described.<sup>[4,5]</sup>

### Analysis of Dehavada and Dhatuvada on Rasamrita

- *Rasamritam* is massively enriched with the descriptions of *Dehavada* (transforming the sick body to healthier one through *Rasaoushadhies*).
- In the first chapter only 08 *Sanskaras* of *Parada* are given which indicates its use for *Dehavada*.<sup>[6,7]</sup>
- Description of *Gandhaka* in a separate chapter, after *Parada* possibly facilitates the *Dehavada* motto of the author.
- No description of *Abhraka*, chief material for *Dhatuvada*<sup>[8]</sup> as a separate chapter shows the less importance of *Abhraka* in comparison to *Gandhaka* in this particular text.
- Other materials like *Makshika*, *Rasaka*, *Chapala*, etc. are described in the line of *Dehavada*.
- Description of pharmaceutical processing's like *Shodhana* and *Marana* (no any alchemical processing's like *Charana*, *Ranjana*, etc.) in different chapters for specific materials followed by their therapeutic use strengthens the *Dehavada* idea of the book.
- Special discussion on *Putra* and *Bhasma* in the indices indicates the dominance of *Dehavada* over *Dhatuvada*.
- In the last chapter description of 66 *Rasaoushadhies* and no description of any method regarding *Dhatuvada* (alchemical processings) anywhere in the book, clears the concept that the book is a dominating book of *Dehavada*.

## Chapter Discussion

### 1<sup>st</sup> chapter (*Parada Vigyaniya*)

- Description of *Naisargika* and *Yaogika Dosas*, name, definition and procedures for 08 *Sanskaras* and strict indication for use of *Parada* in *Rasayogas* only after 08 *Sanskara*.
- Serial description of *Kajjali*, *Rasa Parpati*, *Rasasindura*, *Makaradhvaja*, *Mallasindura*, *Rasa Karpura* shows the systematic way of presentation of the *Rasayogas* according to the *Agni Mana*, difficulty in processing's and safety in preparations.
- Claim for *Nischandratva* of *Kajjali* is found in this text.
- *Shodhana* process of *Parada* (in *Jayanti Bhringaraja*, *Eranda*, *Kakamachi Swarasa*) and *Gandhaka* (in *Bhringaraja*, *Swarasa*, both *Bhavana* and *Dhalana*) are described in the context of *Rasa Parpati*.
- *Hingula* and *Girisindura* are described as minerals of *Parada*.

- Properties of *Hingula*, its *Shodhana* (through *Bhavana* in sheep milk and lemon juice) and *Darada Vati* are described.

### 2<sup>nd</sup> chapter (*Gandhaka Vigyaniya*)

- *Shodhana* (in milk and *Bhringaraja Swarasa*) and properties of *Gandhaka* are described along with *Gandhaka Rasayana Chaturjataka*, *Triphala*, *Bhringaraja*, *Guduchi*, *Adra* (10 drugs) 08 *Bhavana* of each separately}.

### 3<sup>rd</sup> chapter (*Loha Vigyaniya*)

- *Swarna*, *Rajata*, *Tamra*, *Pittala*, *Kansya*, *Makshika*, *Tutha*, *Jangara*, *Vanga*, *Naga*, *Mridarasringa*, *Souviranjana*, *Yasada*, *Puspanjana*, *Rasaka*, *Loha*, *Mandura*, *Vimala*, *Kasisa*, *Gairika*, *Abhraka*, *Ayaskanta* are described with respect to their synonyms, properties, *Shodhana* and *Marana* where ever necessary. Corresponding alloys and minerals are described immediately after the main metal.
- This book is influenced by the modern chemistry as HCL, H<sub>2</sub>SO<sub>4</sub>, HNO<sub>3</sub>, Oxalic acid are used for different pharmaceutical processings e.g *Shodhana* and *Marana* of *Swarna*.
- In the context of *Tamra Visehsa Shodhana* {*Arka Kshira* + *Saindhava (Lepana)*, *Nirgundi Swarasa (Nirvapa)* or cow's urine (*Swedana*)}, *Amritikarana* (with *Surana Kanda*), and *Dosha* are described.
- For the preparation of *Tamra Bhasma* at first *Patana* technique is used, to get partially prepared *Bhasma*, and then *Putra* system of heating is followed to get the final *Bhasma*.
- *Nilakantha Rasa*, *Tuthadrava* and *Tutha Malahara* are described in context of *Tutha*.
- *Jangara* is a unique preparation, which is prepared from *Tamra*. When the curd is kept in a copper vessel for certain duration till all the moisture content evaporate, the greenish material thus obtained is known as *Jangara* and is used for *Dushta Vrana Shodhana* and *Vrana Ropana*.
- *Visehsa Shodhana (Haridra and Nirgundi)* of *Vanga*, preparation of *Swarna Vanga* is described in context of *Vanga*.
- *Swayamagni Loha Bhasma* and *Ayaskriti* are described in context of *Loha*. (heating and quenching in *Triphala* and *Salasaradi Gana* for 16 times).
- 03 types of *Loha* are described like *Munda*, *Tikshna* and *Kanta*, these are superior in quality succeedingly.
- The specific feature for *Kasisa Bhasma* i.e. *Niramla* is found in this text.
- *Gill Armani* and *Gill Makhtum* like Unani medicines are also described in continuation of *Gairika* and are considered as types of *Gairika*.

