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(Continued)

Fourth Chapter

Sanskrit Text

English Translation

Notes

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मांसद्रवोम्लवेतश्च चुल्लिकालवणं तथा ॥ 64 ॥

स्थूलं कुम्भीफलं पक्वं तथा ज्वालामुखी शुभा ।
द्रवन्ती च रुदन्ती च पयस्या चित्रमूलकम् ॥ 65 ॥
दुग्धं स्नुह्यास्तथाऽर्कस्य सर्वं सम्मर्द्य यत्नतः ।
गोलं विधाय तन्मध्ये प्रक्षिपेत्तदनन्तरम् ॥ 66 ॥
गुणवन्नवरत्नानि जातिमन्ति शुभानि च ।
भूर्जे तं गोलकं कृत्वा सूत्रेणावेष्ट्य यत्नतः ॥ 67 ॥
पुनर्वस्त्रेण संवेष्ट्य दोलायन्त्रे निधाय च ।
सर्वाम्लयुक्तसन्धानपरिपूर्णघटोदरे ॥ 68 ॥
अहोरात्रत्रयं यावत्स्वेदयेत्तीव्रवह्निना ।
तस्मादाहृत्य संक्षाल्य रत्नजां द्रुतिमाहरेत् ।

रत्नद्रुतिस्वरूपम्–
रत्नतुल्यप्रभा लघ्वी देहलोहकरी शुभा ॥ 69 ॥

मुक्ताद्रावणम्–
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जम्बीशेदरमध्ये तु धान्यराशौ विनिक्षिपेत् ॥ 70 ॥
सप्ताहादुद्धृतं चैव पुटे धृत्वा द्रुतिर्भवेत् ॥ 71 ॥

वज्रद्रावणम्–
वज्रवल्यन्तरस्थं कृत्वा वज्रं निरोधयेत् ।
अम्लभाण्डगतं स्वेद्यं सप्ताहाद्द्रवतां व्रजेत् ॥ 72 ॥

वैक्रान्तद्रावणम् –
श्वेतवर्णं तु वैक्रान्तमम्लवेतसभावितम् ।
सप्ताहान्नात्र सन्देहः खरघर्मे द्रवत्यलम् ॥ 73 ॥
केतकीस्वरसं ग्राह्यं सैन्धवं स्वर्णपुष्पिका ।
इन्द्रगोपकसंयुक्तं सर्वं भाण्डे विनिक्षिपेत् ।
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लोहाष्टके तथा वज्रे वापनात्स्वेदनाद्द्रुतिः ।
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रत्नद्रुतिस्थापनाविधिः –
कुसुम्भतैलमध्ये तु संस्थाप्या द्रुतयः पृथक् ।
तिष्ठन्ति चिरकालं तु प्राप्ते कार्ये नियोजयेत् ॥ 77 ॥

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सूर्यादिग्रहनिग्रहापहरणं दीर्घायुरारोग्यदं
सौभाग्योदयभाग्यवश्यविभवोत्साहप्रदं धैर्यकृत् ।
दुश्छायाञ्चलधूलिसंगतिभवाऽलक्ष्मीहरं सर्वदा
रत्नानां परिधारणं निगदितं भूतादिनिर्नाशनम् ॥ 78 ॥

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वातश्लेष्महरो मेध्यः पूजनाद्रवितुष्टिदः ॥ 1 ॥
श्रेष्ठसूर्यकान्तगुणाः –
शुद्धः स्निग्धो निर्व्रणो निस्तुषोऽन्त-
र्यो निघृष्टोऽत्यन्तनैर्मल्यमेति ।
यः सूर्यांशुस्पर्शनिस्यूतबह्नि-
र्जात्यः सोऽयं कथ्यते सूर्यकान्तः ॥ 2 ॥
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शिशिरश्चन्द्रकान्तस्तु स्निग्धः पित्तास्रतापनुत् ।
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स्निग्धं शीतं पीतमत्रासमन्तः
धत्ते चित्ते स्वच्छतां यन्मुनीनाम् ।
यश्च स्रावं याति चन्द्रांशुसंगाद्
जात्यं रत्नं चन्द्रकान्ताख्यमेतत् ॥ 4 ॥
श्रेष्ठराजावर्तगुणाः –
राजावर्तोऽल्परक्तोरुनीलिमामिश्रितप्रभः ।
गुरुश्च मसृणः श्रेष्ठस्तदन्यो मध्यमः स्मृतः ॥ 5 ॥
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दीपनः पाचनो वृष्यो राजावर्तो रसायनः ॥ 6 ॥
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शिरीषपुष्पार्द्ररसैः राजावर्तं विशोधयेत् ॥ 8 ॥

राजावर्तमारणम्–

लुंगाम्बुगन्धकोपेतो राजावर्तो विचूर्णितः ।
पुटनात्सप्तवारेण राजावर्तो मृतो भवेत् ॥ 9 ॥

राजावर्तसत्वपातनम् –

राजावर्तस्य चूर्णन्तु कुनटीघृतमिश्रितम् ।
विपचेदायसे पात्रे महिषीक्षीरसंयुतम् ॥ 10 ॥
सौभाग्यपंचगव्येन पिण्डीबद्धन्तु जारयेत् ।
ध्मापितं खदिरांगारैः सत्वं मुञ्चति शोभनम् ॥ 11 ॥
अनेन क्रमयोगेन गैरिकं विमलं भवेत् ।
क्रमात् पीतञ्च रक्तञ्च सत्त्वं पतति शोभनम् ॥ 12 ॥

स्फटिकगुणकर्माणि–

स्फटिकः समवीर्यः स्यात् पित्तदाहार्तिशोषनुत् ।
तस्याक्षमालां जपतां दत्ते कोटिगुणं फलम् ॥ 13 ॥

श्रेष्ठस्फटिकगुणाः –

यद् गंगातोयबिन्दुच्छवि विमलतमं निस्तुषं नेत्र्यहृद्यम् ।
स्निग्धं शुद्धान्तरालं मधुरमतिहिमं पित्तदाहास्रहारि ।
पाषाणैर्यन्निघृष्टं स्फुटितमपि निजां स्वच्छतां नैव जह्यात्
तज्जात्यं जात्वलभ्यं शुभमुपतनुते शैवरत्नं विचित्रम् ॥ 14 ॥

इति श्रीवैद्यपतिसिंहगुप्तस्य सूनोर्वाग्भट्टाचार्यस्य कृतौ रसरत्नसमुच्चये रत्नानां शुद्ध्यादिनिरूपणं नाम चतुर्थोऽध्यायः ॥ 4 ॥

# FOURTH CHAPTER

## ENGLISH TRANSLATION

## DESCRIPTION OF GEMS

### DESCRIPTION OF GEMS *(RATNA NIRŪPAṆA)*

Precious stones are also mentioned to be used for the *bandhana* (fixation/solidification/binding) of *pārada* (mercury). (1)

*Names of Precious Stones :*

*Vaikrānta* (tourmaline), *sūryakānta* (Sun stone), *hīraka* (diamond), *mauktika maṇi*[1] (pearl), *candrakānta* (Moon stone), *rājā varta* (lapis lazuli) and the seventh *garuḍodgāra* (emerald) are known as precious stones. (2)

*Puṣparāga* (topaz), *gomeda* (hessonite), *padmarāga* (ruby), *pravāla* (coral), *vaidūrya* (cat's eye) and *nīlam* (sapphire) are also considered as precious stones. Due to their usefulness in *Rasabandhana* (binding of mercury) these should also be collected with care. (3)

*Superior precious stones :*

*Padmarāga* (ruby), *indra nīla* (sapphire), *marakata* (emerald), *puṣparāga* (topaz) along with *vajra* (diamond) are considered as the five superior precious stones. (4)

*Precious Stones for Nine Planets :*

*Māṇikya* (ruby), *muktāphala* (pearl), *vidruma* (coral), *tārkṣya* (emerald), *puṣparāga* (topaz), *bhidura* (diamond), *nīlam* (sapphire), *gomedaka* (hessonite/zircon) and *vidūraka* (cat's eye) are the nine gems for the nine planets, Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn, Dragon's head and Dragon's tail, respectively. (5)

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[1] The word *maṇi* is generally used to indicate jewel or precious stone. But in this context *maṇi* is an adjective of *mauktika* which is not a stone. However, due to its preciousness it was also considered as *maṇi* and included in this group of precious stones.

*Other opinion regarding favourite precious stones of the planets :*

On the basis of friendly relationship of the precious stones with the nine planets, such as Sun, Moon, the following precious stones, namely *kuruvinda* (ruby), *puṣparāga* (topaz), *pravāla* (coral), *muktāphala* (pearl), *tārkṣya* (emerald), *vajra* (diamond), *Nīlam* (sapphire), *gomeda* (hessonite/zircon), and *vidūraka* (cat's eye), respectively, may prove helpful in achieving one's desired effects/success when borne in finger rings. (6)

*Utility of the best quality gems :*

The precious stones possessing superior characteristics and of superior variety only, are recommended for success in mercurial processes, for achieving positive health, for donations, for bearing in finger rings or on the body, and for adoration of gods. (7)

## MĀṆIKYA (RUBY)

*Varieties of ruby :*

Ruby is of two varieties : one is *padmarāga* and the other is *nīlagandhi.*

*Characteristics of the best ruby :*

The best ruby is that which possesses a shade like that of red lotus, is transparent, brilliant, heavy, clear, oval or spherical in shape, and uniform on all sides. (8,9)

*Characteristics of nīlagandhi ruby :*

That ruby, which is bluish in colour, supposed to have emerged from Gaṅgā water, looks reddish with bluish tinge in its body, and possesses all the best qualities similar to the former variety, is called *nīlagandhi* ruby. (10)

*Eight defects of ruby :*

The ruby, which has holes/fissures/apertures, roughness, dirt on surface, dryness, haziness and spots, and is concave, light and curved, is considered as defective. These are the eight defects of ruby. (11)

*Pharmaco-therapeutic properties of ruby :*

Ruby is stomachic *(dīpana),* promoter of testicular function *(vṛṣya),* destroys the diseases caused by *kapha doṣa, vāta doṣa* and *kṣaya* (wasting of

body tissues), removes the effects caused by evil spirits like *bhūta, vetāla* and also sins, and cures the diseases caused by the deeds *(karmas)* of the past life. (12)

## MUKTĀ (PEARL)

*Characteristics of best quality pearl :*

The pearl possessing the following nine qualities, *viz.*, pleasing appearance or inducing pleasant feeling, white, light, brilliant, transparent like rays, large in shape and size, water drop like lustre and spherical in shape is considered the best and auspicious. (13)

*Pharmaco-therapeutic properties of pearl :*

The pearl is considered to destroy the diseases caused by *kapha* and *pitta doṣas* and also *kṣaya, kāsa, śvāsa* and *agnimāndya.* It gives nourishment to the body tissues, acts as promoter of testicular function *(vṛṣya)* and longevity producer *(āyuṣya)* and destroys burning sensation *(dāha).* (14,15)

*Defects of pearl :*

A pearl should be rejected if it is dull in appearance, does not possess a lustre like water drop, is blackish, reddish or salt like or half white in colour, shapeless, and full of knots on its surface. (16)

## PRAVĀLA (CORAL)

*Characteristics of best coral :*

A good coral should have the following seven qualities, *viz.*, red colour like ripe *bimbīphala,* cylindrical, long and uncurved, brilliant, free from fissures and holes on its surface, and thick in appearance. (17)

*Defects of coral :*

A coral having the following seven defects, *viz.*, paleness, yellowishness, dullness, whiteness, dryness, lightness and fissures and holes is not considered good. (18)

*Pharmaco-therapeutic properties of coral :*

Coral can cure the diseases caused by *kṣaya (dhātukṣaya), pitta* and *rakta*

*doṣa* and also *kāsa*. It is stomachic, digestive and light (easy to digest). It can neutralise the effects of poisons and evil spirits and destroys eye troubles. (19)

## TĀRKṢYA (EMERALD)

*Characteristics of best emerald :*

The best emerald should have the following seven qualities, *i.e.* it should be green, heavy, brilliant,emanating sharp light rays, auspicious, smooth, and very bright. (20)

*Defects of emerald :*

Emerald containing following defects is not recommended. The defects are monkey colour, rough surface, blue, pale and blackish shades, dirty and concave appearance, ugliness, dryness and lightness. (21)

*Pharmaco-therapeutic properties of emerald :*

Emerald can cure fevers *(jvara)*, vomiting *(chardi)*, poisonous effects *(viṣa)*, dyspnoea/asthma *(śvāsa)*, *sannipāta* and indigestion *(agnimāndya)*. It can also cure piles *(arśa)*, anaemia *(pāṇḍu)* and oedema/inflammation *(śopha)*, and can improve vital force *(ojas)* of the body. (22)

## PUṢPARĀGA (TOPAZ)

*Characteristics of best topaz :*

Topaz having the following eight characterisitcs, *viz.*, heavy, brilliant, transparent, large, uniform, tender, yellow like *karṇikāra puṣpa*, and smooth is considered the best. (23)

*Defects of topaz :*

A topaz having the following defects such as dull or lustreless, rough and dry, concave or convex surface, yellowish black, brownish, yellow, pale or monkey colour is considered inferior. (24)

*Pharmaco-therapeutic properties of topaz :*

Topaz cures the poisonous effects *(viṣa prabhāvas)* and vomiting *(chardi)*, pacifies *kapha* and *vāta doṣas*, destroys indigestion *(agnimāndya)*, burning sense *(dāha)*, skin-lesions *(kuṣṭha),asra(rakta) roga*. It is stomachic *(dīpana)*, digestive *(pācana)* and easy to digest *(laghu)*. (25)

## VAJRA (DIAMOND)

*Varieties of diamond :*

Diamond is of three varieties, *viz.*, *nara* (masculine), *nārī* (feminine) and *napuṃsaka* (neuter). From the point of view of *rasa*, *vīrya* and *vipāka*, i.e., pharmacologically, a preceding variety is considered relatively better. (26)

*Characteristics of each variety of diamond :*

*Masculine diamond :* That which has eight edges, eight surfaces and six angles, which is very bright, possess rainbow like colours and which is relatively light *(väritara)* is called as the best masculine diamond.

*Feminine diamond :* If the same diamond with the above qualities looks concave/flat and cylindrical it is considered a feminine diamond.

*Neuter diamond :* If it is spherical, blunt at the tip of the angles and comparatively heavy, it is considered as a neuter diamond.

The masculine, feminine and neuter varieties of diamonds are useful in male, female and neuter subjects, respectively. If used otherwise these may not give good result except the masculine variety which is claimed good for all.

On the basis of colour each of the above mentioned varieties may be subdivided into four types, *i.e.*, white, red, yellow, and black. These are also called *brāhmaṇa, kṣatriya, vaiśya,* and *śūdra,* respectively. When used in their own caste *(varṇa)*, these produce desired effects. However, a diamond belonging to a higher caste may prove useful in lower caste persons also.

According to the ruling of Lord Bhairava, this rule is applicable for all the substances, though it has been said in the context of diamonds only. (27-31)

*Pharmaco-therapeutic properties of diamond :*

On internal use diamonds prolong life, produce immediate good results, and act as the best promoter of testicular functions. They can pacify all the three *doṣas (vāta, pitta* and *kapha)* and can cure all the diseases. They are also capable of fixing/binding or incinerating mercury. Pharmacologically, diamonds are stomachic and can conquer death like ambrosia. (32)

*Common defects of gems :*

Five common defects of gems are described. These are (1) black spot *(grāsa)*, (2) grain/discolouration *(trāsa)*, (3) spots due to erosion *(bindu)*, (4) lines/boundaries *(rekhā)*, and (5) bubbles *(jalagarbhatā)*. Earth and water born defects are not found in gems, hence these are said to be free from the effects of earth and water. (33)

*Pharmaceutical processes :*

*Śodhana of diamond :*

Diamond is surely purified by boiling it in the decoction of *kulattha (Dolichos biflorus* Linn.) or *kodrava (Paspalum scrobiculatum* Linn.) for one *yāma* (3 hours). (34)

*Māraṇa of diamond :*

*Process I :* Diamond immersed in the blood of bed bugs four times and covered with the roasted flesh of a rat having a specific good smell should be subjected to *varāha puṭa* heating thirty times. Thereafter, it should be subjected to strong heating and dipping in the decoction of *kulattha* one hundred times. By this method it is converted into ashes. According to others, the whole process should be repeated for hundred times. (35-37)

*Process II :* *Manaḥśilā* (realgar) ground with the juice of *lakuca (Artocarpus lakoocha* Roxb.) and mixed with the decoction of *kulattha* should be pasted inside a crucible and the diamonds, put in the crucible and sealed, should be subjected to heating eight times using dried cow-dung cakes. Thereafter, these are subjected to strong heating and dipping into pure mercury one hundred times. By this method diamonds are converted into ashes definitely and this ash is claimed to be *vāritara* (floatable in water).

Soma Senāni, who is an expert in *Rasa Śāstra* and who is truth speaking and well experienced in this branch, has described this method for converting diamonds into ashes. (38-40)

*Process III :* Diamonds, seven times coated with the blood of bed bugs and dried should be heated strongly and dropped in an iron vessel full of *kāsamarda rasa* (juice of *Cassia oxydentales).* By repeating the process seven times diamonds turn into ash surely. This method has been described by a scholar named Brahma Jyoti Munīndra. (41-42)

*Process IV :* Diamonds also turn into ash if rubbed with the juice of *nīla jyoti latā (Indigofera tinctoria* Linn.) *kanda* and dried in sun light, turn into ash just like the *pāpa karmas* (evil deeds), which become destroyed or burnt to ashes with the fire of knowledge. (43)

*Process V :* A paste of earth worms with the juice of *madana phala (Redendia dumatorund* Lam.) is prepared and applied to diamonds ; these are subjected to heating twenty times by *puṭa* system. By this way also these are reduced to fine powder of superior quality which is considered suitable for preparing *rasa* medicines. (44-45)

*Method of use :*

Diamonds reduced to powder form by the above processes, should be mixed with a little borax *(ṭaṅkaṇa)* and 1/20th part *khaṛa satva* extracted from the earth worms, and heated strongly twenty times. Thereafter it should again be heated strongly with equal part of gold. Diamonds thus heated definitely become suitable for using in *rasādi* (marcurial) medicinal preparations.

The same (ash), mixed with three times mercury and made into tablets, when kept in mouth, make the loose tooth very strong immediately. (46,47)

*Vajra rasāyana :*

Thirty parts of diamond ash, sixteen parts of gold ash, eight parts of silver ash, eleven parts of purified *sveta amṛta (viṣa) curna*, four parts of mica ash, eight parts of copper pyrite ash, and six parts of tourmaline ash, all mixed together are known as *vajra rasāyana*. One part of this *rasāyana* is said to provide all the *ṣaḍguṇas* (the six qualities) to a man on internal use. (48)

## NĪLAM (SAPPHIRE)

*Varieties :* Sapphire is said to have two varieties, one is *jala nīla* and the other is *indra/śakra nīla*. Of the two *śakra nīla* is better than *jala nīla*. (49)

*Characteristics of jala nīla :*

That which is bluish from outside and white from inside and light in weight is *jala nīla*.

*Characteristics of indra/śakra nīla :*

That which is bluish from outside and blackish from inside and heavy in weight is *śakra nīla*. (50)

*Characteristics of best sapphire :*

The best sapphire should have the following seven qualities, *viz.*, uniform colour, heaviness, brilliancy, transparency, round appearance, softness, and containing radiating brilliance in its centre. (51)

*Defects of jala nīla :*

*Jala nīla* with the following seven qualities, *viz.*, tenderness, variated colours, dry look, light weight, reddish tinge, concave or flat surface and very thin or small size is defective. (52)

*Pharmaco-therapeutic properties of sapphire :*

Sapphire is said to destroy dyspnoea *(śvāsa)* and cough *(kāsa)*, promotes testicular function *(vṛṣya)*, pacifies all the three *doṣas*, acts as best stomachic *(sudipanam)*, destroys irregular/intermittent fevers *(viṣamajvara)*, piles *(durnāma)*, and the sins. (53)

## GOMEDA (HESSONITE/ZIRCON) :

As the gem looks similar to cow's fat *(gomeda)* it is called *gomeda* (hessonite).

*Characteristics of best hessonite :*

The best *gomeda* is that which possesses the following eight characteristics, *viz.*, colour or shade like cow's urine, transparency, brilliancy, uniformity, heavyness, free from lamellae/layers, smoothness and splendid look. (54)

*Defects of gomeda :*

The hessonite having the defects such as *vicchāya* (shade not similar to cow's fat/urine), light in weight, dry, flat/concave surface, containing lamellae/layers, lustreless and looking like a yellow glass is not considered good. (55)

*Pharmaco-therapeutic properties of gomeda :*

Gomeda destroys *kapha* and *pitta doṣas*, wasting *(kṣaya)* and anaemia *(pāṇḍu) rogas*, acts as stomachic and digestive agent, induces relishness, improves complexion of skin and arouses intelligence. (56)

## VAIDŪRYA (CAT'S EYE) :

*Characteristics of the best cat's eye (vaidūrya) :*

The best *vaidūrya* is that which is darkish and whitish in colour, uniform, transparent, heavy in weight, clean and contains a white fibre like structure similar to white upper garment, or white cloud. (57)

*Defects of vaidūrya :*

*Vaidūrya* having the defects such as dark colour, water like shade, flat/concave surface, light weight, roughness and red lines like a red outer garment is not considered good. (58)

*Pharmaco-therapeutic properties :*

*Vaidurya* destroys *raktapitta*, increases intelligence, longevity and strength, destroys the diseases caused mainly by *pitta doṣa*, is claimed to be stomachic and digestive stimulant, and clears the bowels. (59)

*General Śodhana method for Precious Stones :*

The general purification of all the gems may be done as follows .

The purification of *manikya* (ruby) is done with *amla varga* (acidic group) liquids, of *mukta* (pearl) with *jayantīpatra rasa (Sesbania sesban murrill)*, of *vidruma* (coral) with *kṣāra varga* (alkaline) liquids, of *tārkṣya* (emerald) with cow's milk, of *puṣparāga* (topaz) with *sandhāna varga* drugs (fermented acidic liquids mixed with the decoction of *kulattha)*, of *vajra* (diamond) with *taṇḍulīya jala* (liquid of *Amaranthus polygoroids)*, of *nīlam* (sapphire) with *nīlīrasa* (juice of *Indigofera tinctoria* Linn.), of *gomeda* with *rocana jala* (bright yellow bile pigment obtained from cattle) and of *vaidūrya* (cat's eye) with *triphalā jala* (decoction of triphalā). General *śodhana* of the gems is done with the *svedana* (boiling in liquids) process, *i.e.*, as per tradition, the gems are boiled with the specific liquids by *dolāyantra* method for three hours. (60-62)

*General Māraṇa (incineration) methods for gems :*

All the precious stones except diamond should be killed (made to ashes) by anointing a paste made of *manaḥśilā* (realgar), *gandhaka* (sulphur) and *tālaka* (orpiment) with the juice of *lakuca (Artocarpus lakooche* Roxb.) and thereafter subjecting them to heating eight times by *puta* system. By this method all the gems are definitely converted to ashes. (63)

*Ratna Drāvana (liquefaction of gems) :*

The liquefaction of gems is done as follows.

A paste of the drugs *rāmaṭha (hiṅgu)*, five *lavaṇas*, three *kṣāras*, *māṃsa drava*, *amlavetasa (Garcinia pedunculata* Roxb.), *cullikā lavaṇa*, large and ripe *kumbhī phala*, good variety of *jvālāmukhī (Gloriosa superbà* Linn), *dravantī (Croton tiglium.* Linn.), *rudantī (Capparismoonii wight)*, *payasyā (Holostemma rheedianum* Spreng.) and *citraka mūla* (roots of *Plumbago zeylanica* Linn.) is prepared by adding *snuhī dugdha* (latex of *Euphorbia nerilifolia)* and *arka dugdha* (latex of *Calatropis procera)* and grinding carefully.

The paste of the above drugs is then made into a bolus and purified gems which possess superior characteristics, auspicious and of good quality are put inside the bolus. The bolus is wrapped in *bhūrjapatra* (leaves of *Betula utilis.*

Don.) tied carefully with thread, put in a cloth piece and suspended in *dolāyantra* filled with acidic formented liquid associated with other acidic substances. This is to be heated (boiled) by applying strong fire for three days and nights. In the end it should be taken away, washed and the *druti* of *ratnas* may be collected. It (the *druti*) possesses the shade of the gem from which it is prepared, is light in weight and good for *dehakarma* and *lohakarma*. (64-69)

*Liquefaction of muktā :*

Powdered pearl should be ground with the juice of *amlavetasa* for seven days and then it may be put inside *jambīra phala*. This should now be kept inside *dhānyarāśi* (heap of grain). After seven days it should be taken out and heated by the *puṭa* system. Thus, liquefaction of *muktā* is achieved. (70-71)

*Liquefaction of diamond :*

Powdered diamond should be put inside the *kalka* of *vajravallī (Holistropium indicum)* and wrapped with cloth. Thereafter it should be boiled in an earthen pot containing acidic liquid for seven days. This would facilitate the *druti* (liquefaction) of *vajra* (diamond). (72)

*Liquefaction of vaikrānta :*

The whitish tourmuline triturated with the juice of *amlavetasa* and kept in bright sunshine for seven days converts itself into liquid state. (73)

*Second Method :* To the juice of *ketakī (Strychnos potatorum)* are added *saindhava* (rock salt), *svarṇapuṣpī (Cassia fistula.* Linn.) and *indragopa* (a red insect). A pot containing *vaikrānta* is filled with this juice and subjected to heating to boiling *(svedana). Vaikrānta* thus boiled for seven days converts itself into liquefied state. (74)

*Utility of vaikrānta druti :*

The *druti* of *vaikrānta* obtained as above, poured on metals or boiled with any of the eight metals and/or diamond definitely renders them into liquefied state. This is the specific effect of this recipe. This method definitely achieves the liquefaction of all the gem stones. (75-76)

*Method of preserving the druti for a long time :*

If the *druti* of any material is kept separately into *kuṣumbha taila* (oil of *Carthamus tinctorius.* Linn.), it remains unaltered (in the same state) for a long time, and whenever necessary it could be used for the desired purposes. (77)

*Effect of bearing of gems :*

The bearing of gems is said to destroy the ill effects of planets. (Sun, Moon, *etc.*), impart longevity and good health, arouses fortune, makes the man

popular in the society and improves his will-power which are dependent on the fortune. This also generates courage/patience and removes the misfortune/unhappiness or poverty caused by the effects of evil spirits, polluted air and bad association. Further, this is also claimed to destroy the effects of devils/bad elements. (78) (1)

## DESCRIPTION OF SEMI-PRECIOUS STONES :

| *Note*—According to Prof. D.A. Kulkarni, this chapter contains only 78 verses in the original text. But looking to the requirement of the text Prof. Kulkarni recommended to include the following 14 verses also in this chapter, which are devoted to the description of semi-precious stones useful in medicine. The present author agrees with this view and describes these below.| (2)

### SŪRYAKĀNTA (SUN-STONE)

*Pharmaco-therapeutic properties of sūryakānta (Sun-stone/Aligo-clays) :*

Sun-stone is considered hot in potency *(uṣṇa* in *vīrya)*, free from impurity/toxicity, possessing rejuvenating (rasāyana) property. It destroys *vāta* and *kapha doṣas*, acts as brain-tonic *(medhya)*, and pleases the planet Sun by its worship.

