Chronological Development of Rasa Shastra

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ABSTRACT
Rasa shastra is a most important and popular branch of Ayurveda. It deals with the knowledge related to alchemy (Lohavedh) and Ayurvedic Pharmaceutics specially connected to the drugs of mineral origin with a view to remove poverty from the world and to strengthen the body and also to prevent their ageing process. History of Rasa Shastra can be traced in pre Vedic period where metals are successfully employed in treatment of various diseases. Its development was rapid after Lord Buddha and the influence of the philosophy of Ahimsa. This was the era when Rasa Shastra flourished tremendously. It was recognized as a medical science with an independent philosophical background in 14th century, by Madhavacharya in his book Sarva Darsana Samgraha. Considering the importance of this discipline in Ayurvedic therapeutics and the fact that there is dearth of comprehensive review on the subject an attempt has been made in this review to provide a brief but all encompassing coverage of different aspects related to it.

Keywords: Alchemy, Ahimsa, Lohavedh

INTRODUCTION
Etymologically the word “Rasa” is used to describe the metal Mercury, also known as quicksilver. The word “Shastra” means knowledge or sacred scripture. The term Rasa shastra, therefore could be translated as the ‘science of mercury’. Rasshastra or the Ayurvedic alchemy is an important branch of Ayurvedic pharmacology which deals with the metals, minerals the gemstones, animal products and herbal ingredients, highly medicinal co mounds were formulated for rejuvenation, the cure for chronic disease and ultimately life extension.¹ The Rasa dravya have the following three characteristic attributes: instant effectiveness, requirement of very small doses and extensive therapeutic utility irrespective of constitutional variation. The origin of Rasa sastra has its roots in the Indian alchemy. Alchemy was a form of chemistry studied in the medieval period, in which people tried to discover different ways to change ordinary metals into gold. This practice went on for centuries, yielding some of the significant findings in the field of alchemy.

Vedie Kala
➢ Rigveda reveals that copper, gold, Iron and some other metals and minerals have been used in that period.²
➢ Rigveda refers to Asvins substituting the lost leg of Vishala by a thigh made of iron.
➢ Yajurveda enumerated a list of metals & minerals – Ayas, Hiranya, Syam (copper), Loha, Sisa (Lead), Trapu (Tin).
➢ According to a quotation in Yajurveda Swarna is useful in improving longevity, lusture, Strength.³
➢ In Atharvveda Hiranyadarshanphala and its internal use are mentioned
➢ Chandogya Upanishad – Tikshnaloha used as medicine.
➢ Transmutation of lower metals into gold has been described in Taittariyabramhana.
➢ As per Manusmriti During the birth ritual of a baby Swamaprasana is indicated.
➢ The description of metals like Swarna, Rajat etc. and precious stones like Manikya, etc. is available in Garuda Purana, Agni Purana, and Devi bhagvat.
CharakaSamhita

Caraka has classified drugs into three categories –
1. Sthavar
2. Jangam
3. Bhaum

The third category includes gold, iron, copper, tin etc.  
- Manhshila, Haratala, Kasis, are used for external application for purpose of external application.
- Shodhana of Parthivdravya are mentioned in charakasamhita.
- Suvarna and Rouya are used for purose of PunshavanSamsakara.
- Lohadi Rasayana is indicated for Rasayana Karma
- Vaidurya, Mukta, Manibhasma, Gairika, Shankha, Suvarnabhasma has used in udakakalpana for Raktaittachikitsa
- There is no direct reference of Parad is mentioned in Charak Samhita. But in charakakushtha-chikitsa adhyay the word “Ras” is used.
- Different types of Loha, Tapya, Adrja, Rouya, Maksikia etc. has used in variety of yogas for Panduchikitsa.
- Mukta, Praval, Vaidurya , Shankh, Shatika, Anjana, Gandhaka has used in Shwasvyadhi as Muktadyachurna with Madhu and Sarpi.
- Tamra used in garavisha for vanama and suvarna with Madhurasvishagna yoga.
- Vajra, Markata, Vishamushika, vaidurya are used for sarpadanshanivaran.
- Manahashila used as pradhamannasyain kaphajpratishay.
- Pitakchurna (Manhshila, Hartala, Yavakshara, Saindhav has used in Pitakchurna to treat mukharoga.
- We see that Dhatus were administered in the form of powder (Raja) only and the concept of bhasmas was not developed during the classical age.