### 4<sup>th</sup> chapter (*Malla Vigyaniya*)

- *Shodhana* procedure and properties of *Gouripasana*, *Haritala* and *Manahshila* are described.
- In the context of *Gouripasana Mallavati* {*Rasa sindura* (01), *Guduchi Satva* (100)} and *Phenasma Drava*, in context of *Haritala Talasindura* and *Rasa Manikyana* and in context of *Manasila*, *Silasindura* are described.

### 5<sup>th</sup> and 6<sup>th</sup> chapter (*Sudha and Sikata Vigyaniya*)

- *Churmodaka*, *Khatikadi Churna*, *Godanti Bhasma* and *Kasisa Godanti Bhasma* {*Shudha Kasisa* and *Shudha*

*Godanti + Kumari-(Gajaputa)* are described in *Sudha Varaga* where as *Dugdha Pashana*, *Naga Pashana* and *Hajral Yahud*, are described in *Sikata Varga* with their use.

### 7<sup>th</sup> chapter (*Lavana and Kshara Vigyaniya*)

- Properties and therapeutic indications of *Saindhava*, *Samudra*, *Romaka*, *Vida*, *Sauvarchala*, *Oudbhida* are described.
- In context of *Kshara Varga Yava Kshara*, *Saji Kshara*, and *Tankana Kshara* are described along with *Sphatika* and *Karpura Shilajatu*.
- *Ela Hima* is used for *Shodhana* of *Karpura Shilajatu*.

### 8<sup>th</sup> chapter (*Ratna Vigyaniya*)

- About 07 *Ratnas* i.e *Manikyaa*, *Neelam*, *Pusparaga*, *Gomeda*, *Vaidurya*, *Tarkshya*, *Vajra* are described by their *Shodhana* procedure and properties. *Marana* procedures of *Ratnas* are described in general.
- 09 *Uparatnas* i.e *Rajavarta*, *Sangayesava*, *Akika*, *Sphatika*, *Suryakanta*, *Chandrakanta*, *Piroja*, *Vaikranta* and *Kaharuva* are described. *Parada* is used to make the *Vajra* powder.

### 9<sup>th</sup> chapter

- In this chapter the author has described 66 *Rasa Yogas* which include *Kharaliya*, *Parpati Rasa* and *Pottali Rasa*. Only one *Asava* i.e *Lohaasava* is included.

### Indices

1<sup>st</sup> index. (Information regarding *Bhasma* and *Putra*)

Regarding the *Bhasmikarana* the author has the following views:

- At first the material to be incinerated should be subjected for *Shodhana* and specific *Shodhana* procedures where applicable, then powdered. Associated minerals (*Haritala*, *Manahshila*, *Hingula*, etc.) are added and pounded followed by addition of liquid media prescribed for particular material then subjected for *bhavana* at least 10-12 h.
- Pellets should be flat rather than rounded, it should be completely dry before keeping into *Sharava*, one pellet should be in between 1-2 *Tola*.
- He emphasized on sealing of the joint of *samputa* to facilitate more time of contact of main material with associated materials like *Gandhaka*, *Parada* *Manshila*, as these are volatile in nature. Also due to toxic nature of these vapours.
- He suggested not sealing of the joint where the associated materials like *Parada* and *Gandhaka* are not added, particularly, in last 2-3 *puta*, to facilitate direct contact of fire and oxygen to the material to be incinerated.
- He suggested that during the arrangement of pellets in the casseroles not more than two layers should be kept, to facilitate equal distribution of temp to all pellets.
- The casseroles used for *Samputa* should not have more depth to allow less space in between the *Samputa*.
- In case of *Abhraka*, *Loha*, *Mandura*, *Tamra* and *Makshika* initial *Putas* should be given in more fire and later on fire should be lowered.
- For *Suvarana*, *Rajata*, and *Naga* the initial *putas* should be given in less fire and later on fire should be increased.

