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"Literary Legacy Of *Rasashastra*:A Critical Review Of Classical *Rasa* Texts"

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Abstract : *Rasa Shastra* is a unique branch of *Ayurveda*, explaining pharmaceutical aspects of conversion of metals and minerals into therapeutically potent drugs, specially dealing with the minerals, metals, precious stones, certain poisonous herbs and their processing. *Rasa Shastra* deals with different types of preparations namely *Khalviya Rasayana*, *Parpati Rasayana*, *Pottali Rasayana*, *Kupipakwa Rasayana*. When one tries to seek origin of any science one depends on various materials like manuscripts, books, etc. as well as references about that science in the contemporary and allied literature.The main aim of *Rasa Shastra* is to attain *Jivan Mukti* (liberation from the cycle of re-birth by means of *Dehavadha* i.e. healthy physique with *Rasaushadhis* along with *Lohavadha* i.e. (converting lower metals to higher metals). Thus it is evident that the science of herbs along with the mineralogy and gemmology were at its zenith during that period. Herbo-mineral formulations are one of them which have drawn attention of the world. These formulations have been more popular because of their smaller dose, palatability, shelf life and efficacy. Through various pharmaceutical processes these metals and minerals are converted into non-toxic forms suitable for the treatment of various diseases.

***Keywords: Rasashastra Book*, history**

Introduction:

Ayurveda, the first medical science of the world emphasizes on maintaining equilibrium of physical, physiological, psychological, spiritual, and social health in a comprehensive way. The concepts and approaches of *Ayurveda* are unique and provide a health promotive, disease preventive and curative guidelines. The science utilizes naturally occurring animal sources, plants, metals and minerals in a systematic way to maintain the health. Use of metals and minerals in *Ayurvedic* drugs remains an unique identity for *Ayurveda* and at the same time became controversial issue for the followers of western medicine. However since time immemorial metals and minerals are being used in *Ayurvedic* medicine without causing any harm to the human body. The art of use of metals and minerals in different formulations is familiar as *'Rasashastra'*.The origin of *'Rasashastra'* has its roots in the "Indian alchemy"[1]. *Rasashastra* or the *Ayurvedic* alchemy is an important branch of *Ayurvedic* pharmacology. This branch deals with the use of metals, minerals, gemstones and their processing[2]. *Rasashastra* is not counted among the eight branches of *Ayurveda*. This is indicative of the fact that *"Rasashastra"* in its initial days was developed as an independent pharmaceutical science[3].

Though the writing of books on *rasashastra* had started during 7th- 8th century A.D.; it dates back to antiquity. This is the evident by the references we come across in *Veda*, *Bramhana*, *Smriti* and *Samhita* literature. *Siddha Nagarjuna* (8-9 Century A.D.) is known as *"father of rasashastra"*. The evolvement of *rasashastra* as a specialized branch is traced to the great Buddhist Sage *Nagarjuna*. Who is considered as 'father of *rasashaastra*'. It is believed to have come into its proper existence with its scientific classification and documentation around 8th century. *Nagarjuna* proclaimed *"Siddhe Rase Karishyaami Nirdaridryamidam jagat"* - meaning that i am experimenting with the mercury to eliminate poverty from this world. 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* i.e. ultimate salvation- the concept is incorporated in the philosophy of *raseshvar darshana*[4]. During the 12th century A.D., *rasashastra* was in the highest peak of popularity, resulting in numerous book being written in this century and afterwards being replete with drugs of mercurial kingdom. At present, every ayurvedic physician invariably uses *rasa* drugs[5].The origin of *'rasashastra* '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. 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[6]. Alchemy in India was started for the preparation of a 'potion' of life for imparting immortality and later for the transmutation process for converting ordinary metals into gold. Indian alchemy derived its color and flavor largely from the tantric cult. Then, in later centuries, all the previous accumulated alchemical ideas were put to practical use and a number of preparations of mercury and other metals were evolved as helpful accessories in medicine. *'Rasashastra'* or the ayurvedic alchemy is an important branch of *ayurvedic* pharmacology. This branch deals with the use of metals, minerals, gemstones and their processing[7]. In the ancient *ayurveda* the emphasis has been over the herbs and their therapeutic usages. Later on the animal products, metals and minerals started to find favor of the ayurvedic practitioners. The minerals and metals are very effective and potent for immunization, rejuvenation and the elimination of diseases[8].

So *Rasashatra* as it is practiced presently has its origin about 4000 years back. However, actual development as far as medicinal use began in 2nd and 3rd century but its peak period of development was from 8th century onwards. After 16th century the knowledge appears stagnant and presently after learning the science like chemistry, again it is in the developmental stage. Though history of *Rasashathra* dates back even before 300-400B.C. when valuable additions on the subjects were recorded during 12th-16th century[9] .Having proper knowledge of *rasashatra*, without tracing its history will be incomplete. So knowing history is mandatory. When one tries to seek origin of any science one depends on various materials like manuscripts, books, etc as well as references about that science in the contemporary and allied literature. So, here attempts have been made regarding the history and periodical evaluation as well as evaluation observed in the field of *Rasashastra*.

Aims and objective 1. To know the history of *Rasashastra*

2. To collect brief description regarding the contents of works and also about their authors.

Materials and methods: References regarding *rasashastra* were collected from various classical and *ayurveda* published works, published research papers from Pub Med, Google Scholar and compilation was done.

1.Rasendra Mangalam :7th-8th Century (According to P.C. Ray), Author: Nagarjuna,Commentator &Translations: 1. In 1924, by Shri Jeevram Kalidas, Gondal (Gujarat) (presently out of print) 2. In English by Kaviraj. H.S.Sharma, Editor: Kaviraj. H.S. Sharma, Edition: 2003, Publisher and Publication: Jaikrishnadas Ayurveda Series Chaukhambha Orientalia, Number of Volumes: One.Salient Features: The book contains 8 chapters1st chapter begins with *Mangalacharana* then detail description of process of *Marana*, *Dravana*, *Rasabandha*,The process of making *pills* etc. are described .In second chapter melting of *Vajra* ,*Vaikranta* has been dealt,in the third chapter *charana jarana* and different *yogas* are described like *Svacchandabhairavarasa* for *Vataprakopa*, *Teekshnamukharasa* for *Pitta prakopa* and *Sankochashulbarasa* for *Kaphaprakopa*, the fourth chapter describe different *Paradbandhas* along with different *yogas*.The first volume of the book having four chapters only is available. According to P.V. Sharma the 5-8 chapters are available in manuscript with the Welcome Institute of History of Medicine, London.

Contributions: The *shodhana* procedures for drugs are dealt in detail, *satwapatanavidhi* is described for the first time, *druti* of different drugs described for the first time, different *yogas* specific to doshas as well as diseases are described, *parpati* preparation told for the first time in the name of *parpatika rasa*, different measurements like *angula*, *gunja*, *gunjamaana* etc. have been used, different forms of formulations like *anjana*, *gutika*, *pishti* etc. being explained.

2. Rasa Hridaya Tantra *:*In 9th century A.D. Acharya Govinda Bhagavatpada, the preceptor of Sankaracharya, the illustrious profounder of Advaita Vedanta, His father was Sri Sumano Vishnu and grandfather was Sri Magal Vishnu [10]. Acharya Govinda Bhagavatpada was Raja vaidya of Sri Madan, king of Kirata. On request of king this text was composed by him. This text was published by Krishna Gopal Ayurveda Bhawan, Dharmartha Trust, Ajmer, Rajasthan in 1952, 2nd edition (Oct 2000). Before this, it was published twice in Sanskrit. But presently both editions are not available ,Commentaries: Sanskrit: Mugdhaavabhodhini along with Hindi Vyaakhya, Commentators: In Sanskrit by Achaarya Chaturbhujamishra.