Sushruta Samhita

In this Samhita also references of Therapeutic applications of mineral and metallic substances are found abundantly.
- Trapvadigana and usakadigana are described, various dhatus are mentioned in these gana.
- Several Yantra and Shastra used in surgical process are made of different kinds of metals or alloys.
- Ayaskriti is the specific contribution of Sushrutasamhita.
- Surprisingly external application of mercury is also evident in Sushruta Samhita.
- Acharya Sushruta mention of pakas namely Sthalipaka, etc.
- Dhatuvish – Phenaashma and Hartala were first time introduced in Sushruta Samhita.
- Internal administration of Anjana is first time indicated in Sushruta Samhita.
- Various Dhatus are mentioned for internal administration in Dravya Sangrahniya adhyay.
- Two bhedas of lauha is described in SushrutaSamhita. Tikshnalauha and kala lauha.
- Vibhitakkashtha is used for burning of Mandur.
- Gandhaka is used in Mahavajrataila for kushthachikitsa.
- SwarnaPrashan is indicated in new born child.
- The word bhasma mentioned in Sushrutasamhita (Sutra 2 & Kalpa 6) only the ash of vegetable drugs.
- The concept of Puta appears to be developed for the first time by Sushruta and the references regarding tuvarakarasayana reflects about it.
- The pulp of tuvaraka is to be burnt in closed vessel without letting out the smoke ( Antardhuma method) and put.
- A thorough review of SushrutaSamhita provides a sound opinion that application of metals and minerals are mentioned in this classic from the therapeutic angle as well as other purpose.

AshtangaSangraha and AshtangaHridaya
- Internal administration of Parada was first time mentioned in Ashtanga Sangraha Rasayana Prakaran.
- Bhasmanirmanavidhi is mentioned in Ashtanga Sangrah.
- For Lohamaran bhanupakvidhi is introduced.
- AstangaSangrahafirtly enumerates ghatimusaand Andhamusa.
- The process of Dhatubhasma was conceived during the time of Vriddhavagbhatta.
- For lohamaran Bhanupakvidhi hasintroduced.
- Shukravar dhanatmakkalpa is explained in detail which contain Parada, Gandhaka and Shilajatu etc.
- Sikth, Sindoor, Tutha, Tarkshya are used in taila form for treatment of vicharchika.
- Two tyes of Lauha – Tikshnalauha and Krishna lauha has described.
Ras, Veerya, Vipaka of various dhatu introduced by vridhavaghbhatta.
The credit of using visa in therapeutics once again goes to vagbhatta.

**Kautilya Arthshastra**
Kautilya arthasastra written by Canakya, a great Academic, Economical and Political master of Gupta period. It may be composed in 4th century B.C.

- In this period lohavidya is in its peak level of development.
- Several references of use of metal and minerals for purposes of preparation of utensils, armory and some medicinal objectives found in kautilyaArthashastra.
- Sodhana and Mardavkara processes of dhatus were mentioned.
- Identification of Dhatu and Ratnas are introduced.
- Seven types of Loha mentioned- Kalayas, Tamravritta, Kansya, sisa,Trapu, Vakrintak, and Aarkoot.
- Three sources for occurrence of mukta mentioned- Shankh, Shukti and Prakirna.
- Even though metals and minerals were used both externally and internally for the preservation as well as promotion of positive health and cure of diseases.
- At that time three types of Suvarna used –
  1. Jatroop (Native)
  2. Rasavidha (from vedh of mercury)
  3. Akarodhbhav
- Suvarna made from Rasa i.e. Parada is mentioned as Rasavidha.
- This shows that even prior to his time this type of gold was available in the market and people knew the techniques of conversation of base metals into noble metals with the help of mercury.
- For Suvarna shodhan they used siskam and for suvarna vikrutikaran they used Hingula.

**Varahmihira Period**
Although he was the Acharya of Jyotishshastra, he had the basic knowledge of Ayurveda and also of Rasshastra.
- In his literature he explains all dhatu, Ratna, Manhashila, Gairika etc.
- He again explains the Payanavidhi of shastra.
- He also made a shukravardhakkalpa which includes Parada, Makshika, Iohabhasma, Gandhaka, shilajatu. This kalpa resembles the Shukravardhak yoga of Ashtanga sanghraha.

**Harsacarita**
Harsacarita of Banabhatta gives a long list of companions and assistants of king Harsa this includes physicians, alchemist, mineralogists, priests etc.

- Here mineralogy was an art it belonged to one of the sixty four arts
- Its aim was to make some worthy minerals out of some worthless ones i.e. through alchemy; the term Jatarupaka for gold maks this clear.
- The knowledge of mineralogy was accomplished through tantras and mantras.

**Kubjikatantra**
Manuscripts of this work were traced in ‘Nepal library. It may be composed in 6th century A.D.

- It is mentioned that therapeutic action of Parada increases due to incineration of it with sulphur for six times.
- The procedure of transmutation of copper into gold is mentioned in this book.

**Development of Rasa Shastra in Medieval period**

**Nagarjuna:** The systemic evolution of Rasa Shastra took place during the time of Nagarjuna. In this period number of most valuable Rasa preparations alongwith their pharmaceutical processing techniques have developed. He learned knowledge from Acharya Sarabha in Nalanda Vidyapitha. He knows about Mayuurvidya and krutrim Swarna Nimana from parada.