*Physical Properties :*

It is claimed that the pure (good quality) sun-stone is brilliant, unhurt, free from chaff, attains more brightness on rubbing and when comes in contact with sun rays shines in such a way as if generating a fire. Such sun-stone is considered to be the best. (1-2)

### CANDRAKĀNTA (MOON-STONE)

*Pharmaco-therapeutic properties of candra kānta :*

Superior quality *candra kānta* is considered to have the following properties. It is cold in touch and potency *(śiśira* in *vīrya)*, unctuous, destroys *pitta* and *rakta doṣas* and burning sensation, makes Lord Śiva pleased, looks transparent and destroys the misfortune produced by the ill effect of planets (specially of moon). (3)

*Physical properties of best candrakānta :*

( *Candrakānta* is cool to touch, as clear and transparent as the mind and thoughts of the sages and appears like a secreting flow of discharge when in contact with the moon-rays. Such moon-stone is considered to be the best. (4)

## RĀJĀVARTA (LAPIS-LAZULI)

*Characteristics of the best rājāvarta :*

The best quality *rājāvarta* is that which possesses a mixed shade of blue and slightly red colours and is heavy and smooth. *Rājāvarta* other than this is considered as of medium quality. (5)

*Pharmaco-therapeutic properties of rājāvarta :*

The lapis lazuli destroys urinary disorders *(prameha)*, wasting diseases *(kṣaya)*, piles *(durnāma)*, anaemia *(pāṇḍu)*, *kapha* and *vāta doṣas*. It is stomachic/digestion stimulant, digestive agent, best promoter of testicular function, and rejuvenator of life *(rasāyana)*. *(6)*

*Śodhana of rājāvarta :*

*Ist Method*—Minerals like *rājāvarta* are purified by boilingthemtwo or three times with lemon juice *(nimbu drava)* associated with cow's urine *(gomūtra)*, and alkaline liquid *(kṣāra drava)* by the method of *dolāyantra*. (7)

*IInd Method*—*Rājāvarta* may also be purified by boiling it with the juices of *śirīṣa puṣpa* (flower of *Albizzia lebbeck* Benth.) and ginger *(ārdraka)*. (8)

*Māraṇa of rājāvarta :*

Powdered *rājāvarta* mixed with sulphur and ground with the juice of *mātuluṅga (Citrus medica)* is converted to ashes *(mṛta)* when heated seven times by the system of *puṭa*. (9)

*Satvapātana of rājāvarta :*

Powdered *rājāvarta* should be mixed with ghee and realgar *(manaḥśilā)* and heated in an iron pot along with buffalo milk. Thereafter it should be mixed with borax and *pañca gavya* and made in a bolus form. These are then heated strongly using fire of *khadira* wood *(khadirāṅgāra)*. By this method the good variety *satva* (essence/metal content) can be extracted from it. (10-11)

*Śodhana and satvapātana of gairika :*

The method mentioned above is also applicable in case of *gairika* to purify it, and to extract its best quality *satva* having yellow and red colours, respectively. (12)

[*Note :* The 12th verse describing the *gairika śodhana* and *satvapātana* should not be described in the context of *uparatnas*. However, due to the similarity of the method Prof. Kulkarni proposed to describe it here.]

## SPHAṬIKA (QUARTZ)

*Pharmaco-therapeutic properties of sphaṭika :*

Potency of *sphaṭika* is neither hot nor cold. It destroys *pitta doṣa*, burning *(dāha)*, and wasting diseases *(śoṣa roga)*. If one enchants any sacred text/hymn using the garland *(mālā)* made of this gem *(maṇi)* the above mentioned effects of *sphaṭika* could be achieved million times multiplied. (13)

*Characteristics of best sphaṭika :*

That *sphaṭika* is considered the best which possess the following characteristics, *viz.*, a shade like those of *Gangā* water drops, very clear, free from chaff, good looking, having pleasant appearance, brilliancy and clear inner structure. It should be sweet in taste, should have very cooling effect, should destroy *pitta*, *dāha* and *asra* (blood) *dosa*. When rubbed on stone it should not loose its transparency even if it is broken. It is generally claimed to be rare but if achieved proves very auspicious. Thus, this *śaiva ratna* (a gem very favourite to Lord Siva) possesses multiplicity of effects. (14)

# RASA RATNA SAMUCCAYA

## NOTES ON THE FOURTH CHAPTER

### RATNAS (GEMS STONES)

*Ratnas* are those which are considered the best with regards to qualities and properties in their respective groups. Some scholars mentioned that some substances are known as *ratnas* because of their high cost, shining and bright appearance and a few other superior qualities, and on account of these superior characteristics and qualities these are liked by rich persons.

Generally *ratnas* are stone materials but a few animal products are also included in this group because of their high cost and superior characteristics and qualities. In modern literature these are called gems or precious stones. In ancient literature *ratnas*, on the basis of their characteristics, are divided into two groups, *viz.*, (1) *ratnas* (precious stones) and (2) *uparatnas* (semiprecious stones).

In this chapter nine *ratnas* have been described in detail and in the end a few drugs of the *uparatna* group have also been described, though these are not found mentioned in the original text. The relationship of the nine *ratnas* with the nine planets is also mentioned in *Rasa Ratna Samuccaya*. This is shown in Table 1.

TABLE 1

*The nine ratnas (gems), their hindi and english names and their relationship with the nine planets (grahas)*

| Name of the Gem | Hindi name | English name | Name of the Planet *(graha)* |
|---|---|---|---|
| *Māṇikya* | *Māṇika* | Ruby | *Sūrya* - Sun |
| *Muktā* | *Moti* | Pearl | *Candra* - Moon |
| *Vidrum* | *Muṅgā* | Coral | *Maṅgala* - Mars |
| *Tārkṣya* | *Pānnā* | Emerald | *Budha* - Mercury |
| *Puṣparāga* | *Pukharāja* | Topaz | *Guru* - Jupiter |
| *Bhidura* | *Hīrā* | Diamond | *Śukra* - Venus |
| *Nīlam* | *Nīlā* | Sapphire | *Śani* - Saturn |
| *Gomedaka* | *Gomeda* | Hessonite | *Rāhu* - Dragon's head |
| *Vidūraka* | *Vaidūrya* | Cat's eye | *Ketu* - Dragon's tail |

In this way *mānikya* and the other gems are claimed to be related with the nine planets, Sun and the others, respectively. In other words these gems could be used to please the respective planets or to remove their ill effects. For this purpose superior quality gem only should be used for wearing, donation and also for using internally.

*Qualities of best ratnas (gems) :*

The best quality gem should be clear, light, shining or glittering, and must possess various surfaces and angles. According to modern view gems should be beautiful, durable, rare, costly and portable. The beauty of a gem depends upon its transparency, clarity, brilliancy, colour, lustre, and shining appearance. These qualities could best be seen when the gems are cut and polished.

*Defects of ratnas :*

In ancient texts five defects of gems are described. These are *grāsa, trāsa, bindu, rekhā,* and *jalagarbhatā.* According to modern terminology these may be explained as :*grāsa* means black spots, *trāsa* means discolouration or presence of grains, *bindu* means erosions, *rekhā* means lines or boundaries, and *jalagarbhatā* means presence of bubbles. Gems are claimed to be free from earth and water born defects.

*Origin of ratnas :*

It is claimed in ancient texts that *ratnas* got originated from the shining eyes of angry Mahākāla engaged in the drying of sea at the end of *pralaya.*

It is also mentioned that mountains, rocks, the sea and animals are important sources of the *ratnas.*

*Superior-most ratnas :*

Of the nine gems the following five, *viz., padmarāga* (ruby), *indra nīla* (sapphire), *marakata* (emerald), *puṣparāga* (topaz) and *vajra* (diamond) are considered to be the superior-most *ratnas.* These possess all the qualities of best *ratnas.*

*Common uses of ratnas :*

*Rasendra Cūḍāmaṇi* mentions the following uses of *ratnas. Ratnas* are used for *rasa karmas* (mercurial processes) and *rasāyana karmas* (rejuvenating and/or therapeutic purposes) in addition to *dāna* (donation), *dhāraṇa* (wearing) and *devatārcanā* (adoration of gods/planets). It is further stated that they not only check the ill effects of *grahas* (planets) but can also grant longevity, wealth, fortune, courage and energy to the human beings and remove poverty, misery, misfortune and the influence of evil spirits.

*Pharmacotherapeutic effects of ratnas :*

*Ratnas* are generally *madhura* (sweet) and *kaṣāya* (astringent) in *rasa* (taste), *śīta* and *sara* in *guṇas* (property/potency), *dīpana* (stomachic), *kānti vardhana* (improve complexion), *agni vardhaka* (digestive), *vilekhana* (anti-obese), *viṣahara* (anti-poison) and *netrāmayahara* (destroyer of eye diseases). Further, on account of their cooling property and potency all the gems are claimed to pacify *pitta doṣa* in particular and *tridoṣas* in general. These are the properties of *ratnas* alone but if *ratnas* are mixed or used in combination with mercury they may prove still more effective, *i.e.*, just like *amṛta* (nectar), in preventing senility and mortality.

*Processing of ratnas :*

Just like metals and minerals *ratnas* also need some processing before they are subjected to internal use for therapeutic purposes.

*Śodhana (purification) :*

Though it is mentioned in the texts that the *ratnas* do not necessarily require purification as in their cases no bad effects are observed even if they are used without purification a common method, however, for their purification is found mentioned in the texts which probably helps in removing their external impurities, if any, and in reducing their hardness to a large extent so that their conversion to fine subdivisions become easier. This treatment may also help in enhancing their pharmacotherapeutic properties. For purification, specific *śodhana* drugs are recommended for different gems but the process remains common for all the gems. (Table-2)

TABLE 2

*Śodhana of different gems*

| Gem | Śodhana drug |
|---|---|
| *Māṇikya* | *Amla varga* drugs (acidic group of liquids). |
| *Muktā* | *Jayantīpatra rasa* (juice of *Jayanti* leaves). |
| *Pravāla* | *Kṣāravarga* drugs (alkaline liquids). |
| *Tārkṣya* | *Godugdha* (cow's milk). |
| *Puṣparāga* | *Sandhāna varga* (fermented acidic liquids).<br>*Kulattha kvātha* (decoction of kulatha). |
| *Vajra* | *Tandulīya jala.* |
| *Nīla* | *Nīlī rasa.* |
| *Gomeda* | *Gorocanā jala* (liquid of bright yellow pigment obtained from cattles). |
| *Vaidūrya* | *Triphalā kvātha.*<br>*Uttamā kvātha.* |
| Process : | *Svedana* (boiling in liquids) for one *yāma* (3 hours).<br>*Nirvāpa* (heating and quenching) several times (100 times). |
| Apparatus : | *Dolāyantra.* (heating pan). |

*Effect of śodhana :*

By *svedana*, external or soluble impurities present in the gems may be removed and by *nirvāpa* or *niṣecana* hardness of the gems could be reduced to some extent and they are made brittle.

*Māraṇa (incineration) :*

Just like *śodhana* a common procedure for *māraṇa* (incineration) for all the gems except *vajra* (diamond) is also mentioned in the *RRS.*

*Procedure :* The gems (except diamond) are smeared with a paste made of *manaḥśilā* (realgar), *gandhaka* (sulphur) and *tālaka* (orpiment) by triturating these three with the juice of *lakuca.* These are then closed in a *śarāva sampuṭa* and subjected to heating eight times by *puṭa* system. By this method all the gems are converted to ashes without any doubt. *Gajapuṭa* heat is used for incineration of gems.

*Drāvaṇa (liquefaction) of ratnas :*

Just like *śodhana* and *māraṇa* a common method for *ratna drāvaṇa* (liquefaction of gems) is also found mentioned in the *RRS.* The process is known as *druti.* In this process solid gems are converted into liquid state and maintained in this state for ever.

*Procedure :* A paste of *rāmaṭha* (asafoetida), five *lavaṇas*, three *kṣāras*, *amlavetasa*, *culhikā lavaṇa*, large and ripe *kumbhiphala*, *jvālāmukhī*, *dravantī*, *rudantī*, *payasyā* and *citraka mūla* is prepared by adding *snuhī dugdha*, *arka dugdha* and *māṃsa drava* and triturating carefully. Inside a bolus of this paste, purified best quality gems are put and the bolus is wrapped with *bhurja patra* and carefully tied with thread. This is then put in a cloth piece to make bundle and the bundle is suspended like a *dolā* in a pot filled with fermented acidic liquid associated with other acidic extractives. The pot is subjected to heating by *svedana* method (boiling) on strong fire for three days and nights. In the end the bundle is taken away from *dolāyantra* and the *druti* of *ratnas* is collected. The shade of the *druti* should closely resemble the colour of the gem from which it is prepared. It is light in weight and may be used for both *dehakarma* and *lohakarma.*

*Method of preserving drutis for a long time :*

If the *druti* of any gem is kept into *kusumbha taila*, it remains unaltered (in the same state) for a long time, and whenever required it may be used for the desired purpose.

The physical characteristics of superior and inferior varieties of each gem are then described in this chapter, along with their pharmacotherapeutic

properties. And in case of diamond a detailed description of its varieties, characteristics, properties and processing are found described.

## DESCRIPTION OF INDIVIDUAL GEMS

### MĀṆIKYA (RUBY) $Al_2O_3$

*Modern description*

Chemically ruby is aluminium oxide but also contains iron, chromium, and titanium oxides in traces. Its colour is deep red due to the presence of iron and chromium in small amounts. Its hardness is 9 and sp. gr. 4. Its crystals are hexagonal and its lustre is vitreous.

Ruby occurs in Burma, Sri Lanka and India, and specially in Mysore and Orissa. The ruby obtained from Burma is considered to be the best.

*Varieties of ruby :*

| | |
|---|---|
| According to *Rasa* texts : | 1. *Padmarāga* - Red, |
| | 2. *Nīlagandhi* - Bluish red. |
| According to Sanskrit text : | 1. *Kuruvinda,* |
| | 2. *Saugandhika.* |
| According to colour : | 1. Red, |
| | 2. Yellowish, |
| | 3. Greenish *(aśokapatrachāyā).* |
| | 4. Reddish yellow *(tumburucchāya).* |

*Synonyms of ruby :*

*Padmarāga, vasuratna, suratnaka, kuruvinda.*

*Physical varieties :*

*Superior variety*—Ruby of superior variety should be deep red just like *guñjā* (dried berry of *Arbus precatorius)* or *indragopa* (cochineal), should have shine like lotus, should be transparent, oval, smooth, clear, uneven and big in size. Besides these, it should emanate red rays on coming in contact with the morning sun, put in milk will make the milk look red, and on rubbing over the *nikaṣa* (touch stone) would shine much and look beautiful.

*Inferior variety*—The ruby having holes, rough and flat surface, dull appearance, light weight, uneven, and small in size is inferior.

According to *Yukti Kalpataru, māṇikya* is supposed to contain the following defects, *viz., vicchāya, virūpa, aśobhaṇa, dhūmravat paśubandhu vināśakṛt, parābhavakara, śaśtrāghātakara* and *sambhedan (jathara doṣakṛt).*

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | *Madhura.* |
| *Guṇa* | - | *Snigdha, śīta, rūkṣa.* |
| *Karma* | - | *Sandīpana, vṛṣyatama. balya, rasāyana, medhya, hṛdya. āyuṣya, vājikara.* |
| *Doṣa prabhāva* | - | *Kapha vātahara, vātapittanut, tridoṣanāśana.* |
| *Vyadhi prabhāva* | - | *Karmaja roga, bhūtavaitālādijanyaroga, sūryagrahajanya roga (śiropīḍā, prameha, satata jvara, santata jvara* and *pitta roga), kṣayaroga, āmaśūla, hṛdroga, viṣūcikā, dāha jvara, hikkā, śirovraṇa, viṣaja roga.* |

*Processing of ruby :*

1. *Śodhana :*

| | | |
|---|---|---|
| *Śodhana* drugs | - | *Nimbūrasa* or any *amladrava.* |
| *Śodhana* process | - | Subjected to *svedana* in *dolāyantra* for one *yāma.* |

2. Māraṇa :

| | | |
|---|---|---|
| *Māraṇa* drugs | - | *Śilājatu, amla vetasa, culhikā lavaṇa, taṅkaṇa, manaḥśilā, haritāla, gandhaka, hiṅgula.* |
| *Bhāvanā* drugs | - | *Lakuca rasa, nimbū rasa, mayūra pitta.* |
| *Bhāvanā* process | - | *Puṭapāka.* |
| Number and types of *puṭas* | - | Eight– *Gajapuṭas.* |
| Colour of *bhasma* | | *Pāṇḍura varṇa.* |
| Dose | - | 1/4th to 1/2 *guñjā.* |

*Note* - 1. *Māṇikya* is the most favourite gem of the planet Sun *(sūrya graha)* and hence should be worn on the body or used internally to please the planet sun and vanish its *prakopa* (ill effects).

2. Ruby and sapphire can be produced artificially. The synthetic corundums are very shining and bright and when small in size extremely difficult to distinguish from natural stones.

## NĪLAM (SAPPHIRE) $Al_2O_3$

*Modern description*

Chemically *nīlamaṇi* is aluminium oxide but contains traces of cobalt,

which gives a blue colour to it. Colour of *nīlam* is deep blue. Except for its blue colour and the trace element there is no difference between *māṇikya* and *nīlam*. *Nīlam* also belongs to corundum group of stones. Good variety of sapphire is transparent and its colour varies from blue to white. Crystals are hexagonal, usually showing asterism.

*Nīlam* occurs in Burma, Sri Lanka, and India. In India it occurs specially in Jammu and Kashmir and near Vijayanagaram. Its hardness is 9 and sp. gr. 4.

*Varieties of nīlam :*

| | |
|---|---|
| As per *Rasa* texts | 1. *Indranīla* - Deep blue - Good. |
| | 2. *Jalanīla* - Whitish blue - ordinary. |
| As per modern texts | 1. Blue, violet. |
| | 2. Yellow, golden yellow. |
| | 3. Green. |
| | 4. White. |

*Synonyms of nīlam :*

*Indranīla, Mahānīla, Śakranīla, Kṛṣṇamaṇī, Jalanīla.*

*Physical properties of nīlam :*

*Superior variety* - *Nīlam* of superior variety should be deep blue in colour, possess one colour only, shall be heavy, clear, shining, beautiful, smooth, bright and round. *Mahānīla* and *indranīla* are such and their blue colour should resemble either the cloud or *atasīpuṣpa*. It makes milk or clear water look blue when put in them.

*Inferior variety* - The *nīlam* which is soft, light-red, rough, small, flat, has different colours in the two halves and contain blood like smell is inferior. According to *Rasa Praḳāśa Sudhākara jalanīla* is considered such.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | x |
| *Guṇa* | - | x |
| *Karma* | - | *Balya, vṛṣya, dīpana, rasāyana, medhya, hṛdya, tvacya, varṇya, viṣahara,* and *pāpaghna.* |
| *Doṣa prabhāva* | - | *Tridoṣaghna.* |

*Vyādhi-prabhāva* - *Kāsa, svāsa, jvara, viṣama jvara, kuṣṭha, pāṇḍu, arśa, pāpajaroga, śanigrahajanya roga (yakṣmā, vātodara, mūrcchā, snāyuruk, kṛmī, pakṣāghāta, śvāsa, plīhāroga, jīrṇa-jvara, sarvāṅgavāta, hastapādaprakampa).*

*Processing of nīlam :*

*Śodhana :*

| | | |
|---|---|---|
| *Śodhana* drugs | - | *Nilīrasa.* |
| *Śodhana* process | - | *Svedana* in *dolāyantra* for one *yāma.* |

*Māraṇa :*

| | | |
|---|---|---|
| *Māraṇa* drugs | - | *Mṛta vajracūrṇa.* |
| *Bhāvanā* drugs | - | *Mayūrapitta.* |
| Process | - | Roasting with *vajracūrṇa.* The process becomes easier if *mayūrapitta* is added and the gem ground with it and then roasted. |

*Note* - *Nīlam* is the most favourite gem of the planet Śani and hence should be worn on the body or used internally to please the planet Śani and remove its *prakopa (bad effects).*

## TĀRKṢYA (EMERALD OR BERYL) $BeO_3.Al_2O_3.6SiO_2$

*Modern description*

Chemically *tārkṣya* is berylium aluminium silicon oxide but it also contains chromium in traces which imparts a green colour to it. *Tārkṣya* has a shining deep green colour and its value is in proportion to its greenness, transparency and brightness. It is an intimate mixture of corundum, magnesite, hematite, quartz and spinel and may vary from dark grey to black. Initially it was considered to be an iron ore. Its hardness varies from 7 to 9.

*Tārkṣya* occurs in Columbia, Russia, China, Central Asia, Egypt and India. In India it is obtained from Kashmir, Punjab, Rajasthan, Madhya Pradesh, Bihar, Mysore and Coimbatore in small quantities.

*Varieties of tārkṣya :*

Varieties of *tārkṣya* are not mentioned in Āyurvedic *rasa* texts. However, in modern literature its three varieties based on colour are mentioned.

| | | |
|---|---|---|
| 1. Green | - | Good. |
| 2. Bluish | - | Medium. |
| 3. Whitish | - | Ordinary. |

*Synonyms of emerald :*

*Tārkṣya, gārutmata, garuḍodgāra, dṛṣadgarbha, haritamaṇi.*

*Physical properties of emerald :*

*Superior variety* - *Tārkṣya* of superior variety should be green like grass, leaf of banana or bamboo, should shine like sun rays, should be smooth, brilliant, heavy, big, and without holes and bubbles. Further, it should resemble peacock's neck in colour and appearance.

*Inferior variety* - *Tarksya* which is black, reddish black, blue and white, rough, flat, uneven, light small, contains holes and bubbles is inferior.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | *Madhura.* |
| *Guṇa* | - | *Śīta, snigdha.* |
| *Vīrya* | - | *Śīta.* |
| *Karma* | - | *Ojovardhana, balya vṛṣya, puṣṭikara, agnidīpana, pācana, rucikara, viṣaghna, bhūtabādhāhara.* |
| *Doṣa prabhāva* | - | *Sannipātanut.* |
| *Vyādhi prabhāva* | - | *Agnimāndya, amlapitta, chardi, arśa, śūla, jvara, śopha, pāṇḍu, śvāsa, sannipāta, viṣa* and *Budhagrahajanya roga (tvakroga, vātajapīḍā, vicarcikā, unmāda, jihvāroga, vamana, kaphaja* and *tridoṣaja vyadhis).* |

*Processing of tārkṣya :*

*Śodhana :*

*Śodhana* drugs - *Godugdha.*

*Śodhana* process - *Svedana* in *dolāyantra* for one *yāma.*

*Māraṇa :* As per *māṇikya* or by general method.

*Note* - *Tārkṣya* is the most favourite gem of the planet Budha and hence should be worn on the body or used internally to please the planet Budha and vanish its *prokopa* (ill effects).

## PUṢPARĀGA (TOPAZ) - $Al(FOH)SiO_4$

*Modern description -*

Chemically *puṣparāga* is fluorohydroxy aluminium silicate, containing

aluminium, fluorine, hydrogen, oxygen, and silicon. Its fluorine content varies from 15.5 to 20% and sometimes it does not contain hydrogen. It is also a corundum group stone. Its colour is wine yellow and it is claimed to resemble the flowers of *Cassia fistula*. It may also be greyish, light blue, violet, rosy, reddish in colour, or colourless. Its appearance is clear, shining and transparent, sometimes opaque also. Lustre is vitreous. Hardness is 8 and sp. gr. is 3.5. Crystals are orthorhombic, prismatic.

*Puṣparāga* occurs in North Asia, Burma, Brazil, Sri Lanka, Montana, and India (specially in Himalayas).

*Varieties of puṣparāga :*

Varieties of *puṣparāga* are not mentioned in *Rasa* texts, but in *Yukti Kalpataru* its two types are mentioned.

1. *Padmarāgākarodbhava.*
2. *Marakatākarodbhava.*

*Synonyms of topaz :*

*Puṣparāga, mañjuratna, gururatna, pītamaṇi, vācaspativallabha.*

*Physical properties of topaz :*

*Superior variety* - *Puṣparāga* of superior variety should be yellow like the flowers of *karṇikāra* or *campaka*, and should be heavy, smooth, clear, shining, even, big, soft and transparent. On rubbing over *nikaṣa* (touch stone) it should appear brighter and more shining.

*Inferior variety* - *Puṣparāga* which is reddish-yellow, blackish or pale, rough, uneven, lustreless, dull and less shining is inferior.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | *x* |
| *Guṇa* | - | *Laghu, śīta.* |
| *Vīrya* | - | *Śīta.* |
| *Karma* | - | *Dīpana, pācana, viṣaghna, medhya, bṛmhaṇa, āyuṣya, dāhapraśamana.* |
| *Doṣa prabhāva* | - | *Agnimāndya, chardi, viṣa dāha, mūtrakṛcchra, kuṣṭha, arśa* and *gurugrahajanyaroga (śiropīdā, medoroga, aṅghrivedanā, śvāsāvarodha).* |

*Processing of topaz :*

*Śodhana :*

*Śodhana* drugs - *Dhānyāmla (Kāñjika), Kulattha kaṣāya.*

*Śodhana* process - *Svedana* in *dolāyantra* for one *yāma.*

*Māraṇa :* As for *māṇikya* or by the general method.

*Note :* *Puṣparāga* is the most favourite gem of the planet Guru and hence should be worn on the body or used internally to please the planet Guru and remove its *prakopa* (ill effects).

## VAJRA (DIAMOND)

*Modern description -*

Chemically *Vajra* (diamond) contains carbon only and belongs to coal group. Hence when heated in open air in the presence of oxygen at high temperature $CO_2$ is produced from it. The difference between diamond and coal lies in their structure, *i.e.,* in diamond the carbon atoms are situated densely hence it is very hard. Its hardness is 10, and sp. gr. is 3.5. Diamond has no specific colour or is usually colourless but sometimes it is slightly yellowish, yellow, red, green, blue and rarely black. Its crystals are cubic, hexaoctohedral, often rounded or distorted. The crystals are transparent to translucent and opaque. The colourless diamonds are pure carbon but coloured stones may contain calcium, sodium, copper, silicon, aluminium, boron, iron and magnesium in traces. Diamond is unaffected by acids, is an excellent conductor of heat but poor conductor of electricity.

Till 17th A.D. diamond was not found in any other country except India. But now-a-days diamonds are found abundantly in Brazil, Australia, South Africa and India. Indian mines are situated in Vijayanagaram, Golkunda, Madras and Bundelkhanda. India and Borneo were the earliest sources of diamond.

*Varieties of vajra :*

| | | |
|---|---|---|
| On the basis of sex | - 1. *Nara vajra* | - Very good. |
| | 2. *Nārī vajra* | - Good. |
| | 3. *Napuṃsaka vajra* | - Inferior. |
| On the basis of colour | - 1. White, 2. Yellow, 3. Red, 4. Black. | |
| On the basis of castes | - 1. *Brāhmaṇa* | - Good for *Rasāyana karma.* |
| | 2. *Kṣatriya* | - Good for *rogaharaṇa.* |
| | 3. *Vaiśya* | - Good for lohakarma. |
| | 4. *Śūdra* | - Good for *vayastambhana* and *vyādhi śamana.* |

These diamonds are good for the respective castes. However, higher caste diamonds may be used in lower caste persons also, but as per the opinion of Bhairava, lower caste diamonds are not recommended for higher caste persons.

*Synonyms of diamond :*

*Kuliśa, vajra, pavi, hīraka, bhārgavapriya.*

*Physical properties of diamonds :*

*Superior varieties* - Diamonds of superior variety have eight edges, eight surfaces and six angles. It should be very attractive, shining, colourless, transparent, round, light and free from defects like line, spot, *etc.* Further, it should be very clear, white and shining like a star, and should reflect light from its transparent inner surface in different directions producing a very handsome play of colours, and sparkle very brilliantly. Superior variety diamond can cut all other substances but itself remains uncut on account of its extreme hardness.

*Inferior variety* - Diamonds which are thin and long, blue or ash coloured, rough, broken from one side, contain defects like *rekhā, kākapada,* are considered inferior. *Napuṃsaka vajra* belongs to inferior variety.

Male diamond *(nara vajra)* should have eight edges, eight surfaces and six angles, should be highly shining and exhibit many colours like rainbow. It should also be light *(vāritara),* round, and free from defects like line, spot, *etc.* Female diamond *(nārī vajra)* should have all the above characteristics of male diamond but its shape is flat or oval and rough and it may contain line and spot.

Both *nara vajra* and *nārī vajra* are considered to be of superior variety.