Contributions: The book contains 19 chapters called *'Avabodhas'*. There are 506 shlokas in total.*Rasa Hridaya Tantra* which provides elaborative description of the processing of Mercury both for *loha siddhi* (metallic transformation i.e. formation of noble metal from the base metal) and *deha siddhi* (metabolic transformation i.e. make the body strong and healthy which leads to salvation). However it is more of a text of Alchemy than medical treatise[11]. The text mainly describes the 18 *samskaaras* of *parada* in detail,the description of *kacchapayantra* is different from all the other texts, describe *loha maaraka dravyas* and *kanta ranjaka dhatus*,one entire chapter is dedicated to description of *bida*,*druti* is described in detail,there is mentioning of name of 28 *rasacharyas*,the method of arrangement of chapters goes as per the importance of *parada* followed by *parada samskaaras*,concept of *kshetrikarana* is dealt in detail. No description of *Paribhasa* is found.

3. **Rasarnavam***:*10th/12th century,*Rasarnava*' is a dialogue form treatise between Lord *Shiva* and *Parvati*. The author of '*Rasarnava*' is anonymous but a Shiva Sampradaya Vidwan has written it. Few say Bhairavananda is the author but is yet controversial. It has been edited with '*Rasachandrika*' Hindi commentary by Dr Indradeo Tripathi and Bhagirathi notes by Pt. Taradatta Panta Ayurvedacharya, Kolkatta Asiatic Society, printed in 1910 by Sir P.C. Ray[12].There is controversy regarding the period of this book. Author Priyavata Sharma says it as 12th century, another author Siddhinandan Mishra opts as 10th century. Some other authors say it as 4-5th century. But yet the period of this treatise remains controversial.The available book is published by Chowkhamba Sanskrit series office, Varanasi. Printer is Chowkhamba Press, Varanasi. Edition is Third, 1995,2009 Commentators: In Hindi by Dr. Indradev Tripathi,volume: One.

Contributions: The book contains 18 chapters called *'Patalas'*. It is one of the oldest treatises that deal with *Parada Siddhi* (mercury). It deals in detail about mercury, processes of mercury *(Parada samskara)*, highlights about this *Parada bandhana* (binding of mercury), Dhatuvaada (alchemytransmutation of metals) and *Dehavaada* (making the body free of disease and strong), more about *Dhatuvaada*. Various methods for coloring of *Dhatu Ranjana*, for *Lohavedha* making into gold, silver are mentioned[13,14]The book is famous for *jeevanmuktivaada*, *jwalapareeksha* explained for *lohas* is an important contribution of this book, *sudha varga* dravyas told under *shukla varga*, an entire chapter dedicated to *kshetrikarana*, *agnijaara* described for the first time, description of different *yantras, mooshas* and *koshti* for the first time.

4. Rasendra Chudamani :Two books with name of *Rasendra Chudamani* authored by two different scholars are mentioned by Dr. N Gopalakrishnan, Indian Institute of Scientific Heritage, Trivandrum[15]. The text authored by Nakinchadeva is unavailable, making it difficult for further comments in that respect. Acharya Yadavji Trikamji, in association with Acharya Jayadeva Vidyalankara made strenuous efforts in publishing Somadeva's *Rasendra Chudamani* from Motilal Banarsidas Press, Lahore in 1932 AD. In this edition, the author didn't mention the source of original manuscript. Partial form of the book, only 6th Chapter is available in Saraswati Bhavan, Library of Sampurnananda Sanskrit University, Varanasi[15]. The book published by Yadavji vanished in mean time and was unable for further reference for next 30 years. Further attempts on revitalizing were made by Acharya Siddhinandana Mishra who has written a Hindi commentary, Siddhi Prada on this text with the help of his colleagues in 1988. The proof copy was verified with the manuscript available at Goenka Library, Varanasi (Kashi Vishvanatha Library). Very recently, Dr. Rameshwar Dayal Vajpayee has written a Hindi commentary on the text, which is published by Chaukhambha Krishnadas Academy, Varanasi. It is assumed that, Somadeva has also authored *Rasa Ratna Samucchaya*. The text by same name is also written by Rasa Vagbhatta, is available; however, any information regarding this Somadeva and his work is inaccessible[16] ,12th-13th Century,Translations and Translators: in Hindi: Siddhiprada by Dr. Siddhinandan Mishra, Shabdaarthabodhini by Rameshwar Dayal Bajpayee,Editor: Rameshwar Dayal Bajpayee, Edition: 1"edition: 2004, Publisher and Publication: Choukambha Krishnadas Academy, Varanasi,volume: One

Contributions: There are 16 chapters and 1398 shlokas in the book.at the end of each chapter the author refers himself as *"srikaravala-bhairava-pura-vara-pati-sri-somadeva-virachite mahavira-vamshaste"*. This clearly indicates that the author of this book is acharya *somadeva* residing in *bhairavapura* & a descendent of *mahavira*. *Rasendra Chudamani* is perhaps the first authoritative text of *Rasashastra* where one can find the mention any of a new class/group of drug i.e. *Sadharana Rasa* encompassing 8 drugs. Most of them, except *Hingula* (Cinnabar), *Girisindoora* (Red oxide of Mercury) and *Kaparda* (conch shell), other minerals and marine products seem to be new addition to the then existing chemical knowledge. But for the sake of proper study, author must have classified them under a new group. The addition of *Gauripashana* (Arsenic trioxide) seems to be a new drug adopted by author from the contemporary Hakim, as the later were the first users of this poisonous drug in therapeutics purpose, although it has been mentioned under metallic poisons in Sushruta Samhita. Similarly, most of the matter of *Rasendra Chudamani* finds it's resemble with *Ananda Kanda*, another treatise of *Rasashastra*, however, its exact period is still controversial, a separate chapter dedicated to *sishyopanayana* and *rasashaala*, description of technical terminologies in a separate chapter as *paribhasha* for the 1st time, *ratnarasayanas* have been dealt for the first time, different *yantras, putas, mushas* and *koshtis* have all been described under single chapter, *paradajarana* with *abhraka*, different *lohas* being described in detail[15].

5.*Rasa Prakasha Sudhaakara*:13th Cen. AD. Written by Yashodhara Bhatta, son of Shri Padmanaabhabhatta belonged to Joonaghad district of Gujrath.The book follows the documentary style of Sodhal nighantu written by Acharya Shodhal in 12th Cen. AD with respect to herbals descriptions and formulations. The book is initially retaken and published under 'Ayurvediya Granthamala'; by Acharya Yadavji Trikamji in the year 1910 from Nirnaya Sagar Press, Mumbai. It is also published by Acharya Jeevram Kalidas in the year 1912 from Gondal Rasa sala publication shell Gujarat. It is translated with critical commentaries by Dr. Siddhinandana Mishra in the year 1983 and published from Chaukhambha Orientalia, Varanasi. Reprint in 2013.