### 2<sup>nd</sup> and 3<sup>rd</sup> indices

- 4 types of *Chapala* i.e whitish, blackish, greenish, and

reddish are described and said that it melts like *Vanga* hence called *Chapala*. It causes *Rasa Bandha*.

- Properties of *Shilajatu* along with its formation and *Grahya Lakshana*, *Shodhana* procedure of *Shilajatu* in the technique of *Agnitapi* and *Surya Tapi* and features of *Shudha Shilajatu* are described (in parameters of smell, taste and solubility). Different *Anupana* of *Shilajatu* are also indicated like *Dugdha*, *Takra*, *Mamsa Rasa*, *Salasaradi Gana Kashaya* etc.

### 4<sup>th</sup> index

- Historical approach of *Makshika* from *Samhitas*.
- Two types i.e *Kanchhabhasa - Madhura* and *Rajatasannibha - Amla* are described
- The author identified that the material having one iron and two sulphur molecule and having features like- with angles, six surfaces, and brassy in color is *Vimala*. Its yellow variety is not-reacted with air and white variety reacts with air to form *Kasisa* and sulphuric acid. He called it *Dwigandhayasa*.
- According two author *Makshika* is the conversion of *Vimala*. Two types of *Makshika* are described 1<sup>st</sup> one is bronzy yellow, having same composition as *Vimala* but presents with different shape and features (neither specified nor named). 2<sup>nd</sup> type contains 02 molecule of copper and Iron and 01 molecule of sulphur, an extra element and is known as *Suvarna Makshika*.

### 5<sup>th</sup> index

- Author differentiates *Rasaanjana* and *Rasauta* and claimed that *Rasanjana* described in *Rasa* text should never be the *Rasakriya* of *Daruharidra* it may be *Rasauta*.
- As the synonyms of *Rasanjana* are *Rasagarbha*, *Rasotbhava* which indicates its formation from *Parada* and it may be yellow oxide of mercury. He quoted comments of Dr. Vamana ganesha Desai and Dr. D.A Kulkarni.

### 6<sup>th</sup> index

Adverse effects caused by the intake of *Ashudha Loha* and *Dhatu Bhasma* [Table 1].

### 7<sup>th</sup> index

- *Satvapatana* of different *Dhatu*s like *Abhraka*, *Rajavarta*, *Makshika*, *Vimala*, *Shilajatu*, *Tala*, *Manahshila*, *Sasyaka*, *Chapala*, *Gouripashana*, *Hingula*, *Tuvari*, *Kasisa*, *Kharpara*, *Anjana*, *Bhunaga*, *Vaikranta* are described.
- Associated materials used for *Satvapatana* are *Tankana*, *Ghritha*, *Pancha Gavya*, *Gunja*, *Madhu*, *Kshara* and *Amla*, *Guda*, *Guggulu*, *Sajji Kshara*, *Yava Kshara*, etc. and *Bhavana drugs* used are *Nimbu Swarasa*, *Kanji*, *Kulatha Kwatha*, *Dugdha*, *Surana Swarasa*.

### 8<sup>th</sup> index

- *Shodhana* procedure of some herbal poisonous drugs i.e *Vatsanabha*, *Ahiphena*, *Dhatu Beeja*, *Jayapala*, *Gunja*, *Kupilu*, *Bhallataka*, *Bhanga*.

### 9<sup>th</sup> index

- Descriptions of about 90 materials referred from different *Samhitas*, which are frequently used in different context of *Rasa Shastra*.<sup>[4-6]</sup>

**Table 1: The adverse effect caused by the intake of Ashudha Loha and Dhatu Bhasma**

Metal	Dosa
Rajata	Santapa, constipation, loss of strength and vigour
Vanga, Yasada	Prameha, Gulama, Hridaya Roga, Shula, Arsha, Kasa, Shvasa, vamana
Naga	Prameha, Kshya, Kamala, Gulama, Shula, Bhagandar
Loha	Ama, loss of appetite, Gulma, diarrhoea, Shotha
Gandhaka	Santapa, Kushtha, Bhrama, and loss of strength
Hingula	blindness, Bhrama, Murcha, Prameha, malease
Abhraka	Kushtha, Kshaya, Shotha, Parshva Shula
Tala	Prameha, Santapa, stiffness, increases Vata and Pita
Kharpara	Vamana, Bhrama
Manashila	Ashmari, Mutrakrichra, constipation,
Tankana, Tutha	Vamana, Bhrama
Shilajatu	Daha, Murchha, Bhrama, blood Diseases, constipation
Vajra	Parshva Shula, nausea, Daha