Diamond which is round, thin, long, does not have the edges, possess three angles, and heavy is *napuṃsaka vajra.* This is not recommended for use.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | *Ṣadrasa.* |
| *Guṇa* | - | *Snigdha.* |
| *Karma* | | *Āyuprada, parama hṛdya, yogavāhī, pradīpana, vṛṣyatama, vayastambhakara, kāntijanana, saukhyajanana, rasāyana, sudhāsama, balaprada, netrya, medhya, rogaghna, mṛtyuhara, sarva siddhiprada, dravyakari,, rasabandhakara, rasamāraka.* |
| *Doṣa prabhāva* | - | *Tridoṣaśamana.* |

| | |
|---|---|
| *Vyādhi prabhāva* | *Sakala roga, balipālita, rājayakṣmā, prameha, medoroga, pāṇḍu, śotha, udararoga, klaivya* and *mṛtyu.* |
| *Nara vajra :* | *Sarvadoṣāpaha, vedhaka, rasabandhakara, loha krāmaṇaśīla, satvayukta,* good for all. |
| *Nārī vajra :* | *Deha siddhiprada, dehakāntijanana,* specially good for ladies, less powerful. |
| *Napumsaka vajra :* | Possess less *krāmaṇa* power, is without satva, useful for *klības* (impotents) only. |

*Mythological origin :*

Diamond is said to have originated from the fallen drops of *amṛta* (nectar), being drunk by the Gods and demons. Also said to have originated from the body of the demon Bali.

*Processing of diamond :*

*Necessity of śodhana and mārana :*

It is said in *Rasa Mañjarī* and *Rasa Kāmadhenu* that if diamond is used without being processed by *śodhana* and *marana* processes it is likely to produce diseases like *pāṇḍu, pārśvapīḍā, dāha/santāpa, kilāsa, kuṣṭha, bhrama, gurutva* and *kṣaya.*

*Śodhana :*

| | |
|---|---|
| *Śodhana drugs* | - *Kulattha* or *kodrava kvātha, hayamūtra, taṇḍuliya drava, vajrakṣīra, vyāghrī kanda, pārada.* |
| *Śodhana* process | - 1) *Niṣecana* after strong heating for one hundred times at least.<br>2) *Svedana* in *dolāyantra* from one *yāma* to seven days.<br>3) *Puṭapāka* for twentyfour hours.<br>4) Dipping into mercury after heating. |

*Māraṇa :*

| | |
|---|---|
| *Māraṇa* drugs | - Purified *manaḥśilā, haritāla, gandhaka, rasasindura, svarṇamākṣika bhasma.* |
| *Bhāvanā* drugs | - *Kulattha kvātha,* three years old *kārpāsa-mula svarasa.* |
| *Puṭapāka* | - Heating fourteen times by *puṭa* system through *mahāpuṭa* or *gajapuṭa.* |

*Note* - 1) There are a number of *māraṇa* methods for *vajramarāṇa* but the above mentioned method is simple, easy and common. It is a slight modification of the method mentioned by Soma Senānī in *Rasa Ratna Samuccaya.* The conversion of diamond into ash is really a difficult task.

2) Diamond is the most favourite gem of the planet *(graha)* Śukra and hence may be worn on the body or may be used internally in ash form to please the planet Śukra or to remove its *prakopa* (ill effects).

## VAIDŪRYA (CAT'S EYE) $BeAl_2O_4$

*Modern description* -

Chemically *vaidūrya* is berylium aluminium oxide containing BeO 19.8% and $Al_2O_3$ 80.2% with traces of iron and magnesium. Its crystals are orthorhombic, tubular or heart shaped, lustre is vitreous to greasy, colour is greenish white or greenish yellow, transparent to translucent, exhibits play of colours on exposure to sun rays. Its hardness is 8.5 and sp. gr. is 3.6 - 3.8.

Its mineral, Cymophan is opalescent and has a yellow green colour, silky lustre and fibrous structure. Hence the name cat's eye is given to it. It also resembles garlic *(lehaśuna)* in appearance hence in Hindi it is called *lahaśuniyā.* It contains white shining line in the middle and in ancient taxts this is described as if it contains a white cloth like or white cloud like structure across the middle.

On the basis of its shape and appearance *vaidūrya* may belong to two different groups, *viz.*, 1. chrysoberyl or emerald group, and 2. quartz group.

The green fibrous variey, crocidolite, of quartz group is also known as Cat's Eye. It is an asbestos like substance and contains $FeSiO_3$ having a hardness of 4. It appears to be a secondary mineral.

*Varieties of Cats Eye :*

On the basis of colour -
1. White,
2. Smoky,
3. Blackish,
4. Mixed coloured.

On the basis of caste -
1. *Brāhmaṇa* - Whitish blue
2. *Kṣatriya* - Whitish red
3. *Vaiśya* - Yellowish blue
4. *Śūdra* - Blue.

*Synonyms of Cats Eye :*

*Vaidūrya, viḍālākṣa, mārjāranetra.*

*Physical properties of vaidurya :*

*Superior variety* - *Vaidūrya* of superior variety should be blackish white, clear, even, heavy, greasy, smooth, containing white fibre like structure across the middle surface and should look like cat's eye.

*Inferior variety* - *Vaidūrya* which is black, looks like water, rough, flat, light in weight and contain red lines in its middle is considered inferior.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | *Madhura.* |
| *Guṇa* | - | *Śīta, snigdha.* |
| *Vīrya* | - | *Śīta.* |
| *Karma* | - | *Dīpana, pācana, buddhi/prajñābardhana, āyubardhana, balabardhana, parama-bṛmhaṇa, medhya, netrya, malamocana.* |
| *Doṣa prabhāva* | - | *Pittaghna.* |
| *Vyādhi prabhāva* | - | *Raktapitta, pittāmaya, netraroga, ketugrahajanya roga.* |

*Processing of vaidūrya :*

*Śodhana :*

| | | |
|---|---|---|
| *Śodhana* drugs | - | *Triphalā kvātha.* |
| *Śodhana* process | - | *Svedana* in *dolāyantra* for one *yāma.* |

*Māraṇa :*

| | | |
|---|---|---|
| *Māraṇa* drugs | - | *Māṇikya* and *vajra* powder. |
| *Māraṇa* process | - | *Vaidūrya* powder mixed with the above powders and heated in *gajapuṭa* fire by *puṭa* system is converted into ashes. The other process may be the same as followed in the case of *māṇikya.* |

*Note* - *Vaidūrya* is the most favourite gem of the planet *(graha)* Ketu and hence may be worn on the body or used internally to please the planet Ketu or to remove its *prakopa* (ill effects).

## GOMEDA (CINNAMON STONE/HESSONITE) $CaAl(SiO_2)$

*Modern description* -

Chemically *gomeda* is calcium aluminium silicate in which calcium may be replaced partially by ferrous iron and aluminium by ferric iron. Its crystals are

cubic, colour is dark brown or rose red, hardness is 6·5 to 7·5 and sp. gr. is 3·5 to 3·7. It is translucent to opaque having vitreous to resinous lustre. Its mineral is grossularite.

Some scholars consider zircon ($ZrSiO_4$) as *gomeda*. Zircon is brown or greyish in colour, transparent to opaque, has tetragonal crystals and adamantine lustre. Its hardness is 7·5 and sp. gr. is 4·65 to 4·71.

According to *Rasendra Cūḍāmaṇi* the colour of *gomeda* should resemble the colour of cow's fat and that is why it is named as *gomeda*, and this means it should be *light red* in colour. *Nighaṇṭu Ratnākara* mentions that it is similar to *gomūtra* (cow's urine) in colour.

*Gomeda* occurs in South Africa, Ukraine and Arizona. It does not occur in India.

*Varieties of gomeda :*

Four varieties of *gomeda* based on colour and caste are described in *Rasa Kāmadhenu*. These are :

1. Whitish yellow - *Brāhmaṇa*.
2. Reddish yellow - *Kṣatriya*.
3. Yellow - *Vaiśya*.
4. Blackish yellow - *Śūdra*.

*Synonyms of gomeda :*

*Gomeda, pītaratna, tṛṇajvara, sundara.*

*Physical properties of gomeda :*

*Superior variety* - *Gomeda* of superior variety should be smooth, clear, shining, heavy, even, without layers, having a colour similar to that of *gomeda* or *gomūtra, i.e.*, light brown.

*Inferior variety* - *Gomeda*, which is less shining, opaque, rough, flat, with layers, light in weight, dirty, dull, looking like yellow glass is inferior. This is not recommended.

Just like diamond *gomeda* also possesses defects like-*mala, bindu, rekhā, trāsa* and *kākapada*.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | *Amla*. |
| *Guṇa* | - | *Uṣṇa*. |
| *Karma* | - | *Dipana, pācana, rucya, tvacya, atibuddhi-prabodhana, balya, pāpanāśana*. |

*Doṣa prabhāva* - *Kapha pittaghna, vātakapha vikāranut.*

*Vyādhi prabhāva* - *Pāṇḍu, kṣaya, kaphavāta vikāra, tvak doṣa, aruci.*

*Processing of gomeda :*

*Śodhana :*

*Śodhana* drugs - *Nimburasa.*

*Śodhana* process - *Svedana* in *dolāyantra* for one *yāma.*

*Māraṇa :*

Just like that for *māṇikya* or by general method.

*Dose* - 1/4th to 1 *guñjā.*

*Note* - *Gomeda* is the most favourite gem for the planet *(graha)* Rāhu and may be used for wearing on the body or internally to please the *graha* Rahu or to remove its *prakopa* (ill effects).

## MŪKTA (PEARL) $CaCO_3$

*Modern description* -

Chemically *pearl* is calcium carbonate but it may also contain some other elements in traces which makes pearl medicinally more effective than other calcium compounds such as *śaṅkha, śukti, varāṭa, pravāla* and marble.

Pearls generally occur in the sea inside a shell known as *Muktā Śukti.* They are obtained from Australian, Iranian and Indian oceans. Of the various pearls, Basarai pearls are considered the best. In India, natural pearls are obtained from the sea near Kathiawar and Rameshwaram from the shallow sea water.

According to ancient belief, *muktā* is obtained from the following sources, *viz., megha, varāha, śaṅkha, śukti, gaja, matsya, śarpa* and *bamśa.* Of these, *śukti* is the most common source of *muktā* and muktā from *śukti* is considered the best for medicinal uses.

In addition to these natural sources pearls now-a-days are produced artificially by culture method. These pearls are in no way inferior to the natural ones.

*Formation of pearls in śukti :*

Pearls are formed in the *Muktā Śuktis.* Actually these are formed by a secretion of a worm living inside the *Muktā Śukti.* It is secreted from the outer portion of the skin of the worm and is very shining. And because of this the

inner surface of the *Muktā Śukti* looks very bright and shining. It is a continuous process and the secretion goes on sticking on the inner surface of the *Śukti* but sometimes if a sand particle enters into the *Śukti*, the secretion starts adhering around the particle and in due course, when many layers of secretion adheres on the particle, a pearl is formed. The size of pearl depends upon the number of layers of the secretion which adheres on the granule or on the particle. These layers consist of two types of secretions. The first type of secretion is calcium carbonate while the second type is *Kanchi Maline*. These layers are like those of onion. Thus when light rays fall on pearls some rays get reflected from the outer layers while the others enter to still deeper layers and get reflected from there. This produces a play of light rays which looks most beautiful to the viewer and makes the pearl most shining and bright. But sometimes an opaque substance comes in between the layers during pearl formation and this makes the pearl uneven, opaque and defective. This is the natural process of pearl formation but in this process one has to depend on nature for the entrance of the sand particle in the *Muktā Śukti* containing the worm. Hence natural pearls are rare. To overcome this, scientists have developed a culture method for pearl production. In this process a small granule is put inside the *Muktā Śukti* containing the worm and the shells are closed. The *Śukti* is then put in the sea water to allow the worm to secrete and the secretion to adhere on the granule,thus facilitatingthe formation of good pearl in due course. By this process a good variety of pearl is formed in a comparatively shorter period. There is not much difference between natural and cultured pearls as both are formed under the same conditions and with the same materials.

*Varieties of pearls :*

*According to method of preparation :*

| | | |
|---|---|---|
| *Prākṛta* | - | 1. Natural |
| | | 2. Cultured |
| *Kṛtrima* | - | Artificial |

*According to origin :*

Eight types, (1) *meghaja*, (2) *śaṅkhaja*, (3) *baṃśaja*, (4) *varāhaja*, (5) *hastija*, (6) *mīnaja*, (7) *phaṇija* and (8) *śuktija*.

*Synonyms of pearl :*

*Muktā, muktāphala, śauktikeya, śaśipriya, candraratna, jivaratna, sindhuja.*

*Physical properties of pearls :*

*Superior variety* - The pearls which are like a star or rays, smooth, clear,

round, light, big in size, pleasing, and looking like clear water are superior. Some scholars are of the view that heavy pearls are the best.

*Inferior variety* - The pearls which are rough, blackish or reddish in colour, half white, look like salt, lustreless, uneven, dirty, opaque, contain nodules and look like a *kṣāra* (alkali) are inferior.

*Defects of pearls :*

The pearls are said to contain four *mahādoṣas* (great blemishes) and six *samānyadoṣas* (minor blemishes). Their names and effects are as follows :

| | | |
|---|---|---|
| 1. *Śukti khaṇḍa* | - | *Kaṣṭakara.* |
| 2. *Matsyākṣa* | - | *Putra nāśakara.* |
| 3. *Jaṭhara* | - | *Mṛtyukara.* |
| 4. *Vidrumacchāya* | - | *Dāridryakara.* |
| 5. *Trivṛtta* | - | *Saubhāgya nāśaka.* |
| 6. *Cipiṭa* | - | *Akīrtikara.* |
| 7. *Kṛśa* | - | *Prajñā vidhvaṃśakara.* |
| 8. *Trikoṇa* | - | *Saubhāgya kṣayakara.* |
| 9. *Kṛśa pārśva* | - | *Nirudyogakara.* |
| 10. *Avṛtta* | - | *Sarva sampattināśaka.* |

According to *Rasa Paddhati* pearls are supposed to have three types of lustres :

| | | |
|---|---|---|
| 1. *Madhucchāya* | - | like honey. |
| 2. *Sitacchāya* | - | like sugar. |
| 3. *Srikhandacchaya* | - | like *śrīkhaṇḍa* (a preparation made of curd and sugar) |

*Srīkhaṇḍacchāya* pearls or pearls having the lustre similar to that of *śrīkhaṇḍa* are considered of superior quality.

*Test of good quality pearls :*

Pearls should be rubbed with the husk of *śāli* (rice) and then washed with salted cow's urine. If no change is observed, the pearls are considered of good quality. Pearls lose their lustre if treated with sulphuric acid.

*Mythological origin :*

A) Mythologically pearls are supposed to have originated from the broken parts of teeth of the demon Bala.

B) It is believed that if a drop of rain water falls inside a *śukti* floating in the sea-water in Svāti *nakṣatra*, the drop turns into pearl of good quality. It is further stated that if this happens in *rukmaṇī* variety of *śukti* the pearl would be still better in quality. Only such pearls are considered the most auspicious.

*Pharmaco-therapeutic properties* :

| | | |
|---|---|---|
| *Rasa* | - | *Madhura.* |
| *Guṇa* | - | *Suśita, laghu, snigdha.* |
| *Vīrya* | - | *Śīta.* |
| *Karma* | - | *Bṛṃhaṇa, vṛṣya, balya, āyuṣya, medhya, vīryaprada, tuṣṭikara, puṣṭikara, cakṣusya, dīpana, kāntiprada, viṣāpaha, dāha śāmana, asthidanta vivardhana.* |
| *Doṣa prabhāva* | - | *Pittahara, kaphapittahara.* |
| *Vyādhi prabhāva* | - | *Rājyakṣmā, kṣata, kṣaya, kāsa, śvāsa, vīryakṣaya, dāha, dantodbhedaja jvara, santāpa, agnimāndya, prameha, dṛṣṭiroga, unmāda, vātavyādhi,* diseases caused by *candragraha prakopa, (galaganḍa, ganḍamālā, ślīpada, jalodara, śvāsa, kāsa, hrdroga, śula, chardi, kṣaya, jvara.)* |

*Processing* :

*Śodhana* :

| | | |
|---|---|---|
| *Śodhana* drugs | - | *Jayantīpatra rasa, agastya patra rasa, nimbu rasa, uṣṇodaka.* |
| *Śodhana* process | - | *Svedana* in *dolāyantra* for one *yāma, prakṣālana* with *uṣṇodaka.* |

*Māraṇa* :

| | | |
|---|---|---|
| *Māraṇa* process | - | Grinding with *kumāri rasa, godugdha* and *arka gulāb* and heating three times in *laghuputa.* |
| *Bhasma* colour | - | White like moon. |

*Piṣṭi nirmāna* :

For preparing *piṣṭi*, powdered pearls are ground with rose water, *arka kevarā, arkaveda* musk, *etc.* for twentyone days or till they become very fine like collyrium. The *piṣṭi* so obtained is a light pink powder.

*Dose* - 1/4th to 1 *guñjā* in suitable vehicle.

*Note* - Pearl is the most favourite gem of the planet Moon *(Candragraha)* and hence may be used for wearing on the body or internally to please the planet, Moon or to cure the diseases caused by its *prakopa* (ill effects).

## PRAVĀLA (CORAL) $CaCO_3$

*Modern description* -

Chemically coral also is calcium carbonate but contains other elements in traces which makes it different from other calcium carbonate group of compounds and therapeutically more effective.

Corals generally occur in shallow sea water but red or rosy corals are obtained from a depth of at least 50 feet. Corals are originated from the sea animal *Anthozoan polyps.* These animals drink sea water for their survival, and calcium in the sea water is absorbed and get deposited in various parts of their body. After some time when the quantity of deposited calcium in the body becomes excessive the animals die and the dead body is known as *pravāla* or coral. These animals are found in different shape, have many feet and ring like structures. A special type of water and a particular temperature is required for their growth and hence these are found only in some particular places. Such places are in Mediterranean Sea between Europe and Africa, south of Burma, and north of Australia. In these places the coral reefs spread over hundreds of miles and still the animals continue to grow in the sea water.

In Āyurvedic literature also, corals are said to be obtainable from the sea and are described as creeper *(latā).*

*Varieties :*

On the basis of colour there are four varieties of coral *viz.*, white, grey, black, and red or rosy. Of these only the red or rosy corals are considered the best and recommended for *rasakarma, rasāyanakarma, dāna, dhāraṇa, etc.* These are found in Mediterranean Sea near Italy.

On the basis of caste *pravāla* is described to be of four types :

1. *Brāhmaṇa* - red like rabbit blood and smooth.
2. *Kṣatriya* - red like *japāpuṣpa* and rough.
3. *Vaiśya* - red like *palāśapuṣpa* and less shining.
4. *Śūdra* - red like lotus and without shine and lustre.

*Synonyms :*

*Vidruma, abdhilatā, latāmaṇi, raktakanda, bhaumaratna.*

*Physical properties :*

*Superior variety* - Coral which is red like ripe *bimbīphala*, long, round, even, smooth, thick, without holes and fissures is of superior variety.

*Inferior variety* - A coral which is whitish or grey coloured, rough, light, thin, and contains holes and fissures is of inferior variety.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | *Kaṣāya, madhura,* and *amla.* |
| *Guṇa* | - | *Laghu, snigdha, śīta.* |
| *Vīrya* | - | *Śīta.* |
| *Karma* | - | *Dīpana, pācana, balya, puṣṭikara, kāntikara, vīryavṛddhikara, cakṣuṣya, maṅgalya, bhūtādi śamana, graha doṣahara.* |
| *Doṣa prabhāva* | - | *Pittahara, kaphapittanut, tridoṣaghna.* |
| *Vyādhi prabhāva* | - | *Rājayakṣma, kṣaya, kṣata, kāsa, śvāsa, raktapitta, dṛṣṭiroga, raktaroga, bhūtonmāda* and the diseases caused by the wrath of *maṅgalagraha, viz., raktaduṣṭi, raktapitta, dadru, visphoṭa, bhagandara, duṣṭa vraṇa, prameha, asthi bhaṅga, raktasrāva, raktātisāra,* and *viṣa.* |

*Processing :*

*Śodhana :*

| | | |
|---|---|---|
| *Śodhana* drugs | - | *Jayantīpatra rasa, taṇḍulīya rasa, kṣāra drava.* |
| *Śodhana* process | - | *Svedana* in *dolāyantra* for one *yāma.* |

*Māraṇa :*

| | | |
|---|---|---|
| *Māraṇa* drugs | - | Nothing specific. |
| *Bhāvanā* drugs | - | *Kumarīsvarasa, godugdha, satāvarī rasa, jayantī rasa.* |
| *Māraṇa* process | - | Heating by *puṭa* system applying two to three *gajapuṭas.* |
| Colour of *bhasma* | - | White. |
| *Piṣṭi nirmāna* | - | Purified coral powder should be ground with rose water or *kevarā* water till it becomes fine like collyrium. |
| Dose | - | 1-2 *guñjā* with honey. |

*Note* - Coral is the most favourite gem of the planet *(graha)* Maṅgala and may be used for wearing on the body or internally to please Maṅgala graha or to destroy its ill effects.

## UPARATNAS (SEMI-PRECIOUS STONES)

Some *Uparatnas* (semi-precious stones) are also recognised for their medicinal values. The stones which are less hard, less shining, less transparent, and less costly are included in this group. The following substances of this group are found described in *Rasa Ratna Samuccaya.*

| | | |
|---|---|---|
| *Vaikrānta* | - | Tourmaline |
| *Sūryakānta* | - | Sun stone |
| *Candrakānta* | - | Moon stone |
| *Rājāvarta* | - | Lapis lazuli |
| and *Sphaṭika* | - | Quartz. |

## VAIKRĀNTA (TOURMALINE)

Much details about *vaikrānta,* except its *druti* processes, are not available in this chapter of *Rasa Ratna Samuccaya.* But according to the description in other *Rasa* texts, it appears that *vaikrānta* has been included in two groups, *i.e.,* in *mahārasa* group and in *maṇi* group in general, and in *uparatna* group in particular. It is also said about *vaikrānta* that vaikrānta could be used in the place of *vajra* (diamond), as it is almost similar to *vajra* in characteristics and properties. Some *rasa* texts call it *paṅka vajra* or *dagdha hīraka* which also suggests that it is very close to diamond in quality and properties. On this basis some scholars consider it as Irish diamond. The other details regarding *vaikrānta* have been described in the second chapter of *Rasa Ratna Samuccaya.*

## SŪRYAKĀNTA (SUN STONE) $Na_2Al_2O_36SiO_2$ or $CaOAl_2O_32SiO_2$

*Modern description* -

Chemically sun stone is a combination of sodium, aluminium, silicon, oxygen, and calcium. It is a variety of *Adularia.* Its mineral is called Avanturine oligoclase which is somewhat red in colour with bright yellow or red reflections from the ingrained thin scales of hematite. Its crystals are triclinic, hardness is 5.5 to 6, sp. gr. is 2.65. It is translucent, exhibiting reddish flashes owing to the admixture of mica or other thin plate-like minerals.

It is mentioned in ancient texts that owing to its reddish colour *sūryakānta* looks like burning charcoal when the sunrays fall on its surface. It is further said that when the sunrays accumulate on its particular part it becomes very

hot and burns a thin piece of cotton or paper if this is brought near this part of the gem.

Sun stone occurs in Burma, Russia, Norway and Madagaskar.

*Physical properties :*

*Superior variety* - Sun stone of superior variety should be very clear, smooth, round, free from layers and holes, and would look burning when in contact with intense sun-rays.

*Inferior variety* - Sun stone which does not have the above characteristics is of inferior variety.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | *x* |
| *Guṇa* | - | *Uṣṇa.* |
| *Vīrya* | - | *Uṣṇa.* |
| *Karma* | - | *Rasāyana, medhya, ravituṣṭikara.* |
| *Doṣa prabhāva* | - | *Vāta śleṣmahara.* |

*Processing :*

*Māraṇa :*

| | | |
|---|---|---|
| *Māraṇa* drugs | - | *Suddha manaḥśilā* and *gandhaka.* |
| *Māraṇa* process | - | Heating by *puṭa* system using seven *gajapuṭas.* |

*Note* - Sun stone is the favourite gem of the *graha* Surya and may be used for wearing on the body or internally for therapeutic purposes to please the planet.

CANDRAKĀNTA (MOON STONE) $NaAlSi_3O_8$ or $KAlSi_3O_8$

*Modern description* -

Chemically Moon stone is a combination of sodium, aluminium, silicon and oxygen but sometimes it may contain potassium or calcium in place of sodium. It is a variety of Adularia and occurs usually in white or colourless crystals which are usually transparent or slightly cloudy and possess excellent opalescence. Its lustre is vitreous to pearl like. It comes under orthoclase group. Its crystals are monoclinic. A variety of Albite (Soda feldspar) showing bluish opalescence is also called Moon stone. Its crystals are triclinic, usually small and found in twins. These are colourless or grey. Its colour is bluish white but sometimes it may have many colours. In Moon rays it looks very

beautiful, pleasing and very cold and shines like water. In ancient texts it is said about it that if kept in moon rays it starts a secretion. But this is not correct, it only gives such impression.

Moon stone occurs in Sri Lanka, Burma and Madagaskar.

*Physical properties :*

*Superior variety* - Moon stone which is smooth, yellowish from all sides, cold to touch, clear, free from *trāsa doṣa*, gives an impression of secretion in the moon light is of superior variety.

*Inferior variety* - Moon stone not possessing the above characteristics is inferior.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | x |
| *Guṇa* | - | *Śīta.* |
| *Vīrya* | - | *Śīta* |
| *Karma* | - | *Asranut, tāpanut, grahālakṣmīvināśana, śivaprītikara.* |
| *Doṣa prabhāva* | - | *Pittanut.* |
| *Vyādhi prabhāva* | - | *Raktavikāra, pittavikāra, dāha, santāpa, raktapitta.* |

*Processing :*

*Māraṇa :*

May be done by the method used for Sun stone.

*Note* - Moon stone is the favourite gem of the planet Moon *(Candragraha)* and may be used for wearing or internally to please the planet moon.

## RĀJĀVARTA (LAPIS LAZULI) $Na_4(NaS_3Al)Al_2Si0_4$

*Modern description* -

Chemically rājāvarta is a combination of sodium, sulphur, aluminium, silicon and oxygen. It is known as a sulphur containing silicate complex. It is also known as ultramarine which is bright blue in colour. Its crystals are cubical, fracture uneven, lustre is vitreous to greasy, appearance is opaque to translucent, hardness is about 5.5, sp. gr. is 2.4 to 2.8. It is a contact mineral and occurs in crystalline lime stone.

Lapis lazuli occurs mostly in Persia, Turkistan, Afghanistan, Russia and India (near Ajmer). It is also made artificially in Germany.

*Varieties :*

| | | |
|---|---|---|
| According to form | - | *Guṭikā svarupa,*<br>*Cūrṇa svarupa.* |
| According to colour | - | *Rakta* (red),<br>*Nīla* (blue),<br>*Miśrita* (mixed colour) |
| According to source | - | Natural,<br>Artificial. |

*Physical properties :*

*Superior variety* - Lapis lazuli which is blue with reddish tinge, heavy, smooth or oily, very clear, bright, sky coloured or of colour similar to peacock's neck or black is superior.