Contributions: This book comprises 13 chapters. The book begins with the description of 18 *samskars* of *parada* along with its *dosas*. The book ventures an ideal way of classification of *Rasa dravyas* for first time, like *dhatu varga, maharasa varga, sadharan rasa varga* & *ratna varga*. Here *rajaverta* is considered under *maharasa varga* in place of *chapala* which is commonly considered. *Maharasa* is described first in a single chapter followed by *uparasa* and *sadharana rasa* combining in a single and separate chapter. Also description of all the suddha lauha, puti *lauha* and *mishra lauha* are given in one place The description of *parada bandha, samskaras* (1st chapter) and *parada bhasma* along with number of formulations (8th & 9th chapter) and their therapeutic indications indicates this book to be an adjunction of alchemical and therapeutic era which begins the therapeutic state of approach. Description of different tools, instruments and heating devices like *kupiyantra, deva yantra, ghanikaa yantra* are given at the tail order chapters

of the literature enriching the pharmaceutical approach of Ayurvedic medicines particularly *rasoushadhies*.100 important formulations which are *sadyoroganashaka* are explained in a separate chapter,the book deals with both *dehavaada* and *lohavaada.*

6. Rasa Ratna Samucchaya (RRS): 13 Century: *RRS* was written by *Vāgbhaṭa*. The author himself has briefly provided information on his nativity and other details[17]. Few consider the author of Aṣṭāṅga Saṅgraha and RRS to be the same and others consider them different. Gananatha Sen is of the opinion that the father of Vāgbhaṭa (author of RRS) was Saṅghagupta and not Siṃha Gupta[18].Commentaries: Hindi; 1.Suratnajwala 2.Tatvarthabodhin 3. Vijnanabodhini , Sanskrit;Dipika, Commentators: Hindi; 1. Kaviraja Ambika data shastri 2. Pandit Dharmanand Sharma' 3.D.A.Kulkarni Sanskrit; Pandit Hazarilal Shastri,Translations : In Hindi, Sidhiprada by Dr. Siddhinandan Mishra. In English by Dr. Ashok. D. Satpute, Publisher and Publication : Motilal Banarasi Das, Varanasi.1977, Number of volumes : One

Contributions: It comprises of all eight branches of *Ayurveda*, although it mainly deals with therapeutic aspects of *Rasaśāstra* and emphasizes the use of metals and minerals in treating nearly 68 types of ailments. It contains 30 chapters, 3871 verses and detailed description of 960 formulations. Classification of metals and minerals; description of some new instruments, formulations and averting use of metals and minerals in pregnancy are the key features of *RRS*. In the first chapter, *Vāgbhaṭa*, salutes 27 *Rasa Siddhas* and seeks their blessings. He goes on to explain the subject matter of RRS. This chapter describes various *Rasas, Uparasas, Lauhas, Yantras,* purification of *Lauhas*, extraction of *Sattva, Druti* and procedures of *Bhasma* etc., *RRS* consists of 30 *Adhyayas* (chapters) and the names of chapters are their respective numerical forms instead of the subject matter therein. The 30 chapters can be divided into 2 parts. The first 11 chapters provide information regarding pharmaceutical procedures of metals and minerals and theoretical basis of *Rasaśāstra.* The remaining chapters mainly contain formulations for treatment of various diseases. These 19 chapters deal with pathology, symptoms[19].Systematic division of book into *purvaardha* with 11 chapters dealing with the basic principles of *rasa shastra* while in the *uttarardha* different diseases and respective yogas, loha-visha-rasa kalpas have been describe,the arrangement of chapters in the order of *parada, maharasas, uparasas* and so on is impressive,*samanya shodhana* has been told for *maharasas, uparasas, sadharanarasas, ratnas* as well as for *lohas*, separate chapter dedicated to yantras with description of 31 *yantras*. *maanaparibhasa* is explained, description of diseases, *lakshanas* and useful *rasa yogas* have been explained, scattered references of all 4 *rasa rasayanas: khalwiya, parpati, kupi* and *pottalikalpas* are found, detailed explanation of concept of *vishas* and their importance in *rasa shastra* is found, *lohaajeerna* and *rasaajeerna lakshanas* and their *chikitsa* is described.

7.Ananda Kanda: It is believed that Sri Manthana Bhairava, a Siddha Yogi/Tantrik, a divine person, is the author of the text and it was written in 13th cen. ACE [20,21]. There is no correct information regarding the author. The book is written as a semi-dialogue between Lord Shiva (Bhairava) and Goddess Parvati (Bhairavi). Hindi translation by Prof. Siddhinandan Mishra and Tamil by Shri S.V. Radhakrishnashastri: Edition: 1" edition -2008: Publisher and Publication: 1. K Sambhashiva Shastri. Published by-Trivendrum sanskrit series under the authority of the Govt. of Her Highness Maharani Regent of Travancore-1928., 2. Edited with translation in Tamil, and introduction in Tamil and Sanskrit by-Sri S.V. Radhakrishna Shastri. Published by-S. Gopalan, Honarary secretary, Tanjore Maharaja Serfoji's Saraswati Mahal Library, Tanjore-1952., 3. "Siddhiprada" Hindi translation by-Prof. Siddhinandan Mishra, published by Chaukhambha Orientalia, Varanasi"., volumes: One

Contributions: The book *Anandakanda* seems to be special in a sense that a lot of emphasis is laid on the *dehavada* which means to maintain health and strengthen the body for achieving *mukti*. On the contrary other popular texts like *Rasarṇava Rasahådayatantra* and *Rasaratnakara* emphasise more on *dhatuvada*. Literal meaning of *Anandakanda* is 'Root of Bliss'[22]. It is divided into two parts called '*Vishranti'* or places of restful peace. Peace, as everyone knows, is a preliminary requisite of *Ananda* or Bliss. The first part is called *Amritikarna vishranti* and deals with '*Amritikarana*' or the art of defying old age, disease and death , The second part is called *"Kriyakarana vishranti"* and deals with chemical processes involving metals, metallic ores, alloys, and precious stones to make them serve as medical agencies for fighting disease, old age and death. Each part of this book is named as *Vishranti*" which indicates the state of tranquillity and feeling of ease. Each chapter of this book is known as *Ullasa*. It indicates that as one who goes through the book, he gets delighted & attains happiness. The chapters are named as Ullasa. There are 26 *Ullasas* in *Amruteekarana Vishranti* and 10 *Ullasas* in *Kriyakaranavishranti*. It is written in the form of *Padya* as conversation between *Bhairava* and *Bhairavi*. In the beginning of 20th ullasa Divya-Vayu-Yoga Rasayana[22], Goddess *Parvati* praises Lord *Shiva* that he is Panchakritya parayana that means he takes up the responsibility of five major tasks of this universe. They are Srishti-creation, Sthiti-position, Samharaannihilation, Antardhana-disappearance and Anugrahagrace. Goddess *Parvati* requests Lord *Shiva* to reveal the thorough knowledge of *Yoga Rasayana*, She inquiries about *Jivanmukti* and *Yoga swarupa*. Then lord Shiva reveals the secret of *Yoga* for the benefit of mankind.15 different gutikakalpas being told, general concepts like *dinacharya, rutucharya* have been included, ushapana is a unique contribution, an entire chapter dedicated to description and importance of *srishaila, shodhanartha, maranartha* many procedures were described elaborately. e.g. paradabhasma vidhi-31, more number of *yantras* and *mushas* have been told, 38 *divyoushadhi rasayanakalpas*, 64 *divyoushadhi* and 88 *mahoushadhies* are described, some of the drugs were newly introduced e.g. *साबुणि, हरिद्राश्मा,* the classification of *ratnas* based on origin is unique. *Anandakanda* is also a source of Tantric literature.

8.Rasa Ratnakara [23]: Author of the book - Nithyanath siddha – Son of Srimathi Parvathi Commentator: Hindi commentary by Swaminath mishra ,probable time period- may be end of 13th century- as siddha names like Nagarjuna, Yashodhara etc are mentioned. Yashodhara wrote Rasaprakasha Sudhakara whose time period was 13th century, so by this we can predict that time period may be end of 13th century. Some authors consider time period as 15th century. Sri Jeevananda vidyasagara in 1978 (Calcutta) translated sampurna grantha for the first time, Sri Yadavji in 1913 (nirnaya sagara press Mumbai) translated Rasayana khanda, Jeevaram kalidasa vaidhya translated Vadhi khanda in 1940 (Gondala). (These above 3 translations are not available), Swaminath mishra hindi commentator of Riddhi khanda is available now.