### Practical aspects of Rasamritam

- The book is compiled with the aim to overcome the controversies regarding both in academics and pharmaceutical point of view.
- Author has not classified the raw material as like *Maharasa*, *Uparasa*, *Sadharana Rasa*, etc. he started with *Parada* the most important material followed by *Gandhaka* second most so far as *Dehavada* is concerned. Then metal and followed by the minerals and compounds of that particular metal. This rather looks systemic.
- Too many pharmaceutical techniques for the processing's of metals and minerals are described by the use of many associated materials (like *Bhavana Dravya*, *Marana Dravya*, etc.) in available literatures. But the author tried to describe only those methods which are easier and could be performed practically with available associated materials.
- The author has clear view regarding the sanskara i.e only 08 *Sanskara* is described with a single procedure for each which could be performed practically. For therapeutic purposes.
- Regarding *Putra* and *Bhasma* very practical approach is described in 1<sup>st</sup> index i.e about pellets, sealing of joint firing technique for different materials etc.
- Description of *Shodhana* of some herbal poisons drugs are very much practical and expressed in simplest way.
- Description of adverse effect of the materials which are either taken in *Ashudha* condition or in improper *Marita (Bhasmikarana)* condition in one place makes the

clinicians easy to access the patient who take a compound formulation.

- Description of around 66 important formulations helps the clinicians practically as these are less easy to manufacture and administer.

### Demerits of the text

No description of *Paribhasha* is available, which is a lacuna of this book.

Description of *Dhanyabhraka* and *Amritikarana* are not found in context of *Abhraka*.

### Conclusion

- Very systematic classifications of materials are found in this text.
- The book is mainly based on *Dehavada* and hardly any description of *Dhatuvada* is found.
- The description of 09 indices at the end, are most valuable part of this book which describes the practical utility of manufacturing processes of *Rasa Dravyas*.
- It is a literature of modern era where amalgamation of modern chemistry and *Rasa Shastra* occurs. Also incorporation of some Unani drugs are found.
- List of references of materials from *Charaka* and *Sushruta* are found in one place.
- All most all materials are described in very brief manner and unnecessary, practically unusable methods are not discussed.
- The book could prove beneficial for an academician as well as the practitioners who are preparing medicine for their own patients particularly for *Rasa Vaidyas*.

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## हिन्दी सारांश

### रसामृत का प्रायोगिक एवं विवेचनात्मक अध्ययन

सुधलदेव महापात्र, रमेश के. गुप्ता, के.आर.सी. रेड्डी, चन्द्रभूषण झा

आयुर्वेद जीवन का विज्ञान है जिसका बहुत प्राचीन एवं समृद्ध इतिहास रहा है। वेदिक काल से लेकर आज तक यह विज्ञान अपने ज्ञान से समस्त समाज को सिंचित करता रहा है। आयुर्वेदिक चिकित्सा पद्धति में वानस्पतिक, खनिज व जान्तव द्रव्यों द्वारा विभिन्न जटिल व्याधियों की चिकित्सा सफलतापूर्वक की जाती है। रसशास्त्र के प्राचीन इतिहास से यह प्रतीत होता है कि इसका विकास देहवाद व धातुवाद दोनों के लिए हुआ था। धीरे-धीरे धातुवाद का हास होता गया जबकि देह वाद उन्नत अवस्था में पहुंच गया। रसामृत रसशास्त्र का नवीनतम ग्रंथ है जिसमें लेखक ने सभी प्राचीन ग्रंथों के विषयों का वर्णन करते हुए अत्याधुनिक विषयों का भी वर्णन किया है। यह ग्रंथ शोधार्थियों व चिकित्सकों को समान रूप से अपनी ओर आकर्षित करता है। इस लेख में रसामृत समस्त विषयों का विवेचनात्मक वर्णन किया गया है, जो आयुर्वेदिक चिकित्सकों को चिकित्सकीय ज्ञान प्रदान करने तथा शोधार्थियों को गवेषणात्मक अनुसंधान करने में सहायक सिद्ध होगा।