*Inferior variety* - Lapis lazuli which does not possess the above characteristics is inferior.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | *Kaṭu, Tikta.* |
| *Guṇa* | - | *Snigdha, śita.* |
| *Vīrya* | - | *Śīta.* |
| *Karma* | - | *Dīpana, pācana, vṛṣya, vṛṃhaṇa, rasāyana, viṣāpaha.* |
| *Doṣa Prabhāva* | - | *Ślesmahara, anilāpaha, pittanāśana.* |
| *Vyādhi prabhāva* | - | *Prameha, kṣaya, pāṇḍu, arśa, chardi, meha, mūrcchā, śoṣa, madātyaya, hikkā, dāha, clama.* |

*Processing :*

*Śodhana :*

| | | |
|---|---|---|
| *Śodhana* drugs | - | *Gomūtra* with *kṣāra, nimburasa, kṣāradrava, amla drava, śiriṣa puṣpa rasa, mahiṣī kṣīra* with *goghṛta, ārdraka rasa.* |
| *Śodhana* process | - | 1. *Svedana* in *dolāyantra* for one *yāma.*<br>2. *Pācana* in *lohapātra.*<br>3. *Bhāvanā* two to three times with some of the above liquids. |

*Māraṇa :*

| | | |
|---|---|---|
| *Māraṇa* drugs | - | Purified sulphur, *śukapuccha cūrṇa.* |
| *Bhāvanā* drugs | - | *Nimburasa, bhṛṅgarāja rasa.* |
| Process | - | Heating by *puṭa* system applying seven or eight *gajapuṭas.* |

*Satvapātana :*

| | | |
|---|---|---|
| Satvapatana drugs | - | *Manahśilā, ghṛta, mahiṣikṣīra, mitrapañcaka.* |
| Process | - | Mix all well, heat in an iron pan till dry, then add *mitrapañcaka* and prepare round balls. Put these in a *mūṣā* and apply strong heating using *khadirāṅgār.* |
| Colour of satva | - | Not mentioned. |

## SPHAṬIKA (QUARTZ/ROCK-CRYSTAL) $SiO_2$

*Modern description* -

Chemically it is a combination of silica and oxygen, but sometimes contains other elements in trace which imparts various colours to it. Pure quartz consists of 45.7% Si and 53.3% O. Massive varieties often contain calcium, iron, copper, clay and other impurities. It occurs in distinct crystals which are commonly prismatic, hexagonal or trigonal, its lustre is vitreous to greasy. Pure specimens of quartz are transparent and colourless but most varieties are coloured due to impurities. It occurs abundantly throughout the world. *Akika* (agate) is one of its crystalline varieties.

*Synonyms :*

*Sphaṭikopala, bhāsura, dautopala, śitopala, śālipiṣṭa, amalamaṇi, kācamaṇi, śiva ratna.*

*Physical properties :*

*Superior variety* - Quartz which is white as *Gaṅgā* water, very bright, without layers, smooth, cool to touch, very clear, not loosing brightness even after rubbing or breaking and looking very beautiful is of superior variety.

*Inferior variety* - Quartz which does not possess the above characteristics is inferior.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | - | *Madhura.* |
| *Guṇa* | - | *Atiśīta, snigdha.* |
| *Vīrya* | - | *Śīta, samavirya* (neither *śīta* nor *uṣṇa*). |

| | | |
|---|---|---|
| *Karma* | - | *Hṛdya, netrya, balya.* |
| *Doṣa prabhāva* | - | *Pittahara.* |
| *Vyādhi prabhāva* | - | *Dāha, raktasrāva, raktapitta, jvara, pittaroga, śoṣa.* |

*Processing :*

*Śodhana* and *māraṇa* may be done following the method employed for *rājāvarta.*

*Note* - *Sphaṭika* is the most favourite gem of Lord Śiva. Hence if a garland *(mālā)* made of its round pieces is worn or used for uttering the name of Lord Śiva its effect becomes milion times more for pleasing Lord Śiva.

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Supplement

# RASA RATNA SAMUCCAYA

(Continued)

Fifth Chapter

Sanskrit Text

English Translation

Notes

# पंचमोऽध्यायः

## लोह शोधन मारणादि निरुपणीय

अथ लोहानि–

शुद्धं लौहं कनकरजतं भानुलोहाश्मसारम् ।
पूतीलोहं द्वितयमुदितं नागवङ्गाभिधानम् ।
मिश्रं लौहं त्रितयमुदितं पित्तलं कांस्यवर्तम् ।

लोहशब्दनिरुक्तिः –

धातु लोहे लुह इति मतः सोऽपिकर्षार्थवाची ॥ 1 ॥

स्वर्णभेदाः –

प्राकृतं सहजं वह्निसम्भूतं खनिसम्भवम् ।
रसेन्द्रवेधसंजातं स्वर्णं पंचविधं स्मृतम् ॥ 2 ॥

प्राकृतस्वर्ण स्वरूपम्–

ब्रह्माण्डं संवृतं येन रजोगुणभुवा खलु ।
तत्प्राकृतमिति प्रोक्तं देवानामपि दुर्लभम् ॥ 3 ॥

सहजस्वर्ण स्वरूपम्–

ब्रह्मा येनाऽवृतो जातः सुवर्णेन जरायुणा ।
तन्मेरुपतां यातं सुवर्णं सहजं हि तत् ॥ 4 ॥

वह्निसम्भवस्वर्णस्वरूपम्–

विसृष्टमग्निना शैवं तेजः पीतं सुदुःसहम् ।
अभूत्सर्वं समुद्दिष्टं सुवर्णं वह्निसम्भवम् ॥ 5 ॥

त्रिविधस्वर्णगुणाः –

एतत्स्वर्णत्रयं दिव्यं वर्णैः षोडशभिर्युतम् ।
धारणादेव तत्कुर्याच्छरीमजरामरम् ॥ 6 ॥

खनिजस्वर्ण स्वरूप गुणाः –

तत्र तत्र गिरीणां हि जातं खनिषु यद्भवेत् ।
तच्चतुर्दशवर्णाढ्यं भक्षितं सर्वरोगहृत् ॥ 7 ॥

रसेन्द्रवेधजस्वर्णगुणाः –

रसेन्द्रवेधसम्भूतं तद्वेधजमुदाहृतम् ।
रसायनं महाश्रेष्ठं पवित्रं वेधजं हि तत् ॥ 8 ॥

स्वर्णरौप्यगुणाः –

आयुर्लक्ष्मीप्रभाधीस्मृतिकरमखिलव्याधिविध्वंसिपुण्यं
भूतावेशप्रशान्तिस्मरभरसुखदं सौख्यपुष्टिप्रकाशि ।
गांगेयं चाथ रूप्यं गदहरमजराकारि मेहापहारि
क्षीणानां पुष्टिकारि स्फुटमतिकरणं वीर्यवृद्धिप्रकारि ॥ 9 ॥

स्वर्णगुणाः –

स्निग्धं मेध्यं विषगद्हरं बृंहणं वृष्यमग्र्यं ।
यक्षोन्मादप्रशमनपरं देहरोगप्रमाथि ।
मेधाबुद्धिस्मृतिसुखकरं सर्वदोषामयघ्नं ।
रुच्यं दीप्तिप्रशमितरुजं स्वादुपाकं सुवर्णम् ॥ 10 ॥

अशुद्धामृतस्वर्णदोषाः –

सौख्यं वीर्यं बलं हन्ति रोगवर्गं करोति च ।
अशुद्धममृतं स्वर्णं तस्माच्छुद्धं च मारयेत् ॥ 11 ॥

स्वर्णवर्णोत्कर्षकरणम्–

कर्षप्रमाणं तु सुवर्णपत्रं
शरावरुद्धं पटुधातुयुक्तम् ।
अंगारसंस्थं प्रहरार्धमानं
ध्मातेन तत्स्यान्ननु पूर्णवर्णम् ॥ 12 ॥

लोहसामान्यशोधन विधिः –

तैले तक्रे गवां मूत्रे ह्यारनाले कुलत्थजे ।
क्रमान्निषेचयेत्तप्तं द्रावे द्रावे तु सप्तधा ॥
स्वर्णादिलोहपत्राणां शुद्धिरेषा प्रशस्यते ॥ 13 ॥

लोहमारणस्यगुणागुणत्वम्–

लोहानां मारणं श्रेष्ठं सर्वेषां रसभस्मना ।
मूलीभिर्मध्यमं प्राहुः कनिष्ठं गन्धकादिभिः ।
अरिलोहेन लोहस्य मारणं दुर्गुणप्रदम् ॥ 14 ॥

## स्वर्णमारणम्

प्रथमोविधिः –

कृत्वा कण्टकवेध्यानि स्वर्णपत्राणि लेपयेत् ।
लुंगाम्बुभस्मसूतेन म्रियते दशभिः पुटैः ॥ 15 ॥

द्वितीयोविधिः –

द्रुते विनिक्षिपेत्स्वर्णे लोहमानं मृतं रसम् ।
विचूर्ण्य लुंगतोयेन दरदेन समन्वितम् ॥
जायते कुंकुमच्छायं स्वर्णंद्वादशभिः पुटैः ॥ 16 ॥

तृतीयोविधिः –

हेम्नः पादं मृतं सूतं पिष्टमम्लेन केनचित् ।
पत्रे लिप्त्वा पुटैः पच्यादष्टभिर्म्रियते ध्रुवम् ॥ 17 ॥

स्वर्णभस्मस्य प्रयोगविधिर्गुणाश्च–

एतद्भस्म सुवर्णजं कदुघृतोपेतं द्विगुंजोन्मितं ।
लीढं हन्ति नृणां क्षयाग्निसदनं श्वासं च कासारुचिम् ॥
ओजोधातुविवर्धनं बलकरं पाण्ड्वामयध्वंसनं
पथ्यं सर्वविषापहं गरहरं दुष्टग्रहण्यादिनुत् ॥ 18 ॥

अपक्वहेमदोषाः –

बलं च वीर्यं हरते नराणां
रोगव्रजं कोपयतीह काये ।
असौख्यकारि च सदैव हेमा–
पक्वं सदोषं मरणं करोति ॥ 19 ॥

## स्वर्णद्रुतिः

प्रथमोविधिः –

मण्डूकास्थिवसाटंकहयलालेन्द्रगोपकैः ।
प्रतिवापेन कनकं सुचिरं तिष्ठति द्रुतम् ॥ 20 ॥

द्वितीयोविधिः –

चूर्णं सुरेन्द्रगोपानां देवदालीफलद्रवैः ।
भावितं बहुशो[1] हेम करोति जलवद्द्रुतम् ॥ 21 ॥

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1. सहस्रं

रजत भेदाः –

सहजं खनिसञ्जातं कृत्रिमं त्रिविधं मतम् ।
रजतं पूर्वपूर्वं हि स्वगुणैरुत्तरोत्तरम् ॥ 22 ॥

सहजरजत स्वरूपम्–

कैलासाद्यद्रिसम्भूतं सहजं रजतं भवेत् ।
तत्स्पृष्टं हि सकृद्व्याधिनाशनं देहिनां भवेत् ॥ 23 ॥

खनिजरजत स्वरूपम् –

हिमालयाद्रिकूटेषु यद्रूप्यं जायते हि तत् ।
खनिजं कथ्यते तज्ज्ञैः परमं हि रसायनम् ॥ 24 ॥

कृत्रिमरजत स्वरूपम् –

श्रीरामपादुकान्यस्तं वङ्गं यद्रूप्यतां गतम् ।
तत्पादरूप्यमित्युक्तं कृत्रिमं सर्वरोगनुत् ॥ 25 ॥

श्रेष्ठरजतगुणाः

घनं स्वच्छं गुरु स्निग्धं दाहे छेदे सितं मृदु ।
शङ्खाभं मसृणं स्फोटरहितं रजतं शुभम् ॥ 26 ॥

त्याज्यरजतगुणाः

दाहे रक्तं च पीतं च कृष्णं रूक्षं स्फुटं लघु ।
स्थूलाङ्गं कर्कशाङ्गं च रजतं त्याज्यमष्टधा ॥ 27 ॥

रौप्यगुणाः

रुप्यं विपाकमधुरं तुवराम्लसारम् ।
शीतं सरं परमलेखनकं च रूप्यम् ।
स्निग्धं च वातकफजिज्जठराग्निदीपि
बल्यं परं स्थिरवयस्करणञ्च मेध्यम् ॥ 28 ॥

रजतस्यरसगुणाः

रौप्यं शीतं कषायाम्लं स्निग्धं वाहतहरं लघु ।

रजतसेवनविधिः

रसायनविधानेन सर्वरोगापहारकम् ॥ 29 ॥

अशुद्धामृततारदोषाः –

आयुः शुक्रं बलं हन्ति तापविड्बन्धरोगकृत् ।
अशुद्धं न मृतं तारं शुद्धं मार्यमतो बुधैः ॥ 30 ॥

## तारशोधनम्

प्रथमोविधिः –

नागेन टंकणेनैव वापितं शुद्धिमृच्छति ।
तारं त्रिवारं निक्षिप्तं तैले ज्योतिष्मतीभवे ॥ 31 ॥

द्वितीयोविधिः –

खपरे भस्मचूर्णाभ्यां परितः पालिकां चरेत् ।
तत्र रूप्यं निनिक्षिप्य समसीससमन्वितम् ॥ 32 ॥
जातसीसक्षयं यावद्धमेत्तावत्पुनः पुनः ।
इत्थं संशोधितं रूप्यं योजनीयं रसादिषु ॥ 33 ॥

## तारमारणम्

प्रथमोविधिः –

लकुचद्रवसूताभ्यां तारपत्रं प्रलेपयेत् ।
ऊर्ध्वाधो गन्धकं दत्वा मूषामध्ये निरुध्या च ॥
पाचयेद्वालुकायन्त्रे दिनमेकं दृढ़ाग्निना ॥ 34 ॥
स्वाङ्गशीतां च तां पिष्टिं साम्लतालेन मर्दिताम् ।
पुटेद्द्वादशवाराणि भस्मीभवति रूप्यकम् ॥ 35 ॥

द्वितीयोविधिः –

माक्षीकचूर्णलुङ्गाम्लमर्दितं पुटितं शनैः ।
त्रिंशद्वारेण तत्तारं भस्मसाज्जायतेतराम् ॥ 36 ॥

तृतीयोविधिः –

भाव्यं ताप्यं स्नुहीक्षीरैस्तारपत्राणि लेपयेत् ।
मारयेत्पुटयोगेन निरुत्थं जायते ध्रुवम् ॥ 37 ॥

चतुर्थोविधिः –

तारपत्रं चतुर्भागं भागैकं शुद्धतालकम् ।
मर्द्यं जम्बीरजद्रावैस्तारपत्राणि लेपयेत् ॥ 38 ॥
रोधयेदन्धयन्त्रे च त्रिंशदुत्पलकैः पचेत् ।
चतुर्दशपुटैरेवं निरुत्थं जायते ध्रुवम् ॥ 39 ॥

रजतभस्मप्रयोगविधिर्गुणाश्च–

भस्मीभूतं रजतममलं तत्समौ व्योमभानू,
सर्वैस्तुल्यं त्रिकटुसवरं सारघाज्येन युक्तम् ।

लीढं प्रातः क्षपयतितरां यक्ष्मपाण्डूदरार्शः
श्वासं कासं नयनजरुजः पित्तरोगानशेषान् ॥ 40 ॥

तारद्रुतिः –

सप्तधा नरमूत्रेण भावयेद्देवदालिकाम् ।
तच्चूर्णवापमात्रेण द्रुतिः स्यात्स्वर्णतारयोः ॥ 41 ॥

ताम्रभेदाः –

म्लेच्छं नेपालकं चेति तयोर्नेपालकं वरम् ।
नेपालादन्यखन्युत्थं म्लेच्छमित्यभिधीयते ॥ 42 ॥

म्लेच्छताम्र स्वरूपम् –

सितकृष्णारुणच्छायमतिवामि कठोरकम् ।
क्षालितं च पुनः कृष्णमेतन्म्लेच्छकताम्रकम् ॥ 43 ॥

नेपालताम्र स्वरूपम् –

सुस्निग्धं मृदुलं शोणं घनाघातक्षमं गुरु ।
निर्विकारं गुणश्रेष्ठं ताम्रं नेपालमुच्यते ॥ 44 ॥

त्याज्यताम्र स्वरूपम् –

पाण्डुरं कृष्णशोणं च लघुस्फुटनसंयुतम् ।
रुक्षांगं सदलं ताम्रं नेष्यते रसकर्मणि ॥ 45 ॥

ताम्रस्यरसगुणादयः –

ताम्रं तिक्तकषायकञ्च मधुरं पाकेऽथ वीर्योष्णकं-
साम्लं पित्तकफापहं जठररुक्कुष्ठामजन्त्वन्तकृत् ।
ऊर्ध्वाधः परिशोधनं विषयकृत्स्थौल्यापहं क्षुत्करं-
दुर्नामक्षयपाण्डुरोगशमनं नेत्र्यं परं लेखनम् ॥ 46 ॥

अशुद्धताम्रदोषाः –

अशुद्धं ताम्रमायुघ्नं कान्तिवीर्यबलापहम् ।
वान्तिमूर्च्छाभ्रमोत्कलेदं कुष्ठं शूलं करोति तत् ॥ 47 ॥
उत्क्लेदभेदभ्रमदाहमोहा–
स्ताम्रस्य दोषाः खलु दुर्धरास्ते ।

शोधनफलम् –

विशोधनात्तद्विगतस्वदोषं
सुधासमं स्याद्रसवीर्यपाके ॥ 48 ॥

## ताम्रशोधनम्

प्रथमोविधिः –

ताम्रं क्षाराम्लसंयुक्तं द्रावितं दत्तगैरिकम् ।
निक्षिप्तं महिषीतक्रे छगणे सप्तवारकम् ।
पञ्चदोषविनिर्मुक्तं भस्मयोग्यं हि जायते ॥ 49 ॥

द्वितीयोविधिः –

ताम्रनिर्मलपत्राणि लिप्त्वा निम्ब्वम्बुसिन्धुना ।
ध्मात्वा सौवीरकक्षेपाद्विशुध्यत्यष्टवारतः ॥ 50 ॥

तृतीयोविधिः –

निम्ब्यम्बुपटुलिप्तानि तापितान्यष्टवारकम् ।
विशुध्यन्त्यर्कपत्राणि निर्गुण्डीरसमज्जनात् ॥ 51 ॥

चतुर्थोविधिः –

गोमूत्रेण पचेद्यामं ताम्रपत्रं दृढ़ाग्निना ।
शुद्ध्यते नात्र सन्देहो मारणं चाप्यथोच्यते ॥ 52 ॥

## ताम्रमारणम्–

प्रथमोविधिः –

जम्बीररससम्पिष्टरसगन्धकलेपितम् ।
शुल्बपत्रं शरावस्थं त्रिपुटैर्याति पञ्चताम् ॥ 53 ॥

द्वितीयोविधिः –

अथवा मारितं ताम्रमम्लेनैकेन मर्दितम् ।
तद्गोलं सूरणस्यान्तर्रुद्धवा सर्वत्र लेपयेत् ॥ 54 ॥
शुष्कं गजपुटे पच्यात्सर्वदोषहरं भवेत् ।
वान्तिं भ्रान्तिं विरेकञ्च न करोति कदाचन ॥ 55 ॥

तृतीयोविधिः –

ताम्रपत्राणि सूक्ष्माणि गोमूत्रे पञ्चयामकम् ।
क्षिप्त्वा रसं हि भाण्डे तद्द्विगुणं देहि गन्धकम् ॥ 56 ॥
अम्लपर्णीं प्रपिष्याथ ह्यभितो देहि ताम्रकम् ।
सम्यङ्निरुध्य भाण्डे तमुग्निं ज्वालय यामकम् ॥ 57 ॥
भस्मीभवति ताम्रं तद्यथेष्टं विनियोजयेत् ॥ 58 ॥

चतुर्थोविधिः –

सूताद् द्विगुणितं ताम्रपत्रं कन्यारसैः प्लुतम् ।
पिष्ट्वा तुल्येन बलिना भाण्डमध्ये विनिक्षिपेत् ॥ 59 ॥
छन्नं शरावकेणैतत्तदुर्ध्वं लवणं त्यजेत् ।
मुखे शरावकं दत्वा वह्निं यामचतुष्टयम् ॥ 60 ॥

ताम्रभस्मस्य मात्रा प्रयोगविधिर्गुणाश्च–

अवचूर्ण्यैव तच्छुल्बं वल्लमात्रं प्रयोजयेत् ।
पिप्पलीमधुना सार्धं सर्वरोगेषु योजयेत् ॥ 61 ॥
श्वासं कासं क्षयं पाण्डुमग्निमान्द्यमरोचकम् ।
गुल्मप्लीहयकृन्मूर्च्छाशूलपक्त्यर्थमुत्तमम् ॥ 62 ॥
दोषत्रयसमुद्भूतानामयाञ्जयति ध्रुवम् ।
रोगानुपानसहितं जयेद्धातुगतं ज्वरम् ॥ 63 ॥
रसे रसायने ताम्रं योजयेद्युक्तमात्रया ॥ 64 ॥

सोमनाथीताम्रनिर्माणम् –

शुल्बतुल्येन सूतेन बलिना तत्समेन च ।
तदर्धांशेन तालेन शिलया च तदर्धया ॥ 65 ॥
विधाय कज्जलीं श्लक्ष्णां भिन्नकज्जलसन्निभाम् ।
यन्त्राध्यायविनिर्दिष्टगर्भयन्त्रोदरान्तरे ॥ 66 ॥
कज्जलीं ताम्रपत्राणि पर्यायेण विनिक्षिपेत् ।
प्रपचेद्यामपर्यन्तं स्वाङ्गशीतं विचूर्णयेत् ॥ 67 ॥

तद्गुणाः प्रयोगविधिश्च–

तत्तद्रोगहरानुपानसहितं ताम्रं द्विवल्लोन्मितं
संलीढं परिणामशूलमुदरंशूलञ्च पाण्डुज्वरम् ।
गुल्मप्लीहयकृत्क्षयाग्निसदनं मेहं च मूलामयं
दुष्टां च ग्रहणीं हरेद्ध्रुवमिदं श्रीसोमनाथाभिधम् ॥ 68 ॥

लोहभेदाः –

मुण्डं तीक्ष्णंच कान्तंच त्रिप्रकारमयः स्मृतम् ।

मुण्डभेदाः –

मृदु कुण्ठं कडारंच त्रिविधं मुण्डमुच्यते ॥ 69 ॥

तीक्ष्णभेदाः –

खरं सारञ्च हृन्नालं तारावटञ्च वाजिरम् ।
काललोहाभिधानञ्च षड्विधं तीक्ष्णमुच्यते ॥ 70 ॥

कान्तभेदाः –

भ्रामकंचुम्बकञ्चैव कर्षकं द्रावकं तथा ।
एवञ्चतुर्विधं कान्तं रोमकान्तञ्च पञ्चमम् ॥ 71 ॥

मुण्डलोहभेदानां स्वरूपम् –

मृदु कुण्ठं कडारं च त्रिविधं मुण्डमुच्यते ।
द्रुतद्रावमविस्फोटं चिक्कणं मृदु तच्छुभम् ॥ 72 ॥
हतं यत्प्रसेरेद्दुःखात्तत्कुण्ठं मध्यमं स्मृतम् ।
यद्धतं भज्यते भंगे कृष्णं स्यात्तत्कडारकम् ॥ 73 ॥

मुण्डलोहगुणाः –

मुण्डं परं मृदुलकं कफवातशूल–
मूलाममेहगदकामलपाण्डुहारि ।
गुल्मामवातजठरार्तिहरं प्रदीपि
शोफापहं रुधिरकृत्खलु कोष्ठशोधि ॥ 74 ॥

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इति श्री वैद्यपतिसिंहगुप्तस्य सूनोर्वाग्भट्टाचार्यस्य कृतौ रसत्नसमुच्चये लोहशोधनमारणादिनिरुपणं नाम पंचमोऽध्यायः ।

# RASA RATNA SAMUCCAYA

## FIFTH CHAPTER

## ENGLISH TRANSLATION

### CLASSIFICATION OF METALS :

In nature there are four *śuddha lohas* (native metals) *viz.*, *suvarṇa* (gold), *rajata* (silver), *tāmra* (copper) and *loha* (iron). In addition there are two *pūtilohas—nāga* (lead) and *vaṅga* (tin) and three *miśra lohas* (alloys) *viz.*, *pittala* (brass), *kāṃsya* (bell metal) and *varta loha* (an alloy made of five metals). The term *loha* is derived from the root *luh* which means *karṣaṇa* (to be extracted). (1)

### SUVARṆA (GOLD) :

*Varieties :*

*Prākṛta* (native), *sahaja* (natural), *vahni sambhūta* (born out of fire/produced by pyrometallurgy), *khani sambhūta* (obtained from a mine) and *rasendra vedha sañjāta* (produced by transmutation through mercury) are the five types of gold. (2)

*Description of different types of suvarṇa (gold) :*

*Prākṛta suvarṇa :*

That which is produced by *rajoguṇa* and which pervades the entire globe (world) is known as *Prākṛta.* It is claimed to be difficult to obtain, even for the gods. (3)

*Sahaja suvarṇa :*

That (the gold) which enveloped Lord Brahmā in the form of a *jarāyu* at the time of his birth and which was converted into a divine mountain (meru parvata) in due course, is known as *sahaja suvarṇa.* (4)

*Vahni sambhūta suvarṇa :*

That which was obtained from the vomited material of god Agni after he swallowed an unbearable essence (semen) of Lord Śiva is *vahni sambhūta suvarṇa.* (5)

These three varieties of gold are claimed to be divine and are said to be accomplished with all the sixteen colours. Mere wearing of these make the body free from senility and mortality. (6)

*Khanija suvarṇa :*

The gold obtained from the mines and/or available as deposits on the mountains is *khanija.* It is said to be accomplished with fourteen colours and its ingestion is claimed to cure all the diseases. (7)

*Rasendra vedhaja suvarṇa :*

The gold produced by the process of mercurial transmutation is known as *rasendra vedhaja.* It is considered to be the best rejuvenating agent *(rasāyana)* and sacred. (8)

*Pharmaco-therapeutic properties of gold :*

Gold grants longevity, wealth, brightness, intelligence and memory. It destroys all the diseases, proves virtuous, prevents invasion of *bhūtas* (bacteria), imparts immense sexual vigour (pleasure), induces happiness and strength. Gold and silver both may cure diseases, prevent old age, destroy *pramehas,* impart strength to debilitated persons, increase grasping power and improve vigour and vitality. (9)

Gold is further claimed to be unctuous *(snigdha),* and brain stimulant *(medhya).* It destroys toxins and the diseases, acts as nourishing (agent) *(bṛṃhaṇa),* is considered best aphrodisiac *(agrya vṛṣya)* and alleviates phthisis *(yakṣmā),* insanity *(unmāda)* and other bodily diseases. Gold also improves retention power of mind, intellect, memory and happiness of a person, relieves diseases caused by all the three *doṣas,* stimulates taste/desire to take food, improves digestion, alleviates pain/unhappiness and proves sweet after digestion *madhura vipāka).* (10)

*Necessity of purification and incineration :*

If used internally without being purified and converted to ashes gold destroys happiness, vitality, strength of the body and causes many diseases. Hence it should first be purified and then converted to ashes. (11)

*Suvarṇa śodhana :*

*First method*—Take one *karṣa* of gold leaves, enclose these inside a pair of earthen dishes along with salt and red ochre and apply heat for half *prahara* (1½ hour) in the midst of burning charcoal. By this method gold leaves attain their natural bright colour. (12)

*Second method*—Heated metal (gold leaves) should be dipped, seven times each, in oil *(taila)*, butter milk *(takra)*, cow's urine *(gomūtra)*, acidic liquid *(āraṅāla)* and decoction of *kulattha (kulattha kaṣāya)*, respectively. This is a common method for the purification of the leaves of metals like gold and silver and may be considered preferable. (13)

*General rule of loha māraṇa :*

Killing or incineration of the metals with mercury ash is always considered the best, doing this with the vegetable drugs is claimed to be medium/ordinary, incineration of the metals with sulphur and such drugs is considered inferior while killing of the metals with another anti-metal is claimed to induce bad effects in the product, hence is not at all recommended. (14)

*Suvarṇa mārāṇa :*

*First method*—Takethin foils of gold (piercable by needle) and apply a paste of mercury ash *(pārada bhasma)* made with *luṅgāmbu* over these and heat by *puṭa* system. By application of ten such *puṭas* gold is converted to ashes. (15)

*Second method*—Add equal quantity of mercury ash *(rasa bhasma)* to the molten gold, triturate the same with citrus juice *(luṅgatoya)*, along with cinnabar *(hiṅgula)*. By this method gold becomes converted to ashes of saffron colour within twelve *puṭas*. (16)

*Third method*—Prepare a paste of mercury ash, one quarter part (of gold), with any acidic liquid, apply it to the gold leaves and subject these to heating eight times by *puṭas*. It surely converts gold to ashes. (17)