Contributions: The book *"Rasa Ratnakara"* is one among them which mainly deals with *loha vada*. *Rasaratnakara* contains 5 *khandas*, i.e., 1. *Rasa khanda* deals about *Vaidhya*, 2. *Rasendra khanda* deals about *Vyadhi*, 3. *Vadhi* or *Riddhi khanda* deals about *dhathu vada* or *loha vada*, 4. *Rasayana khanda* deals about *vruddha*, 5. *Mantra khanda* deals about *mantri* and *rasa siddhas*. The chapters of the book are named as *upadesha*, and total 20 chapters are explained. The commentator added four *Parishishta* (appendix). The *uparasas* and *maharasas* mentioned in this book are different from *Rasaratna samuchchaya*. In *uparasa*, *Kankshi* and *Anjana* are replaced by *Rajavarta* and *Bhoo khaga*. In the same way in *maharasa- Abhraka* and *Vaikranta* are replaced by *Hingula* and *Anjana*. Along with these, *Tutha* as well as *Sasyaka* has been explained. Specific method of *parada shodhana*, *Samanya shodhana* of *uparasas* and *shata guna jarana* of *gandhaka* are mentioned. *Bhunaga taila* has been explained in the context of *Naga ranjana*. While explaining *astadasha samskaras* of *parada*, "*Anuvasana*" has been mentioned. Artificial method of preparing *Ratna*, *Lavana* has been mentioned along with description regarding *dhanya vrudhi karana*. *Vajroudana* or the procedure for softening of *vajra* has been told,the book described in detail various procedures for *vedha* for *rajatakarana*, *suvarnakarana*, *suvarneekarana*, and *varnavivardhana* has been dealt to restore and enhance the colour, the preparation of different types of *vida* has been explained, the *satwapatana* of *makshika* and obtaining different kinds of *satwa* resembling different colours are described, *parada* bandha has been dealt elaborately, *sphutita dhatumrudeekarana* and *kathina dhatumru-deekarana* have been described, *liptamoosha* has been described.

9. Rasadhyaya [24]:14th Century:Author: The book is a compilation of Shri Kankalaya Shishya Yogi Virachita in 14th century AD. Editor, Publisher and Commentaries: The text book edited by Pandit Rama Krishna Sharma, with Rasaprabha Hindi commentary by Dr. Indradeva Tripathi, Published by Chaukhambha Sanskrit Samsthana, Varanasi. Champaka has written Sanskrit commentary. In 1386 1st Teeka on *Rasadhyaya* by Merutunga Jain.

Contributions:Author has named the Chapters of text as *Adhikara*. Subject matter of the text contains total 481 verses and is divided into 21 chapters, main features of the chapter are: *Paradasaptakanchukadoshas* and *Rasa panchadosha*. Mentioned five types of *Rasa Pooja*: *Rasabhakshana*, *Rasasparshana*, *Rasadan*, *Rasadhyana*, *Rasapooja*.*Parada samskaaras* are explained in an orderly manner compared to other texts, different *rajjis* are explained, *dhatumaarakadravyas* are told for individual *dhatus*, the preparation of different *peethi* and *khotas* are well explained, *paradavedha* has been dealt in detail, it has been told that *gutika*, *anjana* and *parada* are of 84 types. Acharya's unique contribution is seen in this text. In this text, the methods of *Parada Samskara* are different from other contemporary texts. In the order of the *Parada Samskara*, he first described the *Patsarana*, which is their fundamental contribution. In this text Acharya explained the process of Heerak (diamond) testing and the formation of *Gandhaka Taila*. Gold production has been described by *Gandhaka Taila* and *Gandhak-Druti Pishti*. Description of different types of *Druti* in the maximum chapters, are the specialty of the text. In this text Acharya quoted that Lohavada and *Dehavada* will be achieved by the consumption of *Parada* formulations, *Khot* formulations and *Gutika* formulations. Acharya has highly praised the treatment of Rasaaushadhi very effectively. In *Rasadhyaya* the Author has included different types of *Druti*, *Pishti* and *Rasa Aushadhis* by his own experience. There is no any doubt that *Rasadhyaya* is one of the best texts of its time.

10.Rasopanishad[25]: The Hindi commentator of this book Vaidya Badarinarayan Sharma says it is a compiled book and matter is collected from 'Rasa mahodadhi'. He even says that he has corrected the grammatical mistakes and cleared the ambiguity observed in the original Sanskrit manuscript.Commentaries and Commentators: 1. English by Prof. Dr. Gyanendra Pandey 2. Hindi by Vaidya Badarinarayan Sharma of Krishna Gopal Ayurveda Bhavan, Ajameer, Rajasthan: Edition: English - First, 2011, Hindi-1 Publication-1959, 2nd Publication – 2008.

Contributions:: There are 16 chapters named as *Adhyayas*.In the first chapter itself contents of all the chapters in brief is given. it enables us to know the exact number of chapters in the text contained, 6 *parada samskaaras* and 10 *rasakriyas* described is unique, all the sixteen chapters mainly concentrate on procedures and drugs useful for *vedhakriya*, new yantra like *nirvana yantra* have been told with reference to context, description of *kurpas* is a unique contribution, *abhraka chaarana* is dealt more elaborately in comparison to other texts, the preparation of different *drutis* is given, the description of *agnijara* and its types is a unique contribution of the text, the description of *jaru* and its processing.The available literature mainly concentrates on *Lohavada* concept of *Rasashastra* with much emphasis on *Dhatudrutis*

11. Rasa Paddhati: *Rasapaddhati* was written by Acharya Bindu. The author has introduced himself in the very first verse of the text. The book is written in Shardulvikridit Chhanda. There is no direct reference obtained regarding the time period of the author. The text Ayurved Prakash, which was written in sixteenth century, has quoted references from *Rasapaddhati*; hence, it is believed that this text was written in the fifteenth century[26]. This text was first revised and edited by Acharya Yadavji Trikamji in 1924 and published by Nirnay Sagar Press, which is unavailable today. Hindi commentary named Siddhiprada was written by

Acharya Siddhinandan Mishra and published by Chaukhambha Orientalia in 1987 and its second edition was published in 2005, which is available to the scholars. This scrupulous edition has been taken into contemplation for writing this paper[27].

Contributions: After reviewing the text *Rasapaddhati*, it is found that the whole text is written and completed in 231 verses. It mainly comprises *Parad samskar*, its *shodhan, jaran, Saran, kraman*, and types of *murchhana*. Description of *Maharasa, Uparasa, Ratna-upratna, Dhatu*, and description of few diseases ended with 49 herbal and herbomineral formulations.The concept of trividhachikitsa told is unique. 17 *yantras* being told for Jaranasamskaaras, The word of caution as to *Rajata* and *Naaga* should not be consumed alone indicates the importance given to safety, The preparation of *Rasakarpura* in *vidyadharayantra* is a unique contribution.

12. Rasendra chintamani: *Rasendra chinthamani* is a 15th century AD text book. It was written by Acharya Shri Dundukanatha, who was Acharya Kalanatha's shishya. According to Acharya, he wrote this text based on his own experienced knowledge and methods, including only those preparations and procedures that are useful in the field of rasashahstra. It is divided into nine chapters and is known as adhyaya. was first published in 1933 by Jaipur nivasi Acharya Sri Maniramasharma with Sanskrit commentary, but it is no longer available. It was then released in its mularupa by Acharya Yadavji Trikamji in 1981.Apart from this, Sri Ramachandra Guha published a book with the same title with 9 chapters in 1987 through Sri Jivananda Vidyasagar in Kolkata. Both of these are currently unavailable.Scholars can currently obtain a copy of Sri Siddhipradahindivyakhya by Sri Siddhinandan Mishra, which was written by Chaukamba Orientalia in Varanasi. According to Acharya Dundukanath, the contents mentioned in the text are only those that he has personally experienced and performed in the presence of his guru.

Contributions: There are 9 chapters and are called as '*Adhyayas*' with a total of 1848 shlokas The description of *Dukkhanivruttimarga* is unique, The author has very beautifully explained the *Guru-Shishyalakshanas, Pathya-Apathya* for *swastha* is also told, Detailed description of *Lohasevanavidhi, Shresta Anupana, Phalakandavarga* etc. have been dealt, *Rasa yogas* described are unique and are according to disease condition.