**Acharya Gorakshanath:** He made the Khechari Gutika and Suvarnanirmanarathagitakalpa.

**Rasa Ratna Samucchaya:** It is a well known comprehensive treatise of Rasa Shastra. Scattered knowledge of Rasaśāstra is well compiled by Vāgbhaṭa. It is the best available text on Rasaśāstra which describes not only pharmaceutical and therapeutical aspects but also covers the eight branches of Ayurveda. It is a compilation but has its own specialty and consequence.

**Rasa Hridaya Tantra:** Rasa HridayaTantra is a unique text among a huge number of rasa literatures, which gives elaborate description of 18 special mercurial processing techniques (Astadashaparada Samskara).This manuscript is presented with a
guideline, how to make Mercury competent for transmuting base metals into a noble one and to produce therapeutic benefits with them.\textsuperscript{20}

**Ras Ratnakara:** He explained krutim Manikyanirmana and Indranil Nirmana in his book RasRatnakara.

**Anandakanda:** This text gives an elaborate description of Rasa Shastra. Dehavada as well as Lohavada concept of Rasa Shastra has been described in detail.

### Development of Rasa Shastra in Modern Era

**Bhaishajya Ratnavali:** Bhaishajya Ratnavali is written by Kavi Raj Govinda Das Sen composed in 18 th century AD. It is compiled book mainly from Chakradutta, Rasendrasarasangraha, Charaka etc. *Paribhasha Prakarana, Mana Paribbhasa*, various Rasa dravya are described in detail. Yogas including swarasa, kalka, kwath, vati, Bhasma and various compound Herbal and Herbomineral preparations and *pathya* and *apathy* are mentioned in detail for each diseases.\textsuperscript{21}

**Rasatarangini:** Rasatarangini is written by Pranacharya Sadananda Sharma. It ia an authoritative text on Rasa Shastra and contains all the detail of various procedures involved in the drug preparations. Acharya has named the chapters of the text as Taranga. Total 24 Taranga and 3651 verses encompasses Rasatarangini. Acharya Sadananda Sharma has mentioned only those procedures which are realistic and feasible in present scenario. He mentioned some acids like sulphuric acid, *sorakamla*, *Lavanamla* etc.\textsuperscript{22}

**Rasamritam:** This book is written by Acharya Yadav ji Trikamji in 1951. 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. Very systemic classifications of materials are found in this text. It is a literature of modern era where amalgamation of modern chemistry and Rasa Shastra occurs, and also incorporation of some unani drugs are found.\textsuperscript{23}

**Rasa yoga Sagar:** Rasa yoga sagar is written by Shri Hariprapannasharma in 1930. In this text various formulations from different classics are collected. In addition to this some new formulations are also included.

**Kupipakwa Rasa Nirmana Vigyana:** This book was written by Vaidya Harisharananda. In this treatise he mentioned various kupiakva rasa kalpas and their methods of preparation. Swami Harisharanand Vaidya has described 258 kupipakwarasayana in his text Kupiakava Rasa NirmanaVigyana.

**Ratna Dhatu Vigyana:** This Granth is written by Shri Badrinarayana shastri. In this book all gemstones (Ratna and Upatna) and other Rashatriyadravya (Parada, Rasa, Uparasa) are described in detail. In addition to this some upatna (Jaharmohra, Akika, Yakuta) and some minerals like uranium, chromium, chroyolite and Kelslite are briefly described.

### Discussion

History of Indian alchemy can be traced to pre vedic period. The archaeological excavations at Mohenjodaro and Harappa in the Indus valley have brought to light that the people in ancient India were possessing chemical knowledge as early as in the pre historic period. In Vedic period single herbs were used for medication. Minerals and animal substances were also in use but no compound preparations were prepared. Alchemy in India was started for the preparation off a potion of life for imparting immortality and later for the transmutation process for converting ordinary metals into gold. Indian alchemy derived its colour and flavour largely from tantric cult. Then, in later centuries, all the previous accumulated alchemial ideas were put to practical use and a number of preparations of mercury and other metals were evolved as helpful accessories in medicine.

### Conclusion

Historically the drugs of mineral origin are in use since ancient times in the therapeutics but during that period their numbers were very much limited probably on account of non development of suitable and sophisticated pharmaceutical procedures, techniques and processes necessary for their conversion to suitable dosage forms. However since the time of Nagarjuna (8\textsuperscript{th} and 9\textsuperscript{th} century A.D.) Who is considered as ‘Father of Indian alchemy and metal related Ayurvedic pharmaceutical sciences, the use of mineral drugs have started to become more popular.
and frequent in Alchemy and pharmaceutic-otherapeutics. It is believed to have come into its proper existence with its scientific classification and documentation around 8th century. The main foundation being the concept that the objective of the science of mercury is not limited to Alchemy (Dhaatuvaada) but also to maintain health and strengthen the body for achieving Mukti.

REFERENCES
2. Khandal Santosh, Ras Bhaishajya Kalpana Vigyan, Publication Scheme Jaipur, Reprint 2016, pp:3
7. Shastri Kashinnath Charaka Samhita Uttarardha, Chaukhambha Bharati Academy Reprint 2013,Charaka Chikitsa 1/3-23, pp:37