*Pharmaco-therapeutic properties of suvarṇa bhasma (gold ash) :*

Gold ash *(suvarṇa bhasma)* prepared as above, licked in a dose of two *guñjā* (250 mg) along with *marica* and *ghṛta*, destroys wasting *(kṣaya)*, sluggishness of digestive fire *(agni sadana)*, dyspnoea *(śvāsa)*, cough *(kāsa)* and loss of palate *(aruci)* in human beings. It augments vital force/energy *(ojas)*, and body tissues *(dhātus)*, gives strength to the body, and destroys anaemias *(pāṇḍu roga)*. It is further claimed to be beneficial to the body *(pathya)*, antitoxic *(viṣaghna)* and specially destroys animal poisons *(garaviṣa)* and sprue of bad prognosis *(duṣṭa grahaṇī)* diseases. (18)

*Suvarṇa doṣas :*

If used internally without being purified and converted to ashes, gold diminishes the strength and vigour of body, provokes many diseases, always causes unhappiness in the body and may even prove fatal. (19)

*Suvarṇa druti (liquefaction of gold) :*

*First method*—Gold can be transformed into the liquid state and maintained in the same state for long time by giving a *pratīvāpa* of the bones, the fat of frog, borax, the saliva of horse and *indragopa*. (20)

*Second method*—Powdered *indragopa*, macerated with *devadālīphala drava*, makes *hema* (gold) to liquefy like water when mixed with it. (21)

RAJATA (SILVER) :

*Varieties :*

*Sahaja* (natural), *khani sañjāta* (obtained from mine) and *kṛtrima* (artificial) are the three varieties of silver. A preceding one is relatively better in qualities than the succeeding one. (22)

*Description of each variety :*

*Sahaja rajata*—Silver obtained from the kailāśa group of mountains is *sahaja* (native). Mere touch of this is considered sufficient to destroy the diseases in human beings. (23)

*Khanija rajata*—Silver obtained from the mines of the Himālaya group of mountains is known as *khanija*. It is considered the best rejuvenating agent *(rasāyana)*. (24)

*Kṛtrima rajata*—Tin applied to *Śri Rāmapādukā* and transformed into silver is known as *pādarūpya*. It is *kṛtrima* (artificial) and is claimed to cure all the diseases. (25)

*Qualities of superior silver :*

The silver which is compact, heavy, clear, bright, soft, *śaṅkha*-like in colour, smooth, free from fissures, and white on cutting and heating is considered to be of superior quality. (26)

*Qualities of Inferior Silver :*

The silver exhibiting red, yellow or black colours on heating, rough, full of

fissure, light, thick, and hard to touch is said to be of inferior quality and is not recommended for use. (27)

*Pharmaco-therapeutic properties of silver :*

Silver is sweet *(madhura)* and astringent *(kaṣāya)* in taste *(rasa)*, sweet *(madhura)* in digestion *(vipāka)*, cool *(śīta)* in potency *(vīrya)*, unctuous *(sara* and *snigdha)* in properties *(guṇas)* and very much anti-obese *(paramalekhana*, strengthening *(balya)*, checks ageing process *(sthira vayaskara)*, brain tonic *(medhya)* and stimulating digestive fire *(jaṭharāgni dīpana)* in actions *(karmas)*. As regards its action on *doṣas* it destroys *vāta kapha* diseases *(vāta kapha hara)*. (28)

Silver is further claimed to be cool in potency *(śīta vīrya)*, sour and astringent in taste *(kaṣāyāmlarasa)*, light *(laghu)*, unctuous *(snigdha)* and remover of *vāta (vātahara)*. If used by the *rasāyana* method it destroys all the diseases. (29)

*Bad effects of unpurified and unincinerated silver :*

Silver which is not purified and killed (converted to ashes) perfectly diminishes longevity, vigour and strength of individuals. It may also cause burning sensation *(tāpa)*, constipation *(malabandha)* and many other diseases. Hence the learned scholars recommended its purification and incineration prior to its internal use. (30)

*Rajata śodhana :*

*First method*—Add *nāga* (lead) and *taṅkaṇa* (borax) to molten silver in a crucible and immerse the whole in *jyotiṣmatī taila*. Repeat the process three times and the silver gets purified. (31)

*Second method*—Make a lining *(pālikā)* with ash and lime on the inner side of an earthen dish. Keep silver in it with equal quantity of lead and blow it on fire repeatedly till the entire lead gets lost. By this method silver becomes purified and can be used in *rasādi* preparations. (32,33)

*Rajata māraṇa :*

*First method*—Anoint silver sheets/leaves with a paste made of mercury ash and *lakuca drava*. Place the sheets in between sulphur in a *mūṣā* and close the same. Apply strong heat through *valūkā yantra* (sandbath) for one day. After self cooling collect the *piṣṭi* and grind it with *tālaka* and any *amla drava*. Heating twelve times by *puṭa* system. By this method *rajata* gets converted to ashes. (34,35)

*Second method*—Apply the paste of *mākṣika* powder prepared with *luṅgāmla*,

on silver sheets and subject them to mild heating by *puṭa* system thirty times. By this method also *rajata* gets converted to ashes. (36)

*Third method*—Apply a paste made of *snuhīkṣīra* and *mākṣīka* on silver sheets. Subject the sheets to heating by *puṭa* system till the *niruttha bhasma* is prepared. (37)

*Fourth method*—One part of the paste of *tālaka* prepared with *jambīra drava* is applied on four parts of silver sheets/foils. The same sheets are put in an *andha yantra (mūṣā)* and subjected to heating by *puṭa* system using thirty *upalas* (dung-cakes). Fourteen such heatings definitely convert *rajata* into *niruttha bhasma.* (38,39)

*Rajata rasāyanas :*

Pure silver converted to ashes is mixed with equal quantities of *abhraka bhasma* (mica ashes) and *tāmra bhasma* (copper ashes) and with *trikaṭu* and *triphalā cūrṇa* in quantity equal to the sum of the above *bhasmas.* This is (further) mixed well with honey and ghee. Licking of the above recipe every morning cures severe phthisis *(yakṣmā),* anaemia *(pāṇḍu),* abdominal diseases *(udara),* piles *(arśas),* asthma *(śvāsa),* cough *(kāsa),* and eye diseases *(nayana ruja).* It also cures innumerable diseases produced by pitta doṣa *(pitta rogas).* (40)

*Raupya druti* (liquefaction of silver) :

*Devadālī* powder should be subjected to *bhābhā* with man's urine seven times. The sprinkling of this powder into molten gold and silver makes their *druti* (stable liquefaction) possible. (41)

## TĀMRA (COPPER)

*Varieties :*

*Mleccha* and *nepālaka* are the two varieties of *tāmra,* (copper), out of which the *nepālaka* is considered the better. The copper obtained from the mines other than those of Nepal is known as *mleccha.* (42)

*Qualities of mleccha tāmra :*

The copper with white, black and red shades, very hard and remaining black even after repeated washing is considered the *mleccha tāmraka.* (43)

*Qualities of nepāla tāmra :*

The copper which is very brilliant, soft, red, resistant to strong hammering,

heavy, not producing bad effects and possessing all the best qualities/properties is considered the *nepāla tāmra.* (44)

*Characteristics of inferior tāmra :*

That which is pale and blackish red in colour, light, possesses rough surface, fissures, and layers is inferior and is not considered suitable for being used in *rasa karmas.* (45)

*Pharmaco-therapeutic properties of tāmra :*

Copper *(tāmra)* is bitter *(tikta)* and astringent *(kaṣāya)* in taste *(rasa),* sweet after digestion *(madhura* in *vipāka)* and hot in potency *(Uṣṇa* in *vīrya).* It is associated with sour taste *(amla rasa)* also. It destroys *pitta* and *kapha doṣas.* It is indicated in pain in abdomen *(jaṭhara ruk),* leprosy *(kuṣṭha),* symptoms of indigestion *(āma doṣa)* and worms *(kṛmiroga).* It causes vomiting and purging both and thus cleans the body from both upper and lower passages. It is further claimed to remove poisonous effect *(viṣa),* liver disorders *(yakṛt)* and obesity *(sthaulya).* It improves appetite and proves good for piles *(arśas),* wasting disease *(kṣaya)* and anaemia *(pāṇḍu roga).* It is good for eyes *(netra)* and is claimed to be the best emaciating/anti-obese agent *(lekhana).* (46)

*Aśuddha tāmra doṣas (Ill effects of unpurified copper) :*

Copper *(tāmra)* not subjected to *śodhana* treatment proves destructive to life, complexion/beauty, vigour and strength of the body if taken internally. It induces vomiting, unconsciousness *(mūrcchā),* vertigo *(bhrama),* nausea *(utkleda),* leprotic skin lesions *(kuṣṭha)* and abdominal pain *(śula).* (47)

Tendency to vomit/excessive salivation *(utkleda),* severe purging *(bheda),* vertigo *(bhrama),* burning sensation *(dāha)* and coma *(moha)* are claimed to be the bad effects of *tāmra* (copper). By *śodhana* treatment, *tāmra* is made free from these bad effects and becomes equal to nectar in *rasa, vīrya* and *vipāka.* (48)

*Tāmra śodhana :*

*First method*— Melt *tāmra patras* (copper foils) in presence of *kṣāra* and *amla.* Add *gairika* to it and pour the whole into butter milk and dung-juice of buffalo, seven times in each liquid. By doing so *tāmra* gets rid of the above five *doṣas* (bad effects) and becomes suitable for further processing, *i.e. bhasmī-karaṇa.* (49)

*Second method*—Well cleaned leaves of copper should be anointed with *saindhava lavaṇa* (rock salt) mixed with lemon juice. These then be heated

strongly and dipped in *sauvīraka* (acidic liquid). This process is repeated eight times to make *tāmra* purified. (50)

*Third method*—Anoint copper leaves with *nimbū-saindhava* paste, heat strongly and dip in *nirguṇḍī* juice eight times. By this method also *tāmra patras* get purified. (51)

*Fourth method*—Boil the leaves of copper in cow's urine for one *yāma* on strong heat. By doing so *tāmra* definitely gets purified. Now the *māraṇa* process of *tāmra* is being described. (52)

*Tāmra māraṇa :*

*First method*—Leaves of copper, anointed with a paste of mercury, sulphur and lemon juice, are subjected to heat treatment three times by *puṭa* system. This converts copper into ashes. (53)

*Second method*—Further, copper converted to ashes as above should be ground with any acidic liquids and made into a ball. It (the ball) should be put inside the *sūraṇa kanda*, wrapped in a cloth and smeared all around with mud. After drying it is heated by *gaja puṭa*. *Tāmra bhasma* so prepared would be free from all the *doṣas*. It will never produce *vānti* (nausea), *bhrānti* (vertigo) and *vireka* (purging) on internal use. (54,55)

*Third method*—Fine copper leaves should be put in a pot along with equal part of mercury and two parts of sulphur after boiling these in *gomūtra* (cow's utine) for five *yāmas*. Now the paste of *amla parṇī* is placed all around the copper leaves, the pot is closed and heat is applied for one *yāma* (3 hours). By this method also copper gets converted to ashes suitable to be used for medicinal purposes. (56-58)

*Fourth method*—Grind two parts of copper leaves with one part of mercury in the juice of aloe. Add sulphur equal to mercury and grind well. Keep it (the mixture) inside a pot, cover the material with an earthen lid, fill the remaining part of the pot with *lavaṇa*, close its mouth with another earthen lid and apply fire for four *yāmas*.

Copper so treated should be powdered and used in one *vala* (dose) (about 350 mg) along with *pippalī (Piper longum)* and *madhu* (honey) for all the diseases. It is specially indicated for *śvāsa, kāsa, kṣaya, pāṇḍu, agnimāndya, arocaka, gulma, plīhā, yakṛt, mūrcchā* and *śūla*, and for improving digestion. It can definitely cure the diseases caused by the vitiation of all the three *doṣas*. If used with suitable *anupānas* (vehicles) recommended for, it cures *dhātugata jvara* (fever of chronic nature). This *tāmra bhasma* is considered equally good for *rasakarmas* and *rasāyana karmas*, if used in suitable doses. (59-64)

*Somanāthītāmra nirmāṇam*—Mix mercury and sulphur in equal parts, and

*tālaka* (half part) and *śilā* (quarter part), ground all well to make a fine paste *(kajjalī)*. Place this paste *(kajjalī)* and copper foils *(tāmrapatras)* alternately in the *garbha yantra* to be described in the chapter on *yantras*. Apply heat for one *yāma* (three hours) and on self cooling take out the mixture and powder it. (65-67)

This *tāmra bhasma* administered in a dose of two *guñjā* (250 mg) along with suitable *anupānas* (vehicles) cures duodenal ulcer *(pariṇāma śūla)*, abdominal colic *(udara śūla)*, anaemia *(pāṇḍu)*, fever *(jvara)*, gaseous trouble *(gulma)*, enlarged spleen *(plīhā)*, enlarged liver *(yakṛt)*, wasting *(kṣaya)*, sluggish digestive fire *(agnisadana)*, polyurea *(meha)* and piles *(mūla roga)*.

This bhasma is called *Śrī Somanātha Tāmrabhasma* which definitely cures sprue syndrome of bad prognosis *(duṣṭa grahaṇī)*. (65-68)

## LOHA (IRON)

*Varieties :*

*Muṇḍa, tīkṣṇa* and *kānta* are the three main varieties of iron.

*Sub-varieties :*

*Mṛdu, kuṇṭha* and *kaḍāra* are the three sub-varieties of *muṇḍa* loha.

*Khara, sāra, hṛnnāla, tārāvaṭṭa, vājira* and *kāla-loha* are the six sub-varieties of *tīkṣṇa loha*.

*Bhrāmaka, cumbaka, karṣaka, drāvaka* and *romaka* are the five sub-varieties of *kānta loha*. (69-71)

*Muṇḍa loha :*

*Varieties :*

*Mṛdu muṇḍa loha*—That which melts quickly, does not contain fissures and has a smooth surface is considered as *mṛdu muṇḍa loha*. It is the best of all the three varieties of *muṇḍa*. (72)

*Kuṇṭha muṇḍa loha*—That which expands with great difficulty on hammering is known as *kuṇṭha muṇḍa loha*. It is considered medium.

*Kaḍāra muṇḍa loha*—That which breaks on hammering and looks black is *kaḍāra muṇḍa loha*. (73)

*Pharmaco-therapeutic properties of muṇḍa loha :*

In comparison to other varieties *mṛdu muṇḍa loha* is soft. It destroys *kapha*,

*vāta, śūla, mūla roga, āma doṣa, meha, kāmalā* and *pāṇḍu*. It also cures *gulma, āmavāta, udaraśūla* and *śopha*. It is stomachic, increases *rakta dhātu* (blood) and cleans the *koṣṭha/mahāsrotas*. (74)

*Ill effects of aśuddha (unpurified) loha :*

Aśuddha loha is not recommended for internal use as it definitely destroys *āyu, bala* and *kānti*. It also causes pain in cardiac region, sickness, and pain in the body. Hence it should be subjected to *māraṇa* after proper purification. (75)

*Tīkṣṇa loha*

*Varieties :*

*Khara loha*—That which is hard, without *pogaras* (free from fibres), breaks on bending, and shines like mercury on fracture, is *khara tīkṣṇa loha*. (77)

*Sāra loha*—That whose edges can be destroyed quickly and easily, which looks fibrous and which is obtained from the pale earth is *sāra tīkṣṇa loha*. (78)

*Hṛnnāla loha*—That which looks whitish black, contains *pogaras* (fibrous structure) like that of *cañcu bīja* and is hard to be pierced is known as *hṛnnāla tīkṣṇa loha*. (79)

*Pogara*—*Aṅga, chāyā* and *vaṅga* are the three synonyms of *pogara*. The structure of iron which looks like hair follicles and which is brittle is known as *pogara*. (80)

*Vājira loha*—That which is full of hard *pogaras*, contains dense and fine band-like structures and looks bluish black in colour is known as *vājira tīkṣṇa loha*. (81)

*Kālāyasa*—That which is bluish black in colour, dense, smooth, heavy and bright in appearance and whose sharpened edges do not get spoiled even by hammering with iron articles is *kālāyasa tīkṣṇa loha*. Each of these varieties, starting from *khara loha* (and going upto *kālāyasa*) is one hundred times better than the subsequent one in properties. (82,83)

*Pharmaco-therapeutic properties of khara loha :*

Khara loha is rough *(rūkṣa)* in *guṇa*, sweet *(madhura)* in *vipāka*, cool *(hima)* in *vīrya*, bitter *(tikta)* in *rasa* and hot *(uṣṇa)* in *guṇa*. It destroys *kapha* and *pitta doṣas*, skin lesions *(kuṣṭha)*, acute abdomen *(jaṭhara rogas)*, spleenic enlargement *(plīhā roga), āma doṣa* and anaemia *(pāṇḍu roga)*. It immediately cures pain

*(śūla)*, liver diseases *(yakṛt roga)*, wasting *(kṣaya)*, senility *(jarā)*, polyurea *(meha)*, and rheumatic diseases *(āmavāta)*. It is stomachic and the best *rasāyana* (rejuvenator). It gives strength to the body and removes piles *(arśas)* and burning *(dāha)*. (84)

*Kānta Loha*

*Varieties :*

*Bhrāmaka, cumbaka, karṣaka, drāvaka* and *romaka* are the five varieties of *kānta loha*. *Kānta loha* is also divided in the following types *i.e. ekamukha, dvimukha, trimukha, caturmukha, pañcamukha* and *sarvatomukha*. On the basis of colour each one is further subdivided into yellow, black and red varieties, which represent the three gods Brahma, Viṣṇu and Maheśvara, respectively. The yellow type is claimed as *sparśa vedhī* (capable of transforming lower metals into higher metals by mere touch). The black type is best for *rasāyana* while the red variety is best for *rasa bandha* (mercury binding purposes). In the first classification, *bhrāmaka* is inferior, *cumbaka* is medium, *karṣaka* is good and *drāvaka* is the best of all. (85-89)

*Properties and uses of different varieties of Kānta loha :*

That which produces movement in all types of iron articles, is known as *bhrāmaka* type of *kānta loha* (magnetic iron), that which kisses/adheres to iron pieces is known as *cumbaka* type of magnetic iron, that which attracts iron articles is known as *karṣaka* type, while that which forcibly attracts iron substances is known as *drāvaka* type of magnetic iron. *Romaka kānta loha* is that which gives rise to hair-follicle-like structures on coming in contact with iron articles. The *kānta loha* (magnetic iron) which shows four or five magnetic surfaces on breaking is considered good while that which is magnetic from all sides is the best. *Bhrāmaka* and *cumbaka* are recommended for alleviation of diseases, while *karṣaka* and *drāvaka* are recommended for *rasa* and *rasāyana* purposes. *Kānta loha* is claimed to be an *aṅkuśa* (hook/restrainer) for mercury which is very virulent (highly mobile and thermolabile) like a mad elephant. Wise men should collect *kānta loha* from its known sources of origin. As magnetic iron exposed to atmosphere/air and sun rays has been considered devoid of its natural qualities, it should be discarded without any consideration. (90-94)

*Qualities of the best kānta loha :*

*Kānta loha* vessel will not allow oil drops to spread on water. It makes the *hiṅgu* paste lose its smell on anointing on to it and makes the *nimba* paste lose its bitter taste on application, does not allow boiling milk to spill out of it rather

makes it to attain *śikharākāra* (tower like shape). As per the text, these are the qualities of the vessel made of best quality *kānta loha.* (95)

*Pharmaco-therapeutic properties of kānta loha :*

*Kānta loha* is claimed as the superior most *rasāyana* which prolongs life span of the healthy persons. It is unctuous *(snigdha)* in property and destroys polyurea *(meha),* pacifies three doṣas, cures painful condition *(śula), Āma doṣa, mūla* piles *(arśas),* gaseous troubles *gulma),* spleen and liver disorders *(plīhā* and *yakṛta),* and wasting diseases *(kṣaya roga).* It also cures anaemia *(pāṇḍu)* and acute abdomen *(udara roga).* It is bitter *(tikta)* in *rasa,* hot *(uṣṇa)* in *guṇa* and cool *(hima)* in *vīrya.* And what not, with other compounds it can cure all the diseases. (96)

*General procedure for preparation of lohakalpas :*

Amongst all the *ausadha kalpas* the *loha kalpas* are considered the best. Hence all efforts should be made to kill (to incinerate) the purified loah. (97)

*Loha māraṇa procedure :*

Iron should be subjected to heating neither in less than five *palas* quantity nor in more than thirteen *palas* quantity. The actual procedure should be preceeded by the chanting of *mantras* (hymns). The *mantra* is said to be as follows : "*Om amṛtodbhavāya svāhā*". With this *mantra lohamāraṇa* should be done.

The subsequent types of *lohas* are many times better than the preceeding types. In this order *kānta loha* is supposed to possess properties one crore times better than those of the others, hence it is considered the best. (98-100)

*Loha śodhana :*

*First method*—*Muṇḍa* and other *lohas* anointed with the blood of rabbit and subjected to heating three times loses all the *doṣas* (impurities). (101)

*Second method*—Boil sixteen *palas* of *triphalā* in eight times water and reduce it to a quarter. Use this decoction for pouring upon five *palas* of hot iron foils seven times. By this method the impurities of *lohas,* obtained from the *giris* (mountains), will be removed. (102-103)

*Third method*—Iron anointed with common salt should be heated and dipped in *triphalā kvātha* to destroy its *giri doṣa* definitely. (104)

*Fourth method*—The decoction of *ciñcā patra* and *jala (netrabālā)* prepared

with water, or the decoction of *triphalā* prepared with *gomūtra* destroys the impurities of iron. (105)

*Loha māraṇa :*

*First method*—Iron scrap/powder (similar to sand) mixed with ghee should be roasted in an iron pan with stirring with a long iron spatula ; the process is continued till a piece of grass put on the vessel starts burning. On cooling, it is ground well and the process is repeated five times. Then this iron should be ground well with *dhātrīphala rasa* or *triphalā kvātha* and subjected to *puṭa pāka* (heating by *puṭa* system) four times. By this process iron definitely becomes *vāritara* (floatable on water surface). (106-107)

*Second method*—Fine powder of iron mixed with ghee should be boiled in *gomūtra, haridrā* juice and *dhātrī* juice separately for seven times. Iron treated above can be used for all diseases. (108)

*Third method*—Fine foils of *tīkṣṇa loha* made red hot in strong heat should be dipped in cold water filled in a stone mortar. The bigger particles are to be separated and closed in between a pair of *malla* (two bowl shaped earthen vessels). The iron foils so heated and dipped in water should be crushed to powder. It is then mixed with mercury and sulphur and subjected to heating by *puṭa* system twenty times. During each *puṭa*, forceful grinding should be done. Iron so converted to ashes can be used in appropriate diseases. (109-112)

*Fourth method*—Grind finely powdered *hiṅgula* well with women's milk in five *pala* quantity. Anoint this paste on five *palas* of iron foils. Close the pasted iron foils in *śarāva sampuṭa* and apply *gajapuṭa* heat. In subsequent *puṭas* add one twentieth part of *hiṅgula (i.e.* 1 tola) to the above quantity iron, grind well with *triphalā kaṣāya, jambīra svarasa* and *āranāla* and repeat heating as above. In the end it (iron) should be boiled with the above juices/liquids. By this method *kānta, tīkṣṇa* and *muṇḍa* lohas will definitely be converted to ashes within forty *puṭas*, provided *hiṅgula* is used in each *puṭa*. (113-115)

*Fifth method*—*Tīkṣṇa loha*, processed by the above *māraṇa* method, ground with the juice of *śveta punarnavā* and *āṭarūṣa* and subjected to *puṭapāka* thirty times converts (itself) to red-coloured *bhasma* which may even be confused with *sindūrā* (vermilion). (116)

*Sixth method*—The powder obtained from thin foils of *tīkṣṇa loha* should be ground with *triphalā jala* and boiled rice and made into round pellets. After drying, five *puṭas* are applied carefully. This *bhasma* is of red colour and may be used wherever desired. (117-118)

*Seventh method*—Grind well *matsyākṣī, gandhaka, hiṅgula* and the juice of lemon to make a paste. Apply this paste on the thin foils of iron. Apply the paste of *matsyākṣī* again. Subject it to heating in a furnace with the help of two

blowers till the release of *triśūlī*. Then remove it from the fire and dip it in the decoction of *triphalā* and *gomūtra*. Remove the water and hammer the iron to fine powder. Repeat the process. This powdered iron, mixed with *gandhaka*, *guḍa* and *triphalā* should be subjected to *puṭa* heating thirty times to obtain its *niruttha bhasma*. (119-122)

*Eighth method*—Grind equal parts of iron and sulphur with the juice of *kumārī* and subject it to heating by *puṭa* system for some time. By this method iron converts to ashes definitely. (123)

*Ninth method*—Dipping heated iron several times into *hiṅgula* associated with lemon juice makes it converted to ashes without any doubt. (124)

*Tenth method*—Prepare *triphalā kvātha* with *gomūtra*. Subject thin foils of iron to *bhāvanā* (maceration) with this *kvātha* for three weeks and then grind them well for one day with the above *kvātha* and apply *gajapuṭa* heating. Repeat the grinding with the same decoction for one more day. *Mardana* (grinding) should be done in the day time and *puṭa* should be applied during night. Within twenty one *puṭas* all the three types of *lohas* will be rendered to ashes. (125-126)

*Eleventh method*—If water kept in an iron vessel made of *kānta loha* does not allow oil drop to spread and if it (the *kānta loha*) can fuse with silver, then this *kānta loha* is considered the best of all the iron varieties. Thin foils of this *kānta loha* made red hot and dipped repeatedly into *triphalā kaṣāya* become purified. *Kānta loha* or any other *loha* so purified should be ground with some acidic liquid. It shall then be anointed with 1/4th part *pāradā bhasma* or with a mixture of *tāpya*, *godugdha* and *pārada*, taken in equal proportion, and heated by *puṭa* fire. Then treat it again with *bhāvanā* of *śaśa rakta* (rabbit blood). Finally anoint it with *kṣāra* and *amla* and heat it with *puṭa* system. By this method *kānta loha* converts itself into *bhasma* form which is free from all the *doṣas*. (127-130)

*Twelfth method*—Prepare a *kajjalī* from one part of *śuddha pārada* and two parts of *śuddha gandhaka*. Take iron equal to the *kajjalī* and grind both with *kumārī svarasa* for six hours and prepare a ball. Cover this ball with *eraṇḍa* leaves and keep it in a *kāṃsya pātra* placed in sun rays. Within one and half hour the ball gets heated. Then keep it inside a heap of paddy for three days. Now take out the ball, powder it and sieve it through a thin cloth. By this method a *vāritara* (floatable on water surface) *loha bhasma* is prepared. In this way *kānta*, *tīkṣna* and *muṇḍa lohas* will surely be converted into *niruttha bhasma*. This method is also applicable for other metals like gold (*i.e.* it can convert all the metals into ashes). This is known as *Siddhayoga* because it is mentioned by *Siddhas*. This was found true in the experience of the author also. It (this *bhasma*) is claimed to cure all the diseases and to prevent senility. It can be used along with *triphalā* and *madhu* in all the diseases. (131-135)

*Properties of lohabhasma :*

*Kānta loha* helps in improving body complexion. It uproots *pāṇḍu roga*, destroys *yakṣmā* (phthisis), acts as an antidote for *viṣas* and removes *tridoṣas*. This metal also destroys all types of *kuṣṭhas* (skin lesions). It gives strength to the body. It is *vṛṣya* (aphrodisiac), keeps the ageing process static, destroys diseases, is considered as the best *rasāyana* (rejuvenator) and acts like a nectar on earth without match. (136)

Iron converted to irreversible ashes becomes like a divine nectar. It is also called the *siddha rasāyana*. When mixed with *trikaṭu, viḍaṅga, ghṛta* and *madhu* in the dose of one *niṣka* (about 3 gm) it destroys *jarā* (old age/ageing), *maraṇa* (death/mortality) and *vyādhis* (diseases) and grants healthy male offspring. This is prescribed in earlier times by Śrī Girīśa for granting the birth of *kāla yavana* to his father. (137)

*Loha bhasma* prepared from *kānta* and other varieties of iron destroys *jantu vikāra* (worms manifestation), *pāṇḍu, vātakṣya, pittāmaya, sthaulya* (obesity), *arśas* (piles), *grahaṇī* (sprue syndrome), *jvara* (fever), *kapha roga, sopha* (oedema), *prameha* (polyurea), *gulma* (gaseous trouble) and *plīhā* (enlarged spleen). It is an antidote for *viṣa* (poisons) and removes its effects. It generates strength, removes *kuṣṭha*, (skin lesions) and *agnimāndya* (sluggish digestion), causes immense happiness. It is a specific (very powerful) *rasāyana* and prevents death. The properties of *kiṭṭa (maṇḍūra)* are also similar to *kānta etc.*, lohas. (138).