13. Rasa Manjari [28]: *Rasamanjari*, a seminal work on *Rasashastra*, was authored by Acharya Shalinath, son of Sri Vaidyanath, in the 15th century. The text, comprising 10 chapters, provides comprehensive insights into the preparation and application of various *Rasadravyas.* The book is known for its distinctive approach to alchemical practices, offering detailed methodologies for creating *Rasaushadhis* (medicinal alchemical compounds). The author describes his work as a collection of knowledge that resembles a group of bees creating honey from diverse juices. This metaphor symbolizes the variety and complexity of *Rasaushadhis* that *Rasamanjari* seeks to explain. Just as bees draw from various nectar sources, the text compiles a wide range of alchemical processes and substances, each derived from distinct materials and transformations. The Hindi translation of *Rasamanjari, Siddhiprada,* by Sidhinandan Misra, Published by Chaukambha Orientalia, Varanasi, has been instrumental in making this ancient work more accessible to contemporary readers. This review aims to explore the contributions of *Rasamanjari* to the field of *Rasashastra*.

Contributions: *Rasamanjari* contains a total of 862 slokas (verses), which are systematically organized into 10 chapters. These chapters cover a wide array of topics, beginning with *Parada Prakarana*, followed by description on *Parada Jarana and Murchana, Uparasavarga, Vishaniroopana, Dhatu Shodhana Marana, Rasayoga Niroopana, Rasayanadhikara, NetranjanaKesharanjana Vidhi, Baalaroga* and *Arishtavijnana*. A separate chapter dedicated to *yogas* related to *netraroga* and for *kesharanjana, Palitya, Keshashukleekarana, Loma shatana*, One among few *Rasa* texts to elaborate on *Arishtalakshanas*, 81 different *Rasa yogas* are described for different diseases.

14.Rasa Sanketkalika[29]: Kayastha Chamunda, son of Kumbha, was a prominent figure of the 15th century. A member of the Naigama Kayastha clan, which is classified as a Kshatriya caste, Chamunda was a devout follower of the Shaiva sampradaya. He resided in Yoginipattana, also known as Yoginipura, a town in Mewad, Rajasthan. Edited by vaidya yadavji tricum ji acharya in hindi (1912). This text is translated & published in Telugu as well as in English languages by Uttama Vaidya Pammi Sathyanarayana Shastry of Andra pradesh. First editon was published in 2005 by Chowkhamba Krishnadas academy, varanasi. The text Contains 140 Pages, 5 Chapters entitled as Ullasa, 303 verses 59 yogas (formulations).

Contributions: *Rasa Sanketa Kalika* provides a wealth of information on the preparation of alchemical medicines and the therapeutic use of minerals and metals in *Ayurvedic* practice. It offers detailed methods for creating *Rasa Bhasmas* and applying *Rasa Yogas*, which are integral to achieving specific therapeutic goals. The text highlights the efficacy of its formulations in treating various health issues, with each chapter concluding by affirming the authority of Kayastha Chamunda's teachings, enhancing the credibility of the methods. There are certain important *yogas* described which give faster results as in case of *Shighra Jwaraari rasa* which is said to cure fever within 2 yaamas.Classification of *Rasa Bhasma* by *Vidhana Bheda* and *Varna Bheda*, Various easy methods to prepare Rasa Bhasma, Quantities of Pitta & Visha to be added in Gutika are specified for the 1" time, Dosage of *Rasa Bhasma* For *Nara, Ashwa* & *Gaja*. The dosage of Rasa bhasma for the animals is specified for the first time, *Shighra Marana vidhi* i.e. quick method for incineration of *Dhatus* has been told, *Loha Amrutikarana* is a special concept, mentioned for first time, The concept of *Visha Marana* has been dealt for the 1º time, The number of *Upavishas* mentioned are 6 but only 2 are explained in detail,

15. Rasendra Sara Sangraha: *Rasendra sara sangraha* is one of the oldest text book belongs to 14th century and most exhaustive text of Rasashastra, by a great erudite scholar in the field of *Rasashastra* shri Gopal Krishna Bhat. *Rasashastra* is one of the important branches of ayurveda, which revolutionized the ayurvedic pharmacopoeia in the medieval period. Many scriptures are written during that period, in that Contributions: The book contains 5 chapters. *Rasendra sara sangraha* is also one among them. It is an exemplary work of compilation of various material related to *Rasa* and other minerals. It deals with minerals and metals as well as therapeutics according to diseases. it contains many effective formulations. In *Rasendra sara sanghra* almost all *upavishas* are used like *Ahiphena, Jayaphala, Kuchala, Dhattura, Gunja, Bhallatak* and *Karaveera* commonly and *mahavisha Vatsanabha* also used in many formulations. The formulations which are having the visha dravya as ingredient indicated in many diseases like *Jwara, Grahani, Krimi, Kusta, Arsha, Gulma, Udararoga* and *vatavyadi* mainly in *shoola*. As the name signifies, the text is the *samgraha* of different *Rasa yogas*, In total 601 *yogas* are explained, Description of all 4 *Rasa rasayanas*, *Rasa yogas* for almost all the diseases including *Baalarogas* and *Visha, Rasamanikya* described, Specific *Maarakadravyas* helpful for incineration of *Dhatus* are mentioned.

16. Ayurveda Prakasha: This book was written in 17th century A.D. by Madhava Upadhyaya. He was born in Savrashtra in Brahmin family. During his residence in Kashi he wrote "*Ayurved Prakash*". This is conclusion derived from the ending of the Grantha. The Grantha Seems to have been written during 17th Century as there is mention of *Bhavprakash* which was written in 1600Century A.D. Apart from this Grantha Madhavopadhyan composed Pakawali Grantha is also found Besides this no other information is available about the writer. It is Edited by Vaidya Vachaspati Shri Gulraj Sharma Mishr in 01-01-1943. He was the student of Pranacarya Pandit Govardhan Sharma Chhangani Bhisaka Kesari. He encourage him to write this book. He Prepared this book with tika named Arthavidyotini Tika itis written in Sanskrit as well as Hindi. This book is not only useful for *Ras Shastri* but also useful for clinical practitioners.

Contributions: There are 6 chapters called *'Adhyayas'*.Unique way of classification of drugs considering *Parada* an the only *Maharasa*, 20 other drugs as *Uparasas*,Classification of *Murchanaa* is different from the earlier texts, *Baddhaparada, Murechita Parada* and *Mruta Parada* lakshanas being told, Simple adoptable procedures of *Shodhana* and *Maarana* for few drugs Ex: *Gairikashodhana* by *ghritabharjana, Abhrakamarana* by subjectiong to *mardana* alone with *Tankana* and *Godugdha, Hingulamarana* explained for the first time, Lohashuddhilakshanas explained in unique way, *Vangabhasmanirutheekarana* described for the first time, *Nirdhoomapareeksha* told for *Haratalabhasma, Bhasma siddhi lakshanas* told as *kachakachitinadantaagre-samaaniketakirajasa*.