Metals converted to ashes become similar to *rasa (āhāra rasa)* and destroy severe diseases on internal use. A strong body can be achieved by their continuous use and prevention of *rukjanma* (onset of diseases) and *jarā* (senility) is possible by their use. (139)

*Kānta loha* similar to the colour of ripe *jambū phala* (fruit of *Eugenia jambolana)* is considered the best. (140)

*Loha drāvaṇa :*

*First method*—The ash of *kośātakī* should be subjected to *bhāvanā* (maceration) with *gomūtra* twenty one times and dried. *Tīkṣṇa loha* heated in a crucible in association with the above powder gets liquefied. (141)

*Second method*—*Devadālī* is burnt to ashes, (the ash) is macerated in *gomūtra* twenty one times and dried. *Tīkṣṇa loha* gets converted into water like liquid when heated in a *mūṣā* (crucible) along with this powder. (142)

*Third method*—Mix the ash of *devadālī* with human urine, strain it twenty one times and obtain a *kṣāra* from it. This *kṣāra* converts *kānta loha* into stable liquid state when added to it. (143)

*Fourth method*—Prepare a powder of sulphur and magnetic iron taken in equal quantity. Addition of this powder to molten metals converts all the eight metals into liquefied state. (144)

*Fifth method*—Sulphur macerated with the juice of *devadālī* for seven days converts *loha* powder into liquefied state, similar to mercury when added to it. (145)

*Ill effects of taking unpurified (aśuddha) iron—(aśuddha loha sevana) :*

*Aśuddha loha* (unpurified iron) is not good for internal use. It definitely destroys *āyu* (longevity), *bala* (strength) and *kānti* (charm). It induces pain in the cardiac region, causes weakness and the diseases of the body. Hence, it should be subjected to *śodhana* and *māraṇa* first. (146)

*Relative qualities of lohas :*

*Muṇḍa* loha (cast or pig iron) is ten times better than *loha kiṭṭa* (rusted iron), *tīkṣṇa loha* (steel) is one hundred times better than *muṇḍa* loha while *kānta loha* (magnetic iron) is one lac times better than *tīkṣṇa loha* in properties on ingestion. So *kānta loha* should always be taken to destroy *jarā* and *mṛtyu* in human beings. Further, *kānta loha* grants long life, gives strength and virulity, destroys all the diseases and improves sexual potency. There is no better *rasāyana* drug than the iron for all living beings. (147-149)

*Maṇḍūra* (Rusted iron) :

*Method of processing :*

*Loha kiṭṭa* should be heated on charcoals obtained from *vibhītakī* (*Terminalia belerice* Roxb.) wood and dipped in *gomūtra*, filled in a vessel made of *vibhītakī* wood, repeatedly for seven times. This is known as prepared *maṇḍūra*. Its fine powder should be used.

Prepare a *kvātha* of *triphalā* with *gomūtra*. Apply strong heat to *loha kiṭṭa* and dip it in the above *kvātha* slowly. Continue the process till it is converted to powder completely. The powder of *maṇḍūra*, ground well, is considered ready for use. (150.151)

The properties attributed to the ash of *muṇḍa loha* are also found present in *muṇḍa kiṭṭa*. Hence *maṇḍūra* can also be used in all places where *muṇḍa loha* is indicated for removing/curing the diseases. (152)

## VAṄGA (TIN)

*Varieties :*

*Khuraka* and *miśraka* are the two types of *vaṅga*. Of the two *khuraka* is better in properties, while *miśraka* is considered inferior. (153)

*Physical properties :*

Whiteness, softness, brilliancy, quick melting, heaviness and devoid of cracking sound (tin-cry) are the qualities of *khura vaṅga* while *miśraka* is claimed to be blackish white in colour.(154)

*Pharmaco-therapeutic properties of vaṅga :*

*Vaṅga* is bitter *(tikta)* in taste *(rasa)*, hot *(uṣṇa)* and rough *(rūkṣa)* in properties *(guṇa)*, causes slight *vātakopana* and destroys *meha, śleṣma roga, meda* and *kṛmirogas.* (155)

*Vaṅga śodhana :*

*First method*—Pour/quench molten metal (tin) mixed with *haridrā* powder into *nirguṇḍi (Vitex nagundo* Linn.) juice. By repeating the process three times, *khura vaṅga* gets purified. This is beyond any doubt. (156)

*Second method*—The second variety of *vaṅga* is purified by pouring it in sour butter milk, mixed with *punarnavā* and *kucalā* or in *kaṭaphala kaṣāya.* (157)

*Third method*—*Nāga, vaṅga, kāmsya* and *tāmra* are purified by sprinkling *nirguṇḍī svarasa* mixed with *nirguṇḍīmūla cūrṇa* seven times on heated metal in sun-shine. (158)

*Vaṅga māraṇa :*

*First method*—Anoint tin foils with a paste of *tālaka* (orpiment) prpared in *arkadugdha*, place them (the foils) in the *kṣāra* of *bodhi* and *ciñcā tvak* and apply *laghu puṭa* heating. In the end grind it well and use the *bhasma* for preparing *rasādi yogas.* (159)

*Second method*—Melt tin metal in a *kharpara* (earthen dish), add one sixteenth part mercury and rub the same with *vana kārpāsa* wood adding *tālaka* little by little. The *bhasma* so prepared becomes useful for *rasādi yogas.* (160)

*Third method*—Anoint tin foils with *tālaka* pasted with *palāśa drava* and apply *puṭa* heating. By this method *vaṅga* is converted to ashes without any doubt. (161)

*Fourth method*— *Vaṅga* anointed with *bhallata taila* and covered with cloth, subjected to heating by *ciñcā, pippalī* and *palāśa* wood fire, converts to ashes. (162)

*Vaṅga rasāyana :*

Take *vaṅga bhasma, kānta loha bhasma* and *abhraka bhasma* in equal quantities. Grind them well with *dhattūra svarasa* and the juice of *nimbu patra.* Then apply one *bhāvanā* with *dāḍima* juice and *mayūra māṃsa rasa.* Add the ash of *rājāvarta* to it in equal quantity and triturate well with *gomūtra* and *śilājatu jala.* Further grind it with *guggulu* water also for eight days. In the end powder it after drying and mix it with equal part of *nākulī bīja cūrṇa* pasted with the juice of *bandhūka puṣpa.* Preserve the same in a bottle after seiving through a fine cloth. This can be ingested along with *rajanī cūrṇa* treated with cow's butter milk in the dose of four *vallas* (approx. 1½ gm). This is a wonderful compound known às *Vaṅga Rasāyana,* which definitely destroys all the twenty types of *prameha.* (163-168)

*Śāli, mudga, sūpa, navanīta, taila, paṭola, tiktatuṇḍīra* and *takra* are recommended as *pathyas* (recommended food) during the course of this theraphy (preparation). (169)

## NĀGA/ŚĪŚA (LEAD)

*Physical properties of lead :*

The superior variety of lead should be heavy, externally black, produce foul smell, melt quickly and on fracture should appear shining black. The lead without these properties is impure and not recommended for use. (170)

*Pharmaco-therapeutic properties of Lead :*

*Śiśaka* is very hot *(atiuṣṇa)* in *vīrya,* unctuous *(snigdha)* in *guṇa* and bitter *(tikta)* in *rasa.* It is claimed to destroy *vāta* and *kapha doṣas* and to possess stomachic effect *(dīpana karma).* It is indicated for removing the *toyadoṣa* of *prameha* and also *āmavāta.* (171)

*Nāga śodhana :*

Sprinkle the powder of *nirguṇḍi* root, *reṇuka* seeds and *haridrā* over molten lead and pour the same in *nirguṇḍi svarasa.* Repeat the process three times. So purified *nāga* will not cause bad effects like *mūrcchā, śphota etc.* (172-173)

*Nāga māraṇa :*

*First method*—Place a pot over the oblique furnace with its mouth obliquely tilted. Cover the entire surface of the pot except the mouth carefully with clay. This is known as *bhrāṣṭrayantra.* Place twenty *palas* of lead in this *yantra* and apply strong heat. After melting add one *tola* of purified mercury and rub it. Add *kṣāra* to it in one *pala* quantity obtained from each of the following drugs. The drugs are *arjuna, vibhītaka, mahārājagiri, dāḍima* and *mayūra.* Apply strong heat for twenty one nights, rubbing powerfully with an iron spoon using both hands (to apply much pressure). By this method *nāga bhasma* is prepared either of red colour or of dove colour. This *nāga bhasma* is free from *doṣas* and acts as best *rasāyana* (rejuvenator). (174-179)

*Second method*—Killing and regaining of *śīśa* repeatedly for ten times makes the *māraṇa* of *śīśa* complete and successful. *Śīśa* converted to such ashes is free from all the *doṣas* and is the best *rasāyana* drug. (180)

*Third method*—Take one quarter part of ash of *aśvattha* and *ciñcā tvaka* in the vessel containing *nāga.* Apply heat, rubbing well with a long iron spoon till the complete conversion of the metal into ash. Add equal quantity of *manaḥśilā* to the powdered ash of *nāgā,* grind with *jambira rasa* or *āranāla,* close it in a pair of earthen dish and apply *puṭa* heating. After self cooling, grind it again with one twentieth part of *manaḥśilā* and with any *amla drava* for four hours and subject it to *puṭapāka* as above. Lead heated sixty times in this way by *puṭa* system converts itself into *niruttha bhasma.* (181-183)

*Fourth method*—Anoint the foils of *nāga* with a paste made of *manaḥśilā* and *arkakṣīra* (latex of *Calotropis).* Put it to heating by *puṭa* system to convert it into *niruttha bhasma.* (184)

*Nāga rasāyana :*

Take one part *nāga bhasma* prepared as above, add half part of *suvarṇa mākṣika bhasma* and quarter part each of *tāmra bhasma, vimala bhasma, kānta bhasma, abhrasatva bhasma* and *sphatika bhasma.* Mix all together, apply *triphalā kaṣāya bhāvanā* and heat it by *puṭa* system using thirty forest dung cakes. Repeat the process thirty times. Powder the same (the product) and mix *trikaṭu* and *viḍaṅga cūrṇa* with it in equal amount. Use it in a dose of one *valla* (approx. 360 mg) together with honey and ghee. It cures all the eighty types of *vāta rogas* specially *dhanurvāta,* all *kapha rogas* and all *mūtra rogas.* It is also indicated in *śvāsa, kāsa, kṣaya, pāṇḍu, śopha, śitakajvara, grahaṇī, āmadoṣa* and incurable *agnimāndya.* All the diseases caused by *udaka duṣṭi* are cured by using it with suitable *anupānas.* (185-190)

## PITTALA (BRASS)

*Varieties :*

*Pittala* is of two types, *rītikā* and *kākatuṇḍī.* That which turns into copper-like colour when heated and dipped in *Kāñjika* is *rītikā*, while that which turns black is known as *kākatuṇḍī.* (191-192)

*Properties :*

*Physical properties of superior pittala :*

Heaviness, softness, yellowness, strong, resistibility to hammering (malleable) and brilliancy are the properties of superior *rītī.* (193)

*Physical properties of inferior pittala :*

That which is pale yellow, hard, rough with spots, irresistible to hammering (non-malleable), foul smelling and light in weight is inferior *rītī* and is not considered good for internal use. (194)

*Pharmaco-therapeutic properties of Pittala :*

*Rītī* is *tikta* in *rasa, rūkṣa* in *guṇa*, destroys intestinal worms, *raktapitta* and *kuṣṭha* rogas (skin diseases due to worms in infection). When used with other drugs it becomes *uṣṇa* in *vīrya* otherwise it is *śita* in *vīrya.* (195)

*Kākatuṇḍī* is *tikta* in *rasa, uṣṇa* and non-unctuous in *guṇa*, destroys *kapha* and *pitta doṣas*, cures *yakṛt* and *plīha roga* and is said to be *śītavīrya.* (196)

*Rītī śodhana :*

*Rītī* becomes *śuddha* (purified) by heating and dipping/quenching five times in *nirguṇḍī svarasa* containing *haridrā* powder. (197)

*Rītī mārana :*

Grind *manaḥśilā* and *gandhaka* in *nimbū rasa*, anoint *rītī* with that paste and subject to heating by *puṭa* system. By repeating the process eight times *rītī* is converted to ashes. It can be used for desired purposes. It can also be converted to ashes by the method mentioned for copper and may be used wherever required. (198,199)

*Pittala Rasāyana :*

Take the *bhasma* of *rītī, kānta* and *abhrasatva* in equal quantities. Add *trikaṭu* and *viḍaṅga cūrṇa* in equal amount to the mixture of the above three *bhasmas.* When this compound is taken along with *palāśa bīja, ajamodā, citraka, bhallataka* and *tila* in the dose of four *niṣka* (about 12 gm), it cures worms and skin diseases, particularly *śveta kuṣṭha.* It also causes *dīpana* and *pācana* effects and proves good for health. (200,201)

*Rītika drāvaṇa :*

Feed good coloured *rītika* to a black goat which is young and energetic. Collect the faecal matter of the goat, smear the same on the inside of an earthen vessel and heat. On heating it turns into a beautiful golden liquid resembling the fourteen coloured gold. It is said to be capable of making *deha vedha* and *loha vedha* possible, and useful for *rasa* and *rasāyana karmas.* (202-204)

## GHOSA (KĀṂSYA) (BELL-METAL)

Eight parts of *tāmra* and two parts of *vaṅga,* melted and mixed together, turn into *kāṃsya.* The *kāṃsya* made in Saurāṣṭra was considered good. (205)

*Physical properties of kāṃsya :*

*Kāṃsya* which can produce intense sound, is soft, brilliant, slightly blackish-white in colour, clear and turns red on heating is known as the superior quality *kāṃsya.*

*Kāṃsya* having the following seven characteristics such as yellowishness, copper-like colour on heating, hard, rough, non-malleable, producing feeble sound, and lustreless is considered inferior and should be rejected. (206,207)

*Pharmaco-therapeutic properties of kāṃsya :*

*Kāṃsya* is *laghu* in *guṇa, tikta* in *rasa, uṣṇa* in *vīrya* and *lekhana* (anti-obese) and *dṛk prasādana* (clearer of vision) in *karma.* It removes *kṛmi* and *kuṣṭha rogas,* destroys *vāta* and *pitta doṣas,* is claimed as *dīpana* and promotes health. All other substances except ghee, kept in a *kāṃsya* vessel and ingested, proves good for health, induces happiness and well being and makes the food acceptable to the body. (208,209)

*Kāṃsya śodhana :*

Heating and quenching hot *kāṃsya* in *gomūtra* makes it purified.

*Kāṃsya māraṇa :*

*First method*—*Kāṃsya* mixed with *gandhaka* and *tālaka* and heated five times by *puṭa* system is converted into irreversible ashes *(niruttha bhasma).* (210)

*Second method*—Take three *kṣāras* and five *lavaṇas* together and macerate these seven times with *amla drava.* Anoint the foils of *kāṃsya* or *pittala* with this *kalka,* close them in *śarāva sampuṭa* and apply *gajapuṭa* heating. By this method *kāṃsya* is converted into pure *bhasma.* (211)

VARTALOHA (ALLOY OF FIVE METALS) :

An alloy made of *kāṃsya* (bell metal), *tāmra* (copper), *pittala* (brass), *loha* (iron) and *śīśa* (lead) is known as *vartaloha.* It is also called *pañcaloha* by ancient metallurgists. (212)

*Pharmaco-therapeutic properties of vartaloha :*

*Vartaloha* is *amla* and *kaṭu* in *rasa, hima* and *rūkṣa* in *guṇa.* It antagonizes *kapha* and *pitta doṣas* and is claimed as *rucya, tvacya, kṛmighna, netrya* and *mala viśodhana.* (213)

Except sour substances all food, including ordinary foods and special foods and soups, kept or prepared in the vessel made of *vartaloha* are said to be very appetizing and digestive and also prove good for health. (214)

*Vartaloha śodhana :*

Molten *vartaloha* poured in horse urine gets purified. (215)

*Vartaloha māraṇa :*

*Vartaloha* heated by *puṭa* system with *gandhaka* and *tālaka* gets converted to ashes and the ash can be used in any compounds as desired. (216)

*Effect of rasādi drugs on mercury :*

Mercury becomes capable of giving desired effects only if it is treated with the best quality *rasas, uparasas* and *lohas* which have been processed well by prescribed methods, otherwise not. (217)

The drugs of *mahārasa, ratna* (precious stones) and *loha* (metal) groups along with *varāṭa* (cowrie), *śukti* (marine shell) and other stones of medicinal value including *khura* (hoop) and *śṛṅga* (horn) are considered hard (difficult to interact with mercury) in nature but become suitable only when these are converted to ashes. (218)

## BHŪNĀGA (EARTH WORMS)

The *satva* obtained from *bhūnāga* is considered essential for melting hard substances like diamond and hence it is being described here. Further, it is considered as the best *tejas* (potentiating agent) for *pārada* (mercury) and *vajra* (diamond) both. (219)

*Extraction of bhūnāga satva :*

*First method*—Grind the washings obtained from *bhūnāgas* (earthworms) with the extractive of *bhṛṅgarāja, nimbū* and *nirguṇḍī,* three days in each. It should then be ground with *drāvaka guṇa* drugs and made into *vaṭakas* (round balls). Close them (the balls) in a strong crucible and blow strongly for two *daṇḍas* (48 minutes). After self cooling, place them over a flat stone and crush to fine powder. Collect the granules equal to *rājikā* in size and other small particles similar to sand having some weight. Grind well the remaining material and mix with one twelfth part of *arka* (copper), blown again and wash carefully to collect the granules. By this material the melting of substances like *vajra* may be done if desired. This is known as *khara satva.* It is the best *rasāyana.* It was observed that out of two or three crucibles the *satva* can definitely be obtained from at least one. (220-224)

*Second method*—Collect forty *prasthas* of *bhūnāga* from the soil containing metals like gold, silver, copper, magnetic iron *etc.*, wash these with *haridrā* water and cold water. Feed these to a young peacock or hen kept on fast. Collect their faecal matter, grind them well with *kṣāra* and *amla* and dry them in intense sun heat. Then keep them (the dry powder) in a half earthen pot and heat to convert into *maṣī* (black powder) form. Mix this black powder well with *drāvaṇa varga* drugs and grind well. Close it in a crucible and blow for two *ghaṭis* in a furnace. Collect the hard material from the cooled crucible and grind it. Now wash it and collect the fine granules carefully, blow these again like gold to make big granules. (225-230)

Śrī Soma Deva has said that the *satva* (extract/metal content) obtained from the *bhūnāgas* (earthworms) is considered the best. One quarter part of this *satva* (extract) is added to two *śāṇas* (6 gm) of gold and mixed together, to make a ring. When applied locally, the water obtained after washing the ring acts as an antidote for all types of *sthāvara* and *jaṅgama viṣas.* This water also alleviates *netra ruk* (pain in eye/eye diseases), *śūla* (abdominal pain), *mūlagada* (piles) and *karṇa ruk* (ear-ache) and relieves *prasūtigraha* (obstructed labour) also. (231)

*Taila Pātana (Oil extraction method) :*

*First method*—The roots of *uttara vāruṇī* should be ground well and put in *kāñjika.* The endocarp of *aṅkola bija* should also be ground well with *kāñjika.*

These are mixed together and kept for some time when their oil accumulates in a mass form like ghee, which should be collected as per prescribed manner. (232)

*Second method*—The leaves of *uttara vāruṇī* and *paṭakārī* should be ground well with *kāñjika.* This is then ground with *aṅkola bīja* powder and tied in a fine cloth and hung in intense sun heat placing a *caṣaka* (cup shaped vessels) beneath it to collect the oil drops in the vessel. It destroys *śvitra* roga (white spots of the skin). (234,235)

*Third method*—The powder obtained from *aṅkola bīja* should be ground well with *kāñjika.* This is kept overnight and make into a bolus. It (bolus) is now boiled through *kanduka yantra* for two *ghaṭis.* This bolus is then tied in a strong cloth and the oil is squeezed out with the help of a wooden press. The oil so extracted should be collected in a vessel kept below the bundle and be used whenever required. By this *kanduka yantra* method all the *tailas* can be extracted. (236-238)

*Aṅkola taila* can also be extracted with *kākatuṇḍī mūla.* And the *bākucī* and *devadālī* oils can be extracted with *karkoṭīmūla.* (239)

Oil of *viṣa muṣṭī* can be extracted with *apāmārga kaṣāya,* while the oil from *jayapāla* can be extracted with *kumāri mūla kvātha.* The oil of *bākucī* can also be obtained by using *raktāpāmārga kvātha.* (240,241)

The seeds of black variety of *kākatuṇḍī* should be powdered and mixed with powdered *kāntapāṣāṇa.* These are put together in a closed vessel under a heap of paddy. After fifteen days the oil is extracted from it. (242)

# RASA RATNA SAMUCCAYA

## NOTES ON THE FIFTH CHAPTER

## METALS OF MEDICINAL IMPORTANCE

The fifth chapter of *Rasa Ratna Samuccaya* deals with those *lohas* (metals) which have been recognised for their medicinal values though many metals are found described in the literature since ancient times from the mineralogical point of view.

The metals described in *Rasa Ratna Samuccaya* have been divided in the following three groups on the basis of their form and characters :

| | | | | |
|---|---|---|---|---|
| (A) *Śuddha lohas* | — | 1. *Suvarṇa* | — | Gold |
| | | 2. *Rajata* | — | Silver |
| | | 3. *Tāmra* | — | Copper |
| | | 4. *Loha* | — | Iron |
| (B) *Pūti lohas* | — | 1. *Nāga* | — | Lead |
| | | 2. *Vaṅga* | — | Tin |
| (C) *Miśra lohas* | — | 1. *Pittala* | — | Brass |
| | | 2. *Kāṃsya* | — | Bronze/Bell metal |
| | | 3. *Vara loha* | — | (An alloy of five metals) |

It is evident from this classification that in the first group four such metals have been included which may be found in their pure form in nature. In the second group low melting metals are included while in the third group alloys of metals are included. It is also evident from this classification that during the period of this text (13th/14th cent. A.D.), nine metals including some alloys were recognised for their medicinal properties. Besides the nine *lohas* (metals) *maṇḍūra/lohakiṭṭa* (rusted iron) is also found described in this chapter and advised to be used for its medicinal value.

The term *loha* was being used for metals since ancient times but the meaning of the term is found explained in the fifth chapter of this text only. According to this, the term *loha* is derived from the root *luh* meaning *karṣaṇa*, that is

extraction. Thus, the *lohas* (metals) are those which are obtained from the respective minerals/ores by the method of extraction. While the minerals/ores generally are in compound form and contain some kind of impurities besides their metallic contents, the *lohas* are pure metals free from impurities.

The later periods, that is from the period of *śārṅgadhara saṃhitā* onwards another term *dhātu* is also found being used for the metals. The meaning of the term *dhātu* is *dhāraṇa, i.e.* the metals are known as *dhātus* because they may help in the maintenance of the body or they may sustain the body tissues in a healthy state. Hence the term *dhātu* is also very meaningful, and probably because of this reason (meaningfulness) the term *dhātu* became more popular for the metals and replaced the term *loha* in course of time.

*Origin of lohas :*

According to *Rasa* literature *lohas* are said to have originated from the nine planets and are claimed to please the respective planets from which they have taken their origin. The relationship of the nine metals with the nine planets is shown in Table 1.

TABLE 1

*The nine planets and the correspondig nine metals originated from them*

| | Planet | Metal |
|---|---|---|
| 1. | *Sūrya* (Sun) | *Tāmra* (copper) |
| 2. | *Candra* (Moon) | *Rajata* (silver) |
| 3. | *Maṅgala* (Mars) | *Pittala* (brass) |
| 4. | *Budha* (Mercury) | *Nāga* (lead) |
| 5. | *Guru* (Jupitar) | *Suvarṇa* (gold) |
| 6. | *Śukra* (Venus) | *Vaṅga* (tin) |
| 7. | *Śani* (Saturn) | *Loha* (iron), *Tikṣna* (steel) |
| 8. | *Rāhu* (Dragon's head) | *Kāṃsya* (bronze) |
| 9. | *Ketu* (Dragon's tail) | Varta loha (Alloy of five metals). |

1. Metallic lustre.
2. High specific gravity.
3. Good conductivity of heat and electricity.
4. Malleability.

The *lohas* are also said to have originated from different gods. Thus, *suvarṇa* (gold) is said to have its origin from Agni, *rajata* (silver) from Candramā, *tāmra* (copper) from Sūrya, *vaṅga* (tin) from Indra, *nāga* (lead) from Vāsukī and *loha* (iron) from Yama.

In modern science *lohas/dhātus* are known as metals and should possess the following characteristics/properties :

1. Metallic lustre.
2. High specific gravity.
3. Good conductivity of heat and electricity.
4. Malleability.
5. Specific melting point.
6. Ductility.

The chemical symbol, specific gravity and melting point of the metals used in Āyurvedic *Rasa* literature are given in Table 2.

TABLE 2

*The chemical symbol, specific gravity and melting point of the metals used in Āyurvedic medicine*

| Metal | Chemical symbol | Sp. Gr. | Melting point °C |
|---|---|---|---|
| 1. *Suvarṇa* (gold) | Au | 19.4 | 1062 |
| 2. *Rajata* (silver) | Ag | 10.5 | 960 |
| 3. *Tāmra* (copper) | Cu | 9.7 | 1085 |
| 4. *Loha* (iron) | Fe | 7.7 | 1520 |
| 5. *Nāga* (lead) | Pb | 11.4 | 325 |
| 6. *Vaṅga* (tin) | Sn | 7.28 | 233 |
| 7. *Yaśada* (zinc) | Zn | 7.1 | 410 |

In modern science *miśra lohas* are known as alloys. These are made by the mixing together of two or more metals after melting. A number of alloys are described in modern metallurgy but only three alloys (*miśra lohas*) are found described in ancient Āyurvedic *Rasa* texts. These are :

*Pittala* (2 parts copper, 1 part zinc),

*Kāṃsya* (8 parts copper, 2 parts tin),

*Varta loha (kāṃsya, tāmra, pittala, loha,* and *nāga* in equal parts).

## DESCRIPTION OF EACH METAL

*Suvarṇa (gold) Au :*

*Mythological origin :*

According to ancient texts gold is said to be the semen of god Agni (fire). It is said in *Rasendra Cūḍāmaṇi* that once god Agni saw the young and beautiful wives of the *saptaṛṣis* (the seven sages) and got excited. He discharged his semen which on falling on the earth got converted into gold.

*Varieties*

Five varieties of gold, namely *prākṛta, sahaja, vahni sambhūta, khanija,* and *rasendravedhaja* are mentioned in ancient texts. Out of these the first three varieties are said to be divine, having *śoḍaśavarṇas* (sixteen colours) and are claimed to be rare. Hence in later works only two or three varieties, namely *rasaja, kṣetraja, loha saṅkaraja* or *rasaja,* and *khanija* are found mentioned.

According to modern view also gold is obtained in three forms, native gold, gold minerals/ores, and through transformation.

*Modern description :*

Gold is a soft metal having a hardness of 2.5. It is very heavy, having a specific gravity (sp.gr.) of 19.43. Copper is mixed with it for making it hard and only then could it be used for ornament making purposes. Purity of gold is expressed in terms of carats and the 24 carat gold is considered pure. In the 14 carat one, gold content is approximately 60%. Gold is malleable and ductile and possesses a bright metallic lustre. Its colour varies from grey to yellow. In nature it is found in free state as well as in compound state. It is frequently associated with silver and may contain traces of copper, iron and other metals. The colour of its minerals varies from pink to copper red depending upon the proportion of impurities. Pure gold is bright yellow. In very thin plates or leaves gold is translucent with a blue or green tinge. Its streak is yellow. Melting point is 1062°C. It is a good conductor of electricity and is not acted upon by water and atmosphere, is insoluble in most acids but readily soluble in *aqua regia.* It is distinguished by its softness, malleability and high sp.gr. It is considered a precious metal.

Native gold occurs in quartz veins and in some riverain sand. In quartz veins it occurs in grains/scales. Pyrite is nearly always associated with gold. Its crystals are small, more or less distorted but rarely found. The common form is octahedron, cubic or rhombic. Gold occurs *in situ* and in secondary deposits called placers.

In India gold is found in large quantities in Kolar mines of Mysore and also from Anantapur mines of Tamil Nadu. It is also found in riverain sands in Bihar, Assam and Madhya Pradesh. Outside India, gold is found in Australia, USA, South Africa, Mexico and USSR.

Native gold generally contains varying amounts of silver (40%), iron, copper, bismuth, zinc, lead and tin.

*Physical properties :*

*Superior variety*—The gold which is red on heating, white on cutting, yellow on rubbing over *nikaṣa* (touch stone), heavy, soft, smooth, having shining bright colour, free from scales and contains *śoḍaśavarṇas* (sixteen colours) is considered superior.

*Inferior variety*—The gold which is dull, blackish or grey coloured, rough, hard, thick, light, not malleable and contain scales and other metallic impurities is considered inferior.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | — | *Madhura, kaṣāya, tikta,* and *kaṭu.* |
| *Guṇa* | — | *Śīta, guru, snigdha.* |
| *Vīrya* | — | *Śīta.* |
| *Vipāka* | — | *Madhura.* |
| *Karma* | — | *Vṛṣya, balya, bṛmhaṇa, rasāyana, medhya, matismṛtiprada, netrya, āyuṣya, kāntikara, vāgviśuddhikara, sthiratvakṛt, pavitra, pāpaghna, śivatarakara, paramaviṣaghna, garaviṣahara, sukhakara, lekhana, deha-rogapramāthī, praśamitajara, bhūtāveśā-praṣāntikara, rucya, tvacya, varṇya, puṣṭi-pradāyī, ojavardhana, vayassthairyakara, bhavasukhakara.* |
| *Doṣa prabhāva* | — | *Tridoṣaghna.* |
| *Vyādhi prabhāva* | — | *Viṣagarodbhava roga, āgantuka roga, pāpaja roga, tridoṣaja roga, daivakṛta roga, jarā roga, śoṣa roga, kṣaya, pāṇḍu, vami, aruci, agnimāndya, arśa, jvara, śvāsa, kāsa, yakṣmā, unmāda, prameha, kārśya, duṣṭagrahaṇī, sarpaviṣa.* |

*Processing :*

*Necessity for śodhana (purification) :*

As gold is considered the purest metal amongst all other metals used for medicinal purposes some texts do not consider its *śodhana* essential. However, some other texts recommend its *śodhana*, specially if it is of *hīnavarṇa* quality (having a purity less than 24 carat). According to *Rasendra Sāra Saṃgraha* impure and unincinerated gold, if used internally, is likely to prove harmful and may produce loss of *saukhya, bala* and *vīrya* and also may cause many diseases ; hence it should be purified and converted to ashes.

*Śodhana :*

*Śodhana drugs—Khaṭikā, lavaṇa, gairika, gṛhadhūma, iṣṭikā cūrṇa, balmīka-mṛttikā, kāñjika, jambīra rasa.*

*Śodhana process :* Applying of the paste of *pañcamṛttikā* or *khaṭikā* and *lavaṇa* prepared in *kāñjika* or *jambīra rasa* and subjecting to *puṭa pāka* in *laghupuṭa* using *vanyopalas*—as fuel.

*Māraṇa (incineration) :*

*Māraṇa drugs—Pārada, pārada bhasma, gandhaka, nāga cūrṇa, pūrāmbu, jvālāmukhī svarasa.*

*Bhāvanā drugs—Nimbū rasa, kāñcanāra rasa, lāṅgalī rasa.*

*Process*—Gold leaves are mixed with the *māraṇa* drugs and ground well. The mixture is treated with *bhāvanā drugs*, closed into a *śarāva sampuṭa* and heated by *puṭa* system.

*Type and number of puṭas : Kukkuṭa* or *kapota puṭa*, ten to fourteen times, or heat it with five to thirty *vanyopalas.*

*Colour of bhasma (ash)—Kuṅkumacchāya, jambūphalābha, campakavarṇa*

*Note*—Out of these methods the *bhasma* prepared by adding mercury and sulphur or their compounds is said to be *niruttha* and the best. Hence in practice also *śvarṇa bhasma* is prepared with mercury and sulphur or with their compounds.

## RAJATA (SILVER) Ag

*Mythological origin :*

According to ancient texts, silver is believed to have originated from the semen of Candramā (Moon). According to *Āyurveda Prākaśa* it is said to have originated from the falling drops of tear from the third eye of Lord Śiva on his becoming angry.

*Varieties :*

Three varieties of *rajata* have been mentioned in *Rasa* texts. These are :

| | | | | | |
|---|---|---|---|---|---|
| | 1. *Sahaja* | — | native | — | the best, |
| | 2. *Khanija* | — | mineral | — | better, |
| and | 3. *Kṛtrima* | — | artificial | — | ordinary. |

Of these, the *sahaja* is claimed to be *durlabha* (rare), and the *khanija* is common and is said to possess *rasāyana* property. The *kṛtrima* is also rare and said to be produced through transformation of lower metals by the effect of mercury.

Varieties of silver are also described on the basis of colour, *viz.*,

| | | | |
|---|---|---|---|
| | 1. White | — | pure, |
| and | 2. Black | — | impure. |

*Modern description :*

Like gold, silver is also a soft, melleable and ductile metal which is an excellent conductor of heat and electricity. Its hardness is about 2.3 and sp.gr. is 10.5 when pure. It is lighter than gold. Its colour is white but may have grey, black, bluish-black tarnish which may be the effect of atmosphere. Chemically, the tarnish is due to the formation of oxide or sulphide. Its fracture is hackly and it melts at 960°C. Silver is readily soluble in nitric acid. It possess metallic lustre, has silver white streak and shining appearance. Silver can be distinguished from other metals by its colour, sp.gr., and melleability.

In nature, silver is usually found in large irregular masses, in flat scales and in granules or crystals. Crystals are usually small and sometimes distorted. Cubes and octahedrons are more common. It is native silver and may be taken as the *sahaja* variety of silver described by ancient scholars. However, pure silver is not common in nature.

Another important source of silver is its sulphide mineral argentite ($Ag_2S$). The mineral is black in colour and usually contains gold upto 28% and also copper, arsenic, mercury, iron, antimony and platinum in traces. It is sometimes

associated with lead also. This may be taken as the *khanija* variety of silver. Galena (PbS) is also an important source of silver but here the percentage of silver is low. Sometimes silver is also found in gold minerals but only in traces.

Silver can also be made artificially by transmutation through mercury and with other methods.

Silver is found in veins of calcite ($CaCO_3$) and quartz ($SiO_2$). It occurs invisibly, disseminated in small quantities in many minerals particularly sulphides, and visibly intermingled with native copper. Silver also occurs in placers. Silver is mixed with copper to make it hard. It is also considered a precious metal and is used for coinage, jewellery and medicine.

*Properties :*

*Superior variety*—The silver which is heavy, smooth, soft, white, becomes brighter on heating, clear like *śaṅkha* or moon, non-brittle and solid is considered superior and is recommended for use.

*Inferior variety*—The silver which turns red, yellow or black on heating, is rough, brittle, non-ductile, thick, light and mixed with other metals like copper is considered inferior and is not recommended for use.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | — | *Madhura, amla, kaṣāya.* |
| *Guṇa* | — | *Guru, śīta, snigdha, sara.* |
| *Vīrya* | — | *Śita.* |
| *Vipāka* | — | *Madhura.* |
| *Karma* | — | *Lekhana, vayasthāpana, vayasthairyakara, āyuprada, vṛṣya, paramabalya, varṇya, rucya, medhya, puṣṭikara, vīryavardhaka, rasāyana, ajarākara, jaṭharāgnidīpi, gadhara, dīrgha rogaghna.* |
| *Doṣa prabhāva* | — | *Vātaprakopajit, vātapittajit.* |
| *Vyādhi prabhāva* | — | *Pittaja roga, kṣayaja roga, gudaja roga, netra roga, pāṇḍu roga, sarvadoṣaja roga, dīrgha roga, prameha, timira, yakṣmā, śvāsa, kāsa, jvara, tṛṣṇā, śoṣa, ajīrṇa, aruci, udara, arśa, gulma.* |

*Processing :*

*Ill effects of aśuddha (unpurified) and amṛta (unincinerated) rajata :*

*Aśuddha* and *amṛta rajata* used internally is likely to cause *āyubala* and

diseases like *śukranāśa, dhātuśoṣa, acāturya, malabaddhatā, jvara* and *dāha.* Hence its *śodhana* and *māraṇa* are necessary.

*Śodhana :*

*Śodhana drugs*—*Kṣāra* and *amla* drugs, *taila, takra, gomūtra, kāñjī, kulattha kaṣāya, agastya patra rasa.*

Śodhana process—1. *Pācana* (heating) with *śodhana* drugs.
2. Heating and dipping in the prescribed liquids for several times.

*Māraṇa :*

*Māraṇa drugs*—Purified mercury, sulphur, cinnabar, orpiment, chalcopyrite, *kajjalī, nimbūrasa, snuhī kṣīra.*

*Bhāvanā drugs*—Any *amla drava.*

*Process and apparatus*—Silver is mixed with the *māraṇa* drugs in specific proportion and ground well till a paste is made. It is closed in a *musa* or *śarāva sampuṭa* or *damaru yantra* and heated in prescribed manner.

*Type and number of puṭas*—*Kukkuṭaputa* or *laghupuṭa* using twenty to thirty *vanyopalas.*

*Colour of bhasma*—*Generally black.*

## TĀMRA (COPPER) Cu

*Mythological origin :*

According to ancient texts copper is said to have originated from the semen of Kārtikeya which fell on the earth. According to *Rasa Kāmadhenu śulva* (silver) is said to have originated from śūrya (sun).

*Varieties :*

Two varieties of copper are described on the basis of the place of origin. These are *nepālaka* (blood-red) and *mleccha* (black). Of these *nepālaka* is considered better because it is red, soft and free from impurities.

*Modern description :*

Copper is a soft and red coloured metal having a hardness of 2.5 to 3 and

sp. gr. of 8.5 to 9 and possessing metallic lustre. It is ductile and malleable. Its streak is copper-red, metallic and shining, and it is an excellent conductor of heat and electricity. It is found in native form as well as in the form of sulphides, oxides, and carbonates.

Native copper is very rare. Generally copper is obtained from its minerals. Nearly 200 to 300 copper containing minerals are found in nature and of these sulphide group of minerals are more common. Chalcocite, chalcopyrite and covallite among the sulphides, cuprite among the oxides, andmalachite and azurite among the carbonates deserve mention.

Native copper is found in crystals, scales, grains, plates and masses. Its crystals are usually distorted but tetrahexahedrons, rhombics and cubes are also not uncommon. It is generally almost pure but sometimes contains small amount of silver, arsenic, bismuth and antimony. Native copper occurs principally in volcanic rocks, in veins, and in dark coloured igneous rocks. It is hard to mine.

The sulphide minerals of copper are black, purple or yellow, the oxides and native copper are dull red, while the carbonates are blue or green. Common associates of copper minerals are calcite, quartz and silver. USA, Chile, Peru, Cyprus, Africa, Japan, Australia, Northern Rhodesia, Canada, Congo and USSR have large deposits of copper. The percentage of copper in its ores depends on the place from which it is obtained. In very thin plates copper is translucent with a green colour. It melts at 1085°C and is easily dissolved in acids, specially in nitric acid with evolution of red fumes. Its boiling point is 2300°C. Copper is an important constituent of some valuable alloys like brass, bronze, bell metal and german silver. Blue vitriol (copper sulphate) is its important compound which is used as fungicide and as medicine. When put on fire copper and its compounds yield a bluish green flame and this is a test for the presence of copper in a compound. This flame test of copper is also found mentioned in ancient texts.

*Properties :*

*Superior variety*—The copper which is red, similar to *śukacañcu, palāśa puṣpa* or *japāpuṣpa,* heavy, smooth, soft, malleable, ductile and convertible into thin sheets and wires and looks red on cutting or fracture is considered of superior variety.

*Inferior variety*—The copper which is grey (*pāṇḍura*), blackish red, hard, light, brittle, with scales, contains impurities, remains black even after washing, produces toxic symptoms like vomiting and purgation and is obtained from mines other than those of in Nepal is considered inferior and is not recommended for use.

*Note*—In absence of copper obtained from Nepal the copper extracted from copper sulphate as *satva* may be used.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | – | *Kaṣāya, tikta, amla, madhura.* |
| *Guṇa* | – | *Śīta, sara, laghu.* |
| *Vīrya* | – | *Uṣṇa.* |
| *Vipāka* | – | *Kaṭu.* |
| *Karma* | – | *Lekhana, alpabṛmhaṇa, hṛdviśodhana, kṣutkara, kṛmighna, śodhana, ropaṇa, netrya, rasāyana, garahara.* |
| *Doṣa prabhāva* | – | *Vātakaphahara, pittakaphahara.* |
| *Vyādhi prabhāva* | – | *Pāṇḍu, udara, arśa, gulma, plīhāyakṛdh-roga, kṛmi, śotha, śula, udara śula, pariṇāma śula, aṣṭavidha śula, amlapitta, jvara, śvāsa, kāsa, kṣaya, kuṣṭha, pīnasa, agnimāndya, kṣayaja prameha, grahaṇī, jīrṇa jvara, arocaka, mūrcchā, āmavāta, āmadoṣa, viṣadoṣa, vṛddhi, sthaulya, jarā, mṛtyu.* |

Note – Copper *bhasma* is highly useful in *śvāsa, kāsa, jvara, śula, amlapitta, pāṇḍu* and *hṛdroga.*

*Processing :*

*Śodhana :*

*Necessity for śodhana* – The copper, not purified and not converted to ashes, is considered highly toxic and is said to be more toxic than poison itself. Poison may produce one harmful effect while copper may cause the following eight *doṣas* (toxic effects) in the body, namely *bhrama* (vertigo), *mūrcchā* (loss of consciousness), *vidāha* (burning sensation), *sveda* (sweating), *kleda* (wetness), *vānti* (nausea), *aruci* (loss of palate), and *citta santāpa* (mental disturbance). Copper is also likely to produce the following diseases namely *kuṣṭha,* severe purgation, *vātarakta, kāmalā, āyunāśa, kānti-vīrya-bala nāśa, dhātukṣaya, śoṣa,* and *śula.* Hence it should be purified and incinerated before being used internally.

***Śodhana** drugs – Taila, takra, gomūtra, kāñjī, kulattha kaṣāva, arkakṣīra **snuhīkṣīra**, lavaṇa* and *nirguṇḍī rasa, amla* and *kṣāra dravyas.*

*Śodhana process :*

1. Heating and dipping in prescribed liquids.

2. Heating to red hot after applying the paste of *lavaṇa* prepared with *snuhī* and *arka kṣīra* and then dipping into *nirguṇḍī* juice or *gomūtra* mixed with *amlas* and *kṣāras.*

*Māraṇa :*

*Māraṇa drugs—Śuddha pārada, gandhaka, lavaṇa* and *kṣāra, cāṅgerī kalka, sūraṇa kanda, pañcāmṛta.*

*Bhāvanā drugs—Nimbūrasa, kumārirasa.*

*Process and apparatus*—A paste of *kajjalī* is applied over copper foils. These are put in a *lavaṇa yantra, bālukā yantra, bhāṇḍa yantra* or *śarāva sampuṭa* and heated by *puṭa* system or through fire woods.

*Type and number of puṭas :* Three to seven *gajapuṭas.*

*Colour of bhasma—Barhikaṇṭhābha* or black.

*Amṛtīkaraṇa :*

*Amṛtīkaraṇa* is a part of the *māraṇa* process in which the remaining *doṣas* of *bhasmas* are removed by further processing. It is recommended only in case of some *bhasmas* like *tāmrabhasma* and *abhraka bhasma.* It is very much essential for *tāmrabhasma.* As by simple *māraṇa* process *tāmrabhasma* does not become free from its toxic effects.

*First method :* Copper *bhasma* is triturated with *nimbu* juice and made into a mass form. This is placed inside the hole made in a *sūraṇa kanda,* which is then covered with clay, dried and subjected to *gajapuṭa* heating, if necessary for two or three times. Copper *bhasma* is collected from this on cooling.

*Second method :* In this, copper *bhasma* should be triturated with *pañcāmṛta* instead of *nimbū* juice. The remaining procedure remains the same.

According to some scholars *nimbu rasa* and *pañcāmṛta* are both used together for the *amṛtīkaraṇa* of *tāmrabhasma.*

*Test for niruttha tāmrabhasma :*

After completing the *bhasmīkaraṇa* process the *tāmrabhasma* should be kept in contact with any *amla* [*nimbū rasa* or *amla dadhi* (curd)] for sometime. The *māraṇa* cannot be considered as complete if a bluish tinge appears in the *amla* and the *bhasma* may be subjected to further processing.

For this test sour curd is prefered as on account of the whiteness of the curd even a slightest bluish colour could be easily detected.

LOHA (IRON) Fe

*Varieties :*

Three main varieties of loha are mentioned in *Rasa* texts and these are :

| | | | | |
|---|---|---|---|---|
| A. *Muṇḍa* | – | ordinary | – | cast iron, |
| B. *Tikṣṇa* | – | better | – | steel, |
| and C. *Kanta* | – | best | – | magnetic iron. |

Each of these three is described to have some subvarieties, such as :

| | | |
|---|---|---|
| A. *Muṇḍa loha* | – | 1. *Mṛdu,* |
| | | 2. *Kuṇṭha.* |
| | | 3. *Kaḍāra.* |
| B. *Tīkṣṇa loha* | – | 1. *Khara.* |
| | | 2. *Sāra,* |
| | | 3. *Hṛnnāla,* |
| | | 4. *Tārāvaṭṭa,* |
| | | 5. *Vājira,* |
| | and | 6. *Kālaloha.* |

C. *Kānta loha*—This has been divided on the basis of colour, magnetic effects and magnetic poles.

*On the basis of colour :*

| | | |
|---|---|---|
| 1. *Pīta* | – | *vedhakara,* |
| 2. *Kṛṣṇa* | – | *rasāyana,* |
| 3. *Rakta* | – | *Bandhakara* |

*On the basis of magnetic effect :*

| | | | | |
|---|---|---|---|---|
| 1. *Bhrāmaka* | – | – | – | *inferior,* |
| 2. *Cumbaka* | – | – | – | *ordinary,* |
| 3. *Karṣaka* | – | – | – | *superior,* |
| 4. *Drāvaka* } 5. *Romaka* } | – | – | – | *most superior* |

*On the basis of magnetic poles :*

| | | | | |
|---|---|---|---|---|
| 1. *Ekamukha* | | | — | *inferior,* |
| 2. *Dvimukha* | | | — | |
| 3. *Trimukha* | — | — | — | *ordinary.* |
| 4. *Caturmukha* | | | — | *superior,* |
| 5. *Pañcamukha* | | | | |
| 6. *Sarvatomukha* | — | — | *most* | *superior* |

*Physical properties :*

A) *Muṇḍa loha—Muṇḍa loha* is malleable, having a melting point of 1200°C which is much lower than the same of other varieties of iron. Hence in Āyurveda it is called *druta drāva.* In addition to iron it may contain upto 4% carbon, silicon, mangenese, phosphorus and sulphur. It is mainly used for making iron pots of daily uses. Its varieties are based on its malleability.

B) *Tīkṣṇa loha— Tīkṣṇa loha* is a type of steel which is made from pig iron after removing some of the impurities. Many types of steel are made by reducing or removing the carbon content of iron. In some cases chromium, manganese and nickel may also be mixed in different proportion. Each of the three varieties of *tīkṣṇa loha* mentioned in ancient texts is claimed to be better than the preceding one. Till now it is not possible to find out their modern equivalents and these cannot be explained in modern terms.

*Best quality tīkṣṇa loha :*

According to *Āyurveda Prakāśa* best *tīkṣṇa loha* is that which on rubbing with the paste of *kāsisa* and *āmalakī* and subsequent washing becomes so bright that one can see his image in it.

C) *Kānta loha—Kānta loha* is magnetic iron obtained from magnetic iron ore. It is the best of all the three varieties of iron. It is highly useful in *rasakarmas* (mercurial operations) and *rasāyana karmas* (rejuvenation and therapeutic purposes). It is claimed to be the best restrainer for mercury, like an *aṅkuśa* (iron hook) for elephant. The varieties of *kānta loha* starting from *bhrāmaka* down to *romaka* are based on their respective magnetic power. As such, the *cumbaka* and *romaka* varieties possess better magnetic power. Its magnetism is influenced greatly by exposure to sun and atmosphere. Hence, it should be protected from their effects and should be collected from deep places.

According to the texts best *kānta loha* is that which does not allow oil drops to spread on water surface, neutralises the bitterness of *nimbapatra* paste, destroys the smell of *hiṅgu* and holds the boiling milk from spilling out of the vessel and allows it to attain a *śikharākāra* (tower shape).

*Historical status of iron :*

Iron is known to mankind since ancient times as in Vedic literature there are a number of references to this metal. But during that period it was used for commercial purposes only, its medicinal values came to be known only in later period, *i.e.*, from the time of Āyurvedic Saṃhitās. Its main mineral *gairika* is also known and used since ancient times.

*Modern description :*

Ordinary iron is of light grey colour and possesses a metallic lustre. Its dorsal surface put under microscope after proper cleaning looks granular. Its melting point is 1500°C and boiling point is 2950°C. Usually, iron is obtained from various iron oxide minerals, of which hematite, limonite, and magnetite are the most important ones. Sometimes, the sulphide minerals are also used for this purpose but in that case they are first converted into oxides before iron is extracted from them. The sulphide minerals are $CuFeS_2$ *(svarṇa mākṣika)*, FeS *(raupya mākṣika)*, and $FeS_2$ *(vimala)*. But because of difficulty and cost iron was being obtained in India from haematite since ancient times. The best variety haematite yields 65 to 70% iron. In the process of extraction the mineral is mixed with charcoal and heated to separate metallic iron. In this process carbon, silicon, phosphorus and manganese are mixed with iron in traces. This is cast or pig iron which is not malleable, rather brittle. Important iron ores include haematite, limonite, magnetite and siderite which are oxides. Of these, haematite and limonite may be taken as varieties of *gairika* and magnetite may be taken as *kānta loha*. Siderite is occasionally used as iron ore as its iron content is very low (48%). Haematite contains highest percentage of iron, *i.e.*, 70%. It varies from red earthy powder to a dark compact shiny mass. Very large beds occur in Minnesota, Michigan, Wisconsin and in adjacent Canada. It occurs abundantly in India also. Its hardness is 1.5, sp. gr. is about 5 and its streak is cherry red. Limonite is yellow, soft and earthy or smooth, dark, compact, and rounded masses. Its iron content is about 60%. Its hardness is 1 – 1.5, sp. gr. is about 3.5, streak is yellow brown. It may be taken as *svarṇa gairika*. Magnetite is black and can be picked up easily by magnet. It is hard and heavy. Its hardness is 6, sp. gr. is 5.2, and its streak is black. It is found in crystals or masses in basic igneous rocks and metamorphosed sedimentary rocks. In India Salem mines of Tamil Nadu are famous for magnetite. It is found in the form of sand, plates or masses and has a metallic lustre.

Pyrite, pyrrhotite and marcasite are the sulphide ores of iron. Pyrite is light, brass-yellow and may be taken as *mākṣika* or *svarṇa mākṣika*. Pyrrhotite is bronze like or brownish and may be taken as *kāṃsya mākṣika*. Marcasite is white and may be taken as *raupya mākṣika*. Iron is obtained from sulphide ores with difficulty.

*Pharmaco-therapeutic properties :*

*Loha :*

| | | |
|---|---|---|
| *Rasa* | — | *Tikta, kaṣāya, madhura.* |
| *Guṇa* | — | *Śīta, sara, guru, rūkṣa.* |
| *Vīrya* | — | *Śīta (uṣṇa* according to *Rasa Kāmadhenu).* |
| *Vipāka* | — | — |
| *Karma* | — | *Lekhana, balya, vṛṣya, rasāyana, vayasya, cakṣuṣya, vājīkara, yogavāhī, rudhirakṛt, koṣṭha śodhi, vīryakṛt, putraprada, prabhūtaguṇakṛt, madana saṅjanana.* |
| *Doṣa prabhāva* | — | *Anilāpaha, ślesmahara, tridoṣahara.* |
| *Vyādhi prabhāva* | — | *Śotha, śula, arśa, pāṇḍu, kāmalā, kṛmi, śoṣa, plīha roga, medoroga, kuṣṭha roga, jarā roga, rudhira roga, gulma roga, udara roga, hṛd roga, śleṣma roga, śvāsa, kāsa, prameha, grahaṇī, jvara, āmavāta, bhrama, kṣīṇatva, pīnasa, vami, aruci, vandhyātva, malaja roga, mṛtyu.* |

*Muṇḍa Loha :*

| | | |
|---|---|---|
| *Rasa* | — | *Tikta, kaṣāya, madhura.* |
| *Guṇa* | — | *Guru, rūkṣa.* |
| *Vīrya* | — | *Śīta.* |
| *Karma* | — | *Agnipradīpi, koṣṭha śodhi, rudhirakṛt.* |
| *Doṣa prabhāva* | — | *Kapha vātahara.* |
| *Vyādhi prabhāva* | — | *Prameha, kāmalā, pāṇḍu, gulma, āmavāta, jaṭharārti, śopha, āmaśula, āmakapha, dāha, śoṣa, kuṣṭha, rakta roga.* |

*Tīkṣṇa Loha :*

| | | |
|---|---|---|
| *Rasa* | — | *Tikta.* |
| *Guṇa* | — | *Śīta, rūkṣa, uṣṇa* also. |
| *Vīrya* | — | *Śīta/uṣṇa.* |
| *Karma* | — | *Dīpana, rasāyana, balakara, sadyaḥśulahara.* |
| *Doṣa prabhāva* | — | *Kaphapittakara.* |
| *Vyādhi prabhāva* | — | *Śula, yakṛt vikāra, plīha roga, jaṭhara roga, āmaśula, pāṇḍu, kṣaya, kuṣṭha, jarāvyādhi, arśa, prameha, āmavāta, medoroga.* |

*Sāra loha :*

| | | |
|---|---|---|
| *Rasa* | – | *Tikta, kaṣāya.* |
| *Guṇa* | – | *Guru, rūkṣa.* |
| *Vīrya* | – | *Śīta.* |
| *Doṣa prabhāva* | – | *Pittanāśaka.* |
| *Vyādhi prabhāva* | – | *Chardi, śvāsa, kāsa, grahaṇī, pīnasa, atisāra, prameha, pariṇāma śūla, ardhāṅga vāta, sarvāṅga vāta.* |

*Kānta loha :*

| | | |
|---|---|---|
| *Rasa* | – | *Tikta.* |
| *Guṇa* | – | *Snigdha, śīta/uṣṇa.* |
| *Vīrya* | – | *Śīta/uṣṇa.* |
| *Karma* | – | *Balavīrya vardhaka, agnivardhaka, cirāyukara, rasāyana, vṛṣyatama, ojovardhaka, tejovardhaka, dṛṣṭivardhaka, kāntijanana, śarīravṛddhikara, samasta rogahara.* |
| *Doṣa prabhāva* | – | *Tridoṣa śamana.* |
| *Vyādhi prabhāva* | – | *Śopha, pāṇḍu, kāmalā, halīmaka, jarāroga, kṣaya, aṣṭādaśakuṣṭha, gulma, udaraśūla, arśa, bhagandara, udararoga, yakṛd plīha roga, amlapitta, āmavāta, āmadoṣa, prameha, śirorujā, vandhyātva, samasta roga.* |

*Processing :*

*Śodhana :*

*Necessity for Śodhana :*

According to *Āyurveda Prakāśa* there are seven types of *doṣas* in *loha dhātu*, viz., *gurutva* (heavīness), *dṛḍhatva* (stiffness), *utkleda* (nauseating tendency), *kaśmala* or *glāni* (timidness), *dāha kāritva* (causing burning sensation), *aśmadoṣa* (leading to calculous formation), and *durgandhatā* (bad smell). Hence *loha* should be used after proper processing. The above mentioned *doṣas* of *loha* are considered to be *svābhāvika* (natural). Besides these *doṣas*, unprocessed *loha* may cause the following diseases also, *viz., vandhyātva* (sterility), *kuṣṭha* (skin lesions), *hṛd roga* (cardiac problems), *śūla* (colic), *aśmārī* (calculous), *hṛllāsa* (nausea) and *mṛtyu* (death) and also *balabuddhināśa* (destruction of strength and intelligence), *śarīra paṭutānāśana* (loss of energy), *prāṇaharaṇa* (loss of

vitality), *mada janana* (intoxication), *śula janana* (induction of pain), *sundaratā nāśana* (destruction of beauty/complexion). Thus, its purification with *śodhana* and *māraṇa* processes is highly essential.