17. Rasa Kaamadhenu [30]: The text *Rasakamadhenu* is a compilation work which is done by Vaidyavara Sri. Chudamani Mishra. He was born in an educated, famous Sakadvipiya Brahmin family. Author's name is mentioned in the end of forth pada. It is also mentioned that his Grandfather is Vaidya Balibhadra Mishra and father is Hari Ram Mishra. First 3 padas of this text was revised by Acharya Yadavji Trikamji. Last Chikitsa pada was revised by Vaidya Jivaram Kalidas Vyasa. Hindi commentary named 'Suvivruthi' was written by Acharya Gulraj Sharma Mishra & Dr. Santhosh Kumar Mishra. Hindi preface was written by Vaidyaraj Vinayak Thakur. Forward was written by Sidhinandan Mishra

Contributions:: *Rasakamadhenu* is one among the important texts in *Rasasastra* which deals with detailed description regarding *Rasadravyas* along with their therapeutic uses. Even though it is a text of modern period, author gives equal importance to *Parada* karma as well as therapeutic applications. It also provides elaborate explanation regarding various diseases as well as the treatment using *Rasaoushadhis*. Numerous *Rasayogas* are mentioned in different contexts of *Chikitsa pada* which still remain unexplored by *Rasachikitsakas*. The book is divided into 4 components called *Paadas*. They are *Upakarana Paada; Dhatusangraha Paada; Sootakriya Paada* and *Chikitsaa Paada*. Each *Paada* further divided into chapters called *'Adhikaras'*.The book has introduced many new yantras such as *Kinnarayantra*, *Siddha sarayantra* etc., The arrangement of chapters is unique where in the instruments and drugs useful in *Parada karma* are explained in the first *Paada*, followed by metals and minerals described in second one, the different procedures of *Parada* in the third one and finally dealt with diseases and treatment, The book has given equal importance to both *Dhatuvaada* and *Dehavaada*.

18. Rasa Tarangini [30]: *Rasatarangini* was written by Pranacharya Sadananda Sharma. Colophon given at the end of last chapter clearly indicates the author of this text as Sadananda Sharma. He belongs to an ethnic Garhwali Brahmin family of originally Ghildiyal family name. His father is Pandit Jeevananda and mother Saraswati Devi. He also states that he is a resident of Khola Gram located near Srinagar which is under Grarhwal Mandala. Presently it is a small village in Srinagar. The author states that written work of Rasatarangini was completed by him on Chaitra Trayodhashi, Vikram Samvat 1980. In terms of Gregorian calendar, it corresponds to 3 rd March 1924, on the day of Maha Shivratri. Sadananda Sharma has dedicated *Rasatarangini* to his teacher, Kaviraj Narendra Nath Mitra. At certain places, he also quotes the expertise of his tutor over *Rasashastra* and acknowledges his reverence at certain places in the text. The text is written in poetry form throughout. Foreword of the text is written by Sadananda Sharma himself, whereas prologue by Hari Dutt Shastri, the Sanskrit commentator of the text. Hindi preface is written by Dharmananda Shastri. The book is complete in it and contains 24 chapters termed as '*Taranga*' encompassing 3651 verses. encompasses *Rasatarangini*. Complete text is written in prosody form. The text is sound as far as its grammatical and literary aspects are concerned, which reveals the author's great spirit in literary display. A list of contents of chapters of *Rasatarangini* is placed below for detailed information.

He has also avoided mentioning the unnecessary varieties of different *Rasa Dravyas* for example he mentions only on type of *Gandhaka*. It is a deviation from previous texts. He enumerates many synonyms of *Rasa Dravyas*. He has not classified the drugs as routinely under *Maharasa, Uparasa* etc. Rather he has stuck to more scientific background for classification of *Rasa Dravyas*. He has placed all arsenicals in chapter 11 and other bearing similar resemblance like *Khatika, Sphatika* and *Godanti* are also placed in same chapter. All the *Dravyas* obtained from sea are placed in 12th chapter (calcium preparations). *Mandura* has been placed in *Lauha* chapter to indicate presence of iron in it. *Ratnas* and *Visha Dravyas* are separately placed. *Kasisa* contains iron, so it has been placed under *Upadhatu Varga*. Drugs of herbal origin like *Kampillaka* and *Kamkustha* have been excluded. Similarly *Agnijara* has been omitted due to its no therapeutic use in present era. *Mishra Dhatu* (alloys) contains *Dravyas* having fractions of more than one metal. Therefore *Pittala, Kamsya, Anjana* and *Shilajatu* have been clubbed together. Acharya Sadananda Sharma has also mentioned artificial preparation of *Hingula, Manahshila, Haratala* etc. He has Sanskritized few chemicals of modern chemistry and discussed their preparation and usage in detail in Ayurvedic parlance. Few sanskritized terms notable to mention are *Gandhakamliya Yashada, Sorakamliya Rajata, Soraka Drava, Lavana Drava* etc. To pay a tribute to his guide, Kaviraj Narendra Nath Mitra, Sadananda Sharma has included his comments in a special chapter named *Chapala Nirnaya* placed after 9th *Taranga*. It includes ancient and modern description pertaining to *Chapala* concerned with its correlation for Bismuth or Selenium. Citing various references, it is concluded that selenium should be considered as *Chapala*. About each drug -Orderly arranged: Synonyms, *Grahya Lakshanas, Doshas, Shodhana, Marana, Gunakarma, Maatra, Amayika Prayoga*, some important *yogas.Pottali* is not mentioned.*Yogas*: Many simple *yogas*, could be prepared and used.

19.Rasa Jala Nidhi[32]: *Rasa Jala Nidhi* is a compilatory book in *Rasashastra*, where it includes the matter from varied books that are extinct currently . The author has given detailed history of 27 *Rasa- siddhas* as found mentioned in *Rasaratna Samuchchya*. The book is an ocean of Indian Chemistry and Alchemy of the 20th century. The present work is an expository of the text *Rasa Jala Nidhi* and to focus on its contributions and specialities in the field of *Rasashatra*. *Rasashastrais* a branch Ayurveda which deals with a combination of metals, minerals and herbal drugs helps in forming herbo -mineral formulations .*Rasa-Jala-Nidhi* compilatory work in *rasashastra*,it includes the matter from various books that are extinct now and it is style of compilation of Indic verses transmitted to us from generation to generation, either through oral tradition or by approach of citations occurring in ancient texts on drugs. this can be terribly elaborate add *Rasa Shashtra* in Indic with english literature by the author himself. A Bengali scholar, the author, BhudevaMukherji, wrote this in five Volumes. primarily based on the previous works.

Contributions: 3 Types of *paradagatis*, *Parpatis* like *Mahesha parpati*, *Brahma Parpati, Nakuli parpati rasa*, *Unmatta parpati rasa* has been mentioned and explained in detail,8 types of *Mandurayogas* like *Koladimanduram, Gudamandura*, etc has been explained, Explanation regarding *tri-loha*, The artificial preparation of *SarjiKshara* has been explained,*Shat lavana – Navasara / Chullika ,Tailapatana* using any kind of seed has been explained, The unique yantras include *Khalachariyantra, chakra yantra ,Gowriyantra*, and *Bakayantra.Rasa vidya* is classified into *Kshemavidya, Dhatuvidya* and *Rasa chikitsa*. Rasa chikitsa further classified into *Roga chikitsa* and *Rasayana chikitsa*, 16 Types of Ratnas, Different types of *Haratala, Svarna Makshika, Gouri Pashana*, Loha have been mentioned, Parpatis like *Maheshaparpati, Brahma Parpati, Nakuliparpati rasa, Unmattaparpati rasa* has been mentioned and explained in detail, All the four *Rasa-Rasayanas* have been explained, *Yogas* explained in this text are simple and easily preparable. Detailed description of *Tamra- Shwetikarana* (or bleaching of copper) has been given. The author has also explained about the importance of *puta* in context with *Abhraka- Marana*, where the author has said that if *Abhraka* is incinerated with puta for 18 times, it becomes pacifier of *Vayu*, 36 times it becomes pacifier of *Pitta*, and 54 times as pacifier of *Kapha*. Author has also mentioned 6 varieties of *Shilajatu.* The author has also specified doses of bhasma of Rasa- dravyas viz., dose for *Parada* and *Swarna bhasma* is 1 *gunja*

20.Rasamritam[33]: 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. 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.

This book consists of total 09 chapters and 09 indices. Unique classification of drugs based on chemical nature ,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 regarding different pharmaceutical and clinical aspects in 09 indices. Information regarding *Puta* and preparation of *Bhasma* is given in 1st index. 2nd and 3rd indices consist of description of *Chapala* and *Shilajatu*. In 4th index special discussion on *Makshika* and *Vimala* is described. Authors own view on *Rasaanjana* is given in 5th index. 6th and 7th 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 8th index. 9th index consists of the list of references from Charaka and Sushruta Samhita, where *Rasa Dravyas* are described.

21.Siddha Yoga Sangraha[34]: It is written by Vaidya Yadavji Trikamji Acharya in 20th Century and published by Shree Baidyanatha Ayurveda Bhavana Limited Great Naaga Road, Nagpur-9,Contributions: The book is in Hindi but language is simple and flawless and is in only one volume.The book is a good compilation of useful formulations for the benefit of practitioners, Most of the *yogas* described are easily preparable, Herbal, Herbo-mineral and mineral preparations all have been told, *Yogas* are described according to the disease and made it convenient for the readers, The formulations of Unani medicine are also described, Newer dosage forms like ointments and liniments have been included, The appendix gives valuable information with regard to *Shodhana* and *Marana* procedures of different metals, minerals as well as plants. Different formulations are described for specific diseases.

22.BhasmaVijnaaneeyam[35]: In 20th Century *Harisharanaananda Vaidya* written this book and published in *Ayurveda Vijnana Granthamala Karyalaya*, Amrutsar and Punjab Ayurvedic Press, Akaali Market, Amrutsar.1ª edition was published in 1954. Contributions:The book has totally 11 chapters. First 8 chapters are named as '*Adhyayas'* and last three have been named as '*Paadas*'.The book is unique among the *Rasa* texts where in *Jnanavikasana* and *Srishtiutpatti* are explained, The difference between *shiva* and *Rudra*, different *avataras* of *Shiva* are explained, Different *siddhantas* are elaborately explained, Different *Siddhas*, their pictures have been depicted, The author has substantiated his views on scientific grounds,The book is one among the rare texts where Classification of metals, their properties are elaborately explained, Elements such as Hydrogen, Helium, Oxygen, Carbon-dioxide are explained in detail, *Bhasma* in Allopathy and Unani books are given which is unique , *Bhasmeekarana* procedures, instruments, heat to be applied are dealt.

23.Parada Vijnana[36]: In 20th Century Written by Vaidya Vasudeva Mulashankara Dwivedi and published by Shri Sharma Ayurveda Mandira, Datiya (Madya Pradesh),He was appointed as Professor of PG Section of Jamnagar University (1954). He became the Director of Ayurveda Section-Gujarat in 1960. Contributions: The author has explained elaborately the synonyms, historyetc of *Parada* according to classics and substantiated them with modern points, The classification of *Paradadoshas* based on their properties, *panchabhoutikata* is unique, Pictorial representations of *Navya Paatana Yantra (Vasudeva Yantra)* and Shree Ramanarayana *Yantra* have been given and explained, The practical difficulties one has to encounter while doing the 8 *samskaras* of *Parada* and ways to tackle them have been enumerated by the practical experience of the author, The effects of *Parada* on different systems of Human body such as on GI tract, Liver etc, its absorption into the system, mode of action have been explained in detail quoting references from both classical and modern day medical books.*Pottali rasa kalpas* are explained in detail, *Savveera*, a *nirgandha yoga* of *Parada* practised in Siddha system of medicine has been dealt, While explaining *Kupipakwarasayanas* the author has given graphical and tabular presentation of temperature rise against timings which is practically very useful in preparing these *rasayanas*, In the last chapter the development of *Rasa shastra* according to different texts along with different regions given is unique of its kind.

24.Kupi Pakwa Rasa Nirmaana Vijnana[37]:Written by Swami Harisharanaanad Vaidya in 20th century and published by Punjab Ayurvedic Press, Amrutsar.Contributions: The book has following features- *Upodhata*: With 2 chapters, 4 Chapters, Formulations, Index of Diseases, Appendix with names of Metals and Minerals in alphabetical order, corrections, importance of the book.The origin and development of *Rasa vidya* around the globe is discussed, The contributions of different scientists around the world towards *Rasa* vidya are discussed, The concept of *Dhatuparivartana* has been dealt in detail on grounds of scientific facts, The knowledge of *Padartharachana* in relation to *Kupipakwa kalpas* described is unique and informative in understanding the formulation, Every aspect of *Kupipakwakalpas* right from the history, instruments required, the methods of preparation, temperature, duration, the scientific facts are discussed in detail in systematic manner, 260 different *kupipakwarasayanas* are described, The formulations are dealt in alphabetic order, The classical references, the therapeutic indications, dosage, *anupana* are given for *yogas*, Author has given his opinion regarding few of the *yogas.*

25.Rasatantrasaar Va Siddhaprayoga Sangraha [38]: 20th century,Author: Krishnaanandji Maharaj. The author was born on 3rd July 1889. He was the founder of Krishna Gopala Ayurveda Bhavan in Rajasthan.translatied in Hindi.Edition: Prthamakhanda - 18th edition; Dwiteeyakhanda-11th edition,Publisher and Publication: Krishna Gopala Ayurveda Bhavan,Number of volumes: 2,Contributions: Classification of *Aushadhi* in first chapter is unique, the concept of *Virodhi Oushadhi* (Antagonists) is dealt, Preparation of *Bheemaseni Karpura* is given, The combination of different drugs & preparation of their *Bhasmas* has been given, Individual formulations have been dealt under individual categories, Each formulation is described with particular reference,ingredients, method of preparation, indications, dosage, *anupana* and mode of action, The mode of action of formulations are elaborately explained giving equal importance to modern scientific thoughts, Many different categories of formulations have been dealt. Appendicies give knowledge of special formulations.

26. Rasatantrasaara Va Siddhaprayoga Sangraha [39]: In 20th Century it written by Vaidya Pandit Hariprapannaji Sharma. He belongs to Arra of Bihar.Commentaries & Commentators: With Sanskrit and English Introduction and Notes by Vaidya Pandit Hariprapannaji Sharma,Edition: Reprint 2004,Publisher and Publication: Chaukhambha Krishnadas Academy, Varanasizonta,Number of volumes: 2 ,Contributions: The book is the largest compilation of Mercurial preparations published in two different volumes, The *yogas* with variety of ingredients and different methods of preparation but with the same name are mentioned in this work. For example; *Agnikumara rasa*-50 types, The references of Published, Unpublished manuscripts are compiled and presented in the book, The author has written the text to help the practitioners to get all the *yogas* at one place, Single *yogas* with all the available references from different texts have been described. *Rasayoga sagar* being a comprehensive source for

compilation of *Naga* formulation. Total 231 number of various formulation compiled from *Rasayoga sagar* which contain *Naga Bhasma* (Lead calx form) as ingredient only.

27. Rasendra Bhaskara [40]: In 20th century written by Pandit Shri Lakshmi Narayan Sharma son of Pandit Ramkumarji. After studying and analyzing different *Rasa* texts the author has written this book.Translations: Hindi translation (Siddhiprada) by Dr.Siddhinandan Mishra and Dr. K. K. Zala,Edition: First Edition: 2009,number of volumes: One,The chapters are called Mayookhas.The word Mayookha means 'a ray of light'. Such 12 Mayookhas constitute the book.Contributions: Orderly arrangement of chapters.The treatment for *Apakwa Ashuddhasevana* of all the drugs is explained.

28.*The History Of Hindu Chemistry*[41]: In 20th century written by Acharya Prafulla Chandra Roy, Edition: 1956,Publication Board: Dr. S.S. Bhatnagar, Dr. D. Chakravarti, Dr. J. C. Ghosh, Dr. J. N. Mukherjee, Dr. K.G. Naik, Prof.P.Ray,Publication: Indian Chemical Society 92, Upper Circular Road, Calcutta 9.Salient features of each chapter: This book is divided into 6 divisions with different number of chapters followed by Appendix, verses from Sanskrit and Tibetan texts, the name and subject index. The History of Hindu Chemistry' is one of the rare, important books published in twentieth century. Sir Prafulla Chandra Ray, the author of this book, who was a chemist by profession, has contributed greatly to the field of *Rasashastra* in his own style. The book in two volumes is in English and has achieved international recognition. The work became the cause of enlightening people specially, the Westerners about Indian Alchemy which, they were till then unaware of. In a way, 'globalization' of the concepts of *Rasashastra* has its starting point in the works of Sir P.C.Ray. The author has touched almost every area of *Rasashastra* of course, from the standpoint of modern Chemistry. A critical analysis of his contributions, the narration of the contents of the book are detailed in the paper.

Volume 1: Preface to the first edition:Written by P.C.Ray on the first of May 1902,Preface to the second edition;Written by P.C.Ray on the first of January 1904, Table of Contents: 1: Alchemical ideas in the Vedas,2: The Ayurvedic Period,3: The Transitional Period,4: The Tantric Period,5: The Iatro-chemical Period, 6: Indebtedness of the Arabians to India.

Volume 2: Preface Written by P.C.Ray on the first of June 1909

Preface:Written by B.N.Seal on the twenty third of May 1909-1: On the age of Nagarjuna and Buddhist Alchemical Tantras , 2: Further cultivation of Alchemy , 3: Circa 1350 A.D. , 4: Modern Period (1500 A.D. to 1600 A.D.) , 5: Indigenous origin of Indian Alchemy , 6: Some noted Indian Alchemists and their works.

DISCUSSION :

1) Rasendramangalam- The author in the very first chapter has told the contents of all eight chapters in brief indicating the book has 8 chapters.The book gives importance to both Dehavaada as well as to Lohavaada.
2) Rasarnavam- The book deals with Lohavaada in detail and very less about Dehavada
3) Rasa Hridaya Tantra- As per the name of the text 'Rasa Hridaya Tantra' it deals with Rasa (Parada). It has dealt mainly the concepts of 'Lohavaada' and very less of 'Dehavaada'.
4) Rasendrachudamani- The text is more contributory towards Lohavada than Dehava
5) Rasa Prakasha Sudhakara- This is a unique book with the knowledge of Dehavaada, Lohavaada and Chikitsavaada.Though author has described different useful yogas he has not explained the diseases.Method of preparation of artificial corals and pearls is an unique contribution of this book.
6) Rasa Ratna Samucchaya- The book a compilation and essence of different Rasa texts viz Rasa HrudayaTantra, Rasarnava, Rasendra-chudamani, Rasa prakashasudhakara. The author himself says in the 1 chapter: 'eteshaamkriyanteanyeshamtantranyok. tyasangraha'2/3rd of the Purvardha is taken from the text Rasendra-chudamani of Somadeva, the author has added his own points,The text can be considered as a link between Lohavaada and Dehavaada.It is a text of high values to a Rasa chikitsaka. Not only does it give information about Rasa dravyas, methods of preparation of various Rasa yogas, modes of their administration but brief information about different diseases is also available.
7) Anandakanda- Language- Sanskrit, Padyaroopa.The text is a part of Tantric literature.Dehavada concept has been described elaborately along with Lohavada.An extraordinary provision in this treatise is the disciplined life and propitiation of deities prescribed as a preliminary to the undertaking of the different metallurgical procedures.
8) Rasaratnaakara- It is a book on 'Lohavaada' where in preparation of Suvarna and Rajata are described by using different lower metals and following different methods.
9) Rasaadhyaaya- The book is more informative towards Lohavaada and Ashtadasha Paradasamskaaras
10) Rasopanishat- The available literature mainly concentrates on Lohavaada concept of Rasa shastra with much emphasis of Dhatudruti
11) Rasapaddhati- Rasa Paddhati is a Laghu Rasa grantha which mainly focuses on description of Rasa dravyas.
12) Rasendra Chintamani- The text highlights both aspects of Rasa vidya - Dhatu and Dehavaada with more focus to DehavaadaExtra emphasis is given to Vishas and Vishachikitsa.Yogas are described as per the diseases but not according to drugs.
13) Rasa Manjari- This book is a good compilation and it emphasizes both Dhatu and Dehavaada.Special emphasis is given to cosmoceuticals

14) Rasa sanketakalika- One among important Rasa texts, but neglected work of Rasashastra.Various Shodana, Marana procedures & Yogas are explained, which are quick, easy, less time consuming, cost effective & not laborious.More importance is given to formulations rather than Rasa dravyas.All Therapeutic formulations are given w.r.t specific disease.
15) Rasendra Sara Sangraha- The book is more contributory towards Dehavaada. It is a practitioner friendly book with description of numerous simple and effective formulations.
16) Ayurveda Prakasha- The author Madhupaadhyaaya Madhavacharya can be considered as a contempror of Bhavamishra because of following reasons:Inclusion of terms such as 'Phiranga', 'Rasa karpoora'.The trend to add the suffix 'Prakasha' was prevelant during 16th-17th century. Ex; Bhavaprakasha, Arkaprakasha, Dharma prakasha etc.
17) Rasa kaamadhenu- This book is a good compilation of the earlier texts with few interesting additions. The book is a good collection of information about Rasa shastra. The subject matter is divided in a meaningful way by which it could be utilized to prepare Rasa preparations and use them clinically.
18) Rasa Tarangini- Rasa Tarangini is a complete text of Rasa Shastra written on the basis of classical Rasa Shastra principles with applied chemistry.It is the only text where all the information regarding principles of Rasa shastra, Different procedures, Drugs, Amaikaprayoga, and Yogas are available. He has removed controversies.
19) Rasa Jalanidhi- It's a compiled practical and clinical oriented book.Book deals with Lohavada and Dehavada giving more emphasis to Dehavada
20) Rasamritam- The text is written in the light of modern scientific knowledge. The text is useful by other medical branches like Unani as well as Modern system of medicine. The text is concise yet covers the basics of Rasashastra.
21) Siddha Yoga Sangraha- The book is written on the basis of 50 years of experience of the author in the field of practice.The inclusion of unani formulations reflects the knowledge of the author in respective field. The book is a good source for practitioners and students
22) Bhasma Vijnaaneeyam- The book is unique of its kind. Different concepts have been explained by the author substantiated well on scientific facts. Also references from ancient texts as well as modern chemistry and metallurgy texts have been quoted.
23) Parada Vijnana- As the name suggests the book elaborates on Parada, covering almost all the related aspects of it with both classical references well substantiated on modern grounds.
24) Kupi Pakwa Rasa Nirmaana Vijnana- The book is one of its kind dedicated to description of Kupipakwarasayanas where in facts related to Dhatuvaada, Dhatuparivartana are discussed in detail.
25) Rasatantrasaara va Siddhaprayoga Sangraha- Classification of Aushadhi in first chapter is unique.The concept of Virodhi Oushadhi (Antagonists) is dealt.Preparation of Bheemaseni Karpura is given.The combination of different drugs & preparation of their Bhasmas has been given.Individual formulations have been dealt under individual categories. Each formulation is described with particular reference.
26) Rasa Yoga Saagara- It is an excellent and vast compilation of Rasa yogas.The book is highly useful to an Ayurvedic physician as well as Ayurvedic pharma industry. A physician can help the ailing people by the judicial usage of these Rasa yogas.
27) Rasendra Bhaskara- A good and orderly arranged compilation work of Rasa dravyas. But there is no information about yogas, Rasa chikitsa and Dhatuvaada.

By observing the contents of the works the fact is noticed that all the authors have compiled the aspects of Rasashastra in their own style, be adding some new ideas and also some successful formulation prepared and tried by them. Some works have chiefly considered parade and mainly its description were found, but many works have given importance even to other rasa, dhatu, ratnoparatnas etc.

CONCLUSION: In spite of many discussions different opinions are there regarding the time period of the works mentioned earlier. The book written during this century appears to be mere compilation from the older texts with little or no inclusion of new ideas

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