*Śodhana process :*

*Śodhana drugs— Taila, takra, gomūtra, kāñjī, kulattha kaṣāya* for general purification and *triphalā kvātha, ciñcāpatra rasa, kadalīmūla jala, kṣīra* for special purification.

*Śodhana process*—Heating to red hot and then dipping into the prescribed liquids for prescribed times.

*Notes :*

1. Generally, heating of iron foils is done without any pasting but in some cases pasting of *samudra lavaṇa* and rabbit's blood is recommended before heating.

2. Some scholars suggest the use of *gomūtra* instead of water for preparing *triphalā kvātha.*

3. By treating the heated iron foils alternately in acidic and alkaline liquids or in the mixture of both the dis-integration of iron particles is achieved.

*Māraṇa :*

*Māraṇa drugs*—Minerals—Mercury, sulphur, cinnabar.
Herbs—*Eraṇḍapatra, goghṛta, mitra pañcaka*

*Bhāvanā drugs— Triphalā kvātha, kumārī rasa, bhṛṅgarāja rasa, kaṇṭakārī rasa, adrikarṇī rasa, matsyākṣī rasa, āmatinduka rasa, gomūtra.*

*Process—Bhānupāka, sthālīpāka, puṭapāka, niragnipāka.*

*Type and number of puṭas : Gajapuṭa* (500°C - 600°C) seven to one hundred *puṭas.*

*Type of heat—Sūryatāpa :* two yāma to three days.
*Dhānyarāśi pāka :* three to fourteen days.
*Agnitāpa :* four *prahara (Rajahastamita garta Pūrāṇa).*

*Apparatus—Tāmrapātra, bhāṇḍayantra, sthālīyantra, kaṭāhayantra, śarāva samputa.*

*Colour of bhasma—Jambūphalābha, rakta/sindūrābha, gṛhadhūmavat.*

*Amṛtīkaraṇa :*

This is a part of *māraṇa* process and is done to remove the remaining *doṣas* (bad effects) or to induce some special properties in the *bhasma.* In case of *loha-bhasma* it is done with equal or double quantity of *triphalā kaṣāya.* The *loha-bhasma* is ground and heated with *triphalā kaṣāya* after completing *puṭapāka* so as to make it more effective.

*Explanation for different colours of loha bhasma :*

*Red colour* is due to the formation of iron oxide on account of heating for a number of times. *Pakva jambūphala* like colour is due to the mixture of red and black colours. This colour is mentioned for *kāntaloha bhasma. Gṛhadhūma* like colour is found in the *loha bhasma* which is prepared without a treatment with fire. It may be due to the presence of black sulphide of mercury as in this process *kajjalī* is mixed with iron and heat is applied through *dhānyarāśi* or sun rays.

*Note*—Amongst all the *loha bhasmas, kānta loha bhasma* is considered superior most. It is also said about *loha bhasma* that there is no better *rasāyana* drug in the world than *loha.*

*Maṇḍūra (rusted iron)* $Fe_2O_3$ :

*Origin :*

It is said to be *loha mala* or *loha kiṭṭa* which means it gets its origin from *loha* (iron) as a by-product. According to *Āyurveda prakāśa* it is a *mala* (slag) of iron produced on heating.

*Modern description :*

According to modern science *maṇḍūra* is iron oxide produced naturally. A rust is formed on the outer surface of iron when it is exposed to sun, air, and moisture. This rust separating out in course of time is known as *Maṇḍūra.* This process continues for a long time and thus the iron goes on rusting, leading to its complete conversion into the rusted form. Ancient scholars observed this and gave the name *loha kiṭṭa* or *mala* to the rust. In real sense it is the result of slow chemical reaction which helps the conversion of iron into iron oxide due to the effect of atmosphere. *Maṇḍūra* formation is a very slow process and takes years to complete the reaction. Probably because of this the ancient scholars recommended that *maṇḍūra* older than one hundred years is the best as in very

old samples of *maṇḍūra* the chances of the presence of unreacted iron are very low. Probably because of this reason it is said in *Rasa* texts that *maṇḍūra* could be used after purification only and its *māraṇa* is not necessary ; as in the *māraṇa* process iron is treated in such a way that it becomes converted into iron oxide in comparatively much less time. During *māraṇa* treatment the conditions necessary for the required chemical reactions are created artificially with a view to allow this reaction to proceed quickly. In this reaction two atoms of iron are combined with three atoms of oxygen and the product formed is $Fe_2O_3$.

*Properties :*

*Superior variety*—The *maṇḍūra* which is heavy, smooth, hard, without fissures and older than hundred years is considered superior.

It is said in *Rasendra Cintāmaṇi* that *kiṭṭa* older than one hundred years is the best, older than eighty years is medium and older than sixty years is inferior ; and if it is less than sixty years old it should be discarded as such *kiṭṭa* is considered as a *viṣa* (poison) probably because of the presence of high percentage of unreacted metallic iron.

*Properties according to the variety of iron of origin :*

| | | |
|---|---|---|
| 1. *Muṇḍa kiṭṭa* | — | Slightly red, heavy and smooth. |
| 2. *Tikṣṇa kiṭṭa* | — | Black like broken piece of añjana, heavy without cracks, holes and fissures. |
| 3. *Kānta kiṭṭa* | — | Yellowish, rough, very heavy, without fissures and shining like silver on fracture or cut. |

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | — | *Kaṣāya.* |
| *Guṇa* | — | *Śiśira.* |
| *Vīrya* | — | *Śīta.* |
| *Karma* | — | All the *karmas* attributed to *loha* are said to be found in *loha kiṭṭa* also. |
| Doṣa prabhāva | — | Not mentioned. |
| *Vyādhi prabhāva* | — | *Pāṇḍu, kāmalā, kumbha kāmalā, halīmaka, śopha, śvayathu, plīharoga, śoṣa.* |

*Note*—It is said about *muṇḍa kiṭṭa* that all the properties mentioned for *muṇḍa loha* are also found in *muṇḍa kiṭṭa. Maṇḍūra bhasma* is claimed to be *vṛṣya, rucikara, dīpana, śīta, pitta śāmana*, and *rakta vṛddhikara.*

*Processing :*

*Śodhana :*

*Śodhana drugs*—*Gomūtra, triphalā kvātha, triphalā kvātha* prepared in *gomūtra.*

*Śodhana process*—Heating to red hot in *akṣāṅgāra* and dipping into *gomūtra* or *triphalā kvātha.* The process is repeated seven or eight times or till it becomes *jīrṇa* (completely converts into powdery form).

The author of *Āyurveda Prakāśa* recommends the vessel made of *akṣakāṣṭha* for keeping the liquid used for *śodhana.* Some scholars suggest that after heating and dipping *maṇḍūra* should be boiled in double the *triphalā kvātha,* fired and then powdered and used. As regards the number of operation of the process it may be said that if the *maṇḍūra* is of superior quality it needs less heating and dipping but if it is of inferior variety it may need more heating and dipping.

*Māraṇa :*

Generally, *māraṇa* is not necessary for *maṇḍūra.* However. some texts mentions the method of its *māraṇa.*

*Māraṇa drugs*—Purified mercury and sulphur, the drugs of *lohamārakavarga.*

*Bhāvaṇa drugs*— *Triphalā kvātha, kumārī rasa, laśuna rasa.*

*Process :* Heating by *puṭa* system using *gajapuṭas* seven to thirty times.

*Colour of bhasma :* Red like *rakta candana.*

*Note*—*Maṇḍūra māraṇa* methods are mentioned in *Rasa Kāmadhenu, Rasāmṛtam* and *Rasa Taraṅgiṇī.*

## NĀGA (LEAD) Pb

*Mythological origin :*

According to the ancient texts lead is said to have originated from the semen of Vāsukī (the king of snakes) which he discharged on seeing the young and beautiful daughter of Bhogī (another king of snakes).

*Modern description :*

Lead is a dark-white and very soft metal which may be scrapped even by nails. Its hardness is 1.5, sp. gr. is 11.3. It melts at 326°C-335°C and boils at 1525°C. When rubbed on paper lead yields black lines. Though the metal is brittle, thin sheets can be prepared from it. It is not affected by pure water and dry air but in impure water it is slightly corroded. The metal was known to our ancients since Vedic times. It is obtained in two forms, native lead (rare) and mineral lead (common).

Lead is generally obtained from galena (lead sulphide PbS). Though there are more than a dozen lead minerals, only two of them are important. Both are secondary minerals and obtained from galena by slow action of air and moisture. It usually contains small quantities of silver and antimony. It is used for many purposes in industry but for medicinal purposes it should be used with care as its prolonged use may cause lead poisoning due to cumulative effect.

*Important synonyms :*

*Bhujaṅga, druta drāvī, kṛdūttamam, sindūra kāraṇam, suvarṇāri, yakṣma-dhātu, rañjakam, mahābhāram, pūtigandham, barhi śyāmam* are synonyms of *nāga* (lead).

*Properties :*

*Superior variety*—The lead which is quick melting (*drutadrāvī*), heavy, looks black externally but bright on cutting, smooth, soft and possesses putrid smell is considered the best and is recommended for use.

*Inferior variety*—Lead other than this is inferior.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | — | *Tikta, kaṭu, lavaṇa, kṣāra.* |
| *Guṇa* | — | *Uṣṇa, laghu, śnigdha, sara.* |
| *Vīrya* | — | *Uṣṇa.* |
| *Karma* | — | *Balya (daśa* or *śatanāgabalakara), vīrya-vardhaka, āyuvardhaka, kāntivardhaka, cakṣusya, kṛmighna, lekhana, rajata rañjaka.* |
| *Doṣa prabhāva* | — | *Vātahara, kaphavātahara, tridoṣaghna.* |
| *Vyādhi prabhāva* | — | Best for *prameha, dhanurvāta, vātajaroga, kṛmijaroga, medoroga, āmavāta, āmaśotha, āmaśūla, śvāsa, kāsa, grahaṇī, atisāra, arśa, gulma, pāṇḍu, kuṣṭha, vraṇa, viṣa, śoṣa. tṛṣṇā.* |

*Processing :*

*Necessity for processing :* It is said in *Āyurveda Prakāśa* that unpurified and unincinerated lead is likely to produce *prameha, kṣaya, kāmalā, kuṣṭha, kilāsa, tvak-vikāra, sandhirujā, pakṣavadha, gulma, ānāha, śoṣa, bhagandara, agnimāndya, śūla, śotha, dāha, aśmarī, pāṇḍu, jvara* and *vātakaphaja roga.* Hence it should first be purified and incinerated and then used internally.

*Śodhana :*

*Śodhana drugs—Nirguṇḍī rasa, Haridrā cūrṇa, arkadugdha, triphalā kaṣāya, bhṛṅgarāja rasa, gomūtra, goghṛta, madhu, cūrṇodaka.*

*Śodhana process*—Melting and pouring with care into the liquids prescribed for three to seven times.

*Effect of śodhana—Śodhana* removes inpurities like arsenic and renders lead free from *doṣas* causing diseases like *mūrcchā, sphoṭa, etc.*

*Māraṇa :*

*Māraṇa drugs*—Mercury, sulphur, realgar, *ciñcā* and *aśvattha tvak, apāmārga pañcāṅga.*

*Bhāvanā drugs—Vāsā rasa, tāmbūla rasa, kumārī rasa, kāñjika.*

*Process :* 1. *Jāraṇa* with prescribed herbal drugs.
2. *Bhāvanā* and *puṭapāka* by trituration with prescribed *bhāvanā* drugs and heating by *puṭa* system applying mild heat at about 500°C.

*Type and number of puṭas : Laghuputa :* five to sixty *puṭaś.*

*Colour of bhasma—Kapotacchāya* (grey), *sindūrābha* (red), *bhāsura pītābha* (bright yellow), light blackish.

*Note—Nāga bhasma* can be prepared with or without realgar. If realgar is added the resultant compound may be lead sulphide and may be of grey colour. If it is prepared without realgar it may be of yellowish/reddish colour due to the formation of lead oxide.

## VAṄGA (TIN) Sn

*Mythological origin :*

Mythologically tin is said to have its origin from the semen of god Indra, the king of gods.

*Modern description :*

Tin is a white shining crystalline metal. It is malleable and can be rolled into sheets easily. It is harder than lead but can be cut with a knife. It is not so heavy, its sp. gr. is 7.3, melting point is 232°C. Tin becomes brittle at 200°C and also on keeping in cold air. Ordinarily tin is not acted upon by atmosphere and open air does not affect its shine. Hence, it is employed for coating other metals to prevent their rusting or to protect them from the action of chemical reagents, specially organic acids. Sheets of pure tin produce a cracking sound when pressed or bent. This is known as tinery and may be due to the disintegration of its particles. The metal is distinguished from other metals by this sound. From ancient times tin is being used in making alloys like bronze by mixing it with copper and zinc. It also forms alloys with lead, bismuth and antimony. It is used commercially for making tin plates, tin amalgam, gun metal and type metal.

Tin is found in native and mineral forms. Native tin is very rare. It is obtained only in a few places and that too in very small quantities. It is obtained from the streams of Clarence river in greyish white granules along with platinum, gold, tin stone and corundum. Generally it is obtained in mineral form. Its main mineral is cossiterite (tin oxide/$Sn0_2$) in which tin content is almost 80%. The mineral is generally brown or black but occasionally red, grey, or yellow. Its streak is pale, lustre is glossy. It forms crystals but occurs more often in fibrous masses, crusts, in veins, in granite and pigmatite rocks. It also occurs in small amounts in placer deposits in Alaska but mostly it comes from Malaysia and Bolivia. It is also found in Cornwall and Inglena. In India, it is found in very small amounts mixed with other minerals. Tin is extracted from its ore by reduction method. Sometimes it is found mixed with iron, copper, lead and arsenic in small amount. In commercial practice tin is generally adulterated with lead and in that case its colour is not so white and shining but slightly black. This may probably be taken as the *miśraka* variety of ancient texts.

*Varieties :*

Two varieties of *vaṅga* have been described by ancient scholars. These are *khura vaṅga*, which is white *(śveta)* and superior, and *miśraka vaṅga* which is black *(kṛṣṇa)* and inferior. Of the two *khura vaṅga* is pure and considered the better one while *miśraka* is mixed with impurities and is said to be inferior.

In ancient times tin was obtained from Burma whence it was being transported to Bengal and there from throughout India. Hence the metal was known as *Baṅga* or *Vaṅga.*

*Properties :*

*Superior variety*—The tin which is white like moon or silver, soft, smooth, shining, light, straight, soundless, pure and has a low melting point is considered to be of superior quality.

*Inferior variety*—The tin which is blackish, mixed with impurities like lead, heavy and dull is considered inferior and is not recommended for use.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | — | *Tikta, kaṭu, amla, lavana, kṣāra.* |
| *Guṇa* | — | *Rūkṣa, śīta, laghu, sara.* |
| *Vīrya* | — | *Uṣṇa/śīta.* |
| *Karma* | — | *Vṛṣya, balya, puṣṭikara, dhātusthaulyakara, śaktidāyī, madanakara (vājīkara), āyuṣya, cakṣuṣya, rasāyana, dīpana, pācana, rucikara, varṇya, saundaryakara, prajñākara, medohara, viṣahara, dāhahara, saukhyakara, matiprada, prabhākara, bṛmhaṇa, ratirasavardhana, kṛmighna, vilekhana.* |
| *Doṣa prabhāva* | — | *Kaphapittahantā, iṣat vātaprakopaṇa.* |
| *Vyādhi prabhāva* | — | *Prameha, sukrakṣaya, mūtrakṛcchratā, śveta pradara, kṣaya roga, jarā roga, kṛmi, pāṇḍu, śvāsa, kaphaja roga, vātaja roga, viṣaja roga, udara roga, jaṭharavyathā, vami, gulma, grahaṇī, agnimāndya, ādhmāna, dāha, vraṇa, śoṣa, medoroga.* |

*Processing :*

*Necessity for śodhana and māraṇa :*

According to *Āyurveda Prakāśa aśuddha* and *apakva vaṅga* may produce *prameha, gulma, hṛdroga, śūla, arśa, śvāsa, kāsa, vamana, dāha, aśmarī śotha, kuṣṭha, kaphavātaja roga.* Hence it should be purified and incinerated before being used internally.

*Śodhana :*

*Śodhana drugs*—*Cūrṇodaka, niśāyukta nirguṇḍīdrava, arkadugdha, kaṭphala kvātha* with *punarnavā* and *kucalā* powder, *kāñjī, amla takra.*

*Śodhana process*—1. *Svedana* in *dolayāntra* for half a *yāma.*
2. Melting and pouring into the liquids prescribed carefully : three to seven times.

*Māraṇa :*

*Māraṇa drugs*—Purified mercury, orpiment, *apāmārga, pañcāṅga cūrṇa, araṇya kārpāsa daṇḍa, pippala tvak cūrṇa.*

*Bhāvanā drugs*—*Nimbūrasa, kumārī rasa, śatāvarī rasa, arka dugdha, kṣīra santānikā.*

*Process :*

The purified metal is converted into fine powder form first by *jāraṇa* process, that is by heating it in an open pan with prescribed herbal or mineral drug powder. It is then mixed with *rasa* or *haritāla*, triturated with *bhāvanā drugs* and heated by *puṭa* system.

*Type and number of puṭas : Ardhagajapuṭa* or *gajapuṭa* ; three to ten times. In this case heating upto 700°C may be done either through *vanyopalas* or in electric furnace.

*Colour of bhasma*—White like *khaṭikā, śaṅkha, kunda, indu*, or *lavaṇa.*

*Note*—In *vaṅgabhasma*, tin is converted to tin oxide along with traces of some other metals like iron, aluminium, *etc.*

## YAŚADA (ZINC)* Zn

*Historical background :*

*Yaśada* as a specific metal became known to Indian scholars from the 15th cent. A.D. Madanapala was the first scholar to mention it along with other metals. Thereafter, scholars like bhāvamiśra and others mentioned it in their

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* *Yaśada* or zinc is not described in *Rasa Ratna Samuccaya* as it was not known as a specific metal during the time of *R.R.S.* However, in view of its use in medicinal purposes it is being discussed here.

respective texts as the seventh *dhātu* (metal). But *pittala* (brass), an alloy of zinc was found mentioned since long, *i.e.*, from Vedic times. Then what was the source of *pittala* in ancient times ? The answer to this is the mention of *rasaka* much prior to that of yaśada (i.e. 15th cent. A.D.) ; and *rasaka* was said to be *rītikṛt* and *tāmrarañjaka*, which means *rasaka* (the mineral of *yaśada* or zinc) was being used in its *sattva* form to make *pittala* (brass) in ancient times. To indicate this historical fact synonyms like *rītikṛt, tāmrarañjaka, etc.* were given for *rasaka.*

No mythological description of the origin of zinc is found in any text.

*Modern description :*

Zinc is a metal which resembles tin in many respects and is used for making brass since ancient times. It is a white metal with bluish tinge. Its sp. gr. is 7.1, melting point is 429°C and boiling point is 980°C. It is brittle at normal temperature, malleable and ductile at 180°C, and becomes brittle again at 200°C when it could be made into powder. It is highly acted upon by acids and alkalies. It is now extensively used for coating iron vessels to protect them from rusting. Its minerals are obtained from veins, replacement deposits, igneous and carboniferous rocks and are associated generally with lead and copper.

Zinc is not found in native form but is obtained almost from minerals. In nature, it is usually found in the form of sulphides, oxides, carbonates and silicates. Sphelerite (ZnS) is its sulphide minerals. It is yellowish, brick red, grey or blackish in colour and resinous in lustre. Its hardness is 3.5 to 4, sp. gr. is 4 and it is easily breakable. Prof. Kulkarni suggests that *guḍābha rasaka* is similar to this. Zincite (ZnO) is its oxide mineral. It looks like soil having yellowish red colour. It may be taken as *mṛttikā rasaka.* Smithsonite ($ZnCO_3$) is its carbonate mineral. It is mixed with crystalline crust and is hard and hence may be taken as *pāṣāṇābha rasaka.* Hemimorphite ($ZnSiO_2$) is its silicate mineral. It is also crystalline and hard and hence may be taken as *pāṣāṇābha rasaka.* The *sadala* and *nirdala* varieties of *rasaka* mentioned in ancient texts may be taken as carbonates and silicates, respectively.

*Varieties :*

Rasaka is described to be of three or two types. These are *Mṛttikā rasaka, Guḍābha rasaka, and Pāṣāṇābha rasaka.* Some texts also described its *dardura* and *kārabellaka* varieties which are *sadala* and *nirdala*, respectively.

*Properties :*

Very little is said about the physical properties of Zinc in ancient texts like *Yaśadam Raṅga Saṃkāśam* but *Rasa Taraṅgiṇī* mentions the following properties.

*Superior variety*—The Zinc which is bright and shining on cutting, clear, soft, heavy and quick melting is considered to be of superior quality.

*Inferior variety*—The Zinc which is hard, rough, light, dull coloured, melts with difficulty is considered inferior and should be discarded.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | — | *Tikta, kaṭu, kaṣāya.* |
| *Guṇa* | — | *Śīta.* |
| *Karma* | — | *Parama cakṣuṣya, bala vīrya buddhi vardhana, ślesma kalā samkocakara.* |
| *Doṣa prabhāva* | — | *Kaphapittahṛt.* |
| *Vyādhi prabhāva* | — | *Prameha, pāṇḍu, śvāsa, kāsa, jvara, niśā śveda, netraroga, vraṇasrāva, kampavāta, rajaḥsrāva.* |

*Processing :*

*Necessity for śodhana and māraṇa :*

Unpurified and unincinerated zinc is likely to produce diseases like *prameha, ajīrṇa, vātavyādhi, gulma, kṣaya, kuṣṭha, vamana* and *bhrama* on internal use.

*Śodhana :*

*Śodhana drugs*—*Godugdha, cūrṇodaka, nirguṇḍī drava, snuhī kṣīra.*

*Śodhana process*—Melting and pouring into the liquids ; seven to twentyone times.

*Māraṇa :*

*Māraṇa drugs*—Purified mercury, orpiment, sulphur, *bhaṅgā, postā, apāmārga, nimba kāṣṭha.*

*Bhāvanā drug*—*Kumārī svarasa.*

*Process :* The metal is first converted to fine powder form by *jāraṇa* method, that is by heating it in an open iron pan (*kaṭāha*) with the powder of prescribed herbal drugs and rubbing till the metal is completely reduced to powder form. It is then triturated with the *bhāvanā* liquid and subjected to heating by *puṭa* system.

*Type and number of puṭas :* Seven to ten *gajapuṭas.*

*Colour of bhasma*—Slightly yellowish or greyish.

Note—1. Light yellowish colour of the *bhasma* is due to the formation of zinc oxide formed as a result of heating in presence of oxygen.

2. If any untoward effects are produced by the use of *yaśada bhasma balā* and *abhayā* powder may be taken along with sugar for three days to get rid of these effects.

## PITTALA (BRASS)

*Pittala* is an alloy made of two parts of copper and one part of zinc. Though in reality it is a *miśra loha,* or *miśra dhātu* it is included in ancient texts in *loha* or *dhātu* group, probably because of its metallic characteristics. But in later periods when *lohas* (metals) were classified from mineralogical or metallurgical point all the substances initially known as *lohas* were classified into three groups, *śuddha loha, puti loha,* and *miśra loha,* on the basis of their certain specific features. Terms like *upaloha* or *upadhātu* have also been used by different scholars for *miśra loha.* The *miśra lohas* are three in number, *pittala, kāṃsya* and *varta loha.*

*Varieties :*

Two varieties of *pittala* namely *rīti* or *rāja rīti* and *kākatuṇḍī* have been mentioned in ancient texts. Of these the *rīti* or *rāja rīti* is superior while the *kākatuṇḍi* is inferior.

*Method of testing*—The *rīti* is heated to red hot and dipped into *kāñjī* or *tuṣodaka.* If it turns red or white it is considered to be the *rāja rīti* but if it turns black it is considered to be the *kākatuṇḍī.*

*Properties :*

*Superior variety*—The brass which is heavy, soft, smooth, yellow, shining, clean, malleable, ductile and cool to touch is considered to be of superior quality.

*Inferior variety*—The brass which is pale in colour, hard, rough, non-ductile, non-malleable, contains spots, produces bad smell on heating and light in weight is considered inferior. This should not be used for *rasāyana karmas.*

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | — | *Tikta, lavaṇa (bhasma—kaṣāya* and *kaṭu).* |
| *Guṇa* | — | *Rūkṣa, śīta, sara.* |
| *Vīrya* | — | *Uṣṇa.* |
| *Karma* | — | *Rasāyana, vṛṣya, kṛmighna, jantughna, viṣahara, śodhana, nātilekhana.* |
| *Doṣa prabhāva* | — | *Vātapittajit, śleṣma pittaghna.* |
| *Vyādhi prabhāva* | — | *Raktapitta, kṛmi, kuṣṭha, pāṇḍu, plīha roga, viṣa roga.* |

Besides these *pittala* may also have the properties of its constituent metals.

The *kākatuṇḍī* variety is said to be *rūkṣa* in *guṇa, tikta* in *rasa, śīta* in *vīrya, kaphapitta nāśana* in *prabhāva* and *yakṛt plīhahara* in *karma.*

*Processing :*

*Śodhana :*

*Śodhana drugs—Taila, takra, gomūtra, kāñjī, kulattha kaṣāya* for *sāmānya śodhana* (general purification) and *nirguṇḍī drava* or any *amla drava* mixed with *trivṛt cūrṇa* for *viśeṣa śodhana* (special purification).

*Śodhana process :* Heating and dipping into the prescribed liquids, three times in each.

*Māraṇa :*

*Māraṇa drugs*—Sulphur, realgar, orpiment, cinnabar, *arkakṣīra.*

*Bhāvanā drugs—Nimbūrasa, kumārī rasa.*

*Process :*

The paste of sulphur made with *arkakṣīra* or the paste of realgar and sulphur made with *nimbūrasa* is applied on brass in the first two or three heatings. In subsequent heatings these should be mixed with equal parts of cinnabar and orpiment, triturated with *kumārī* juice and subjected to heating by *puṭa* system.

*Type and number of puṭas—Gajapuṭas,* eight to ten.

*Colour of bhasma*—Black like *kajjala.*

## KĀṂSYA (BRONZE)

It is also an alloy made by mixing eight parts of copper with two parts of tin. In ancient times *kāṃsya* made in Saurāṣṭra was considered the best. Now a days bronze is made by mixing seventy eight parts of copper with twenty two parts of tin.

*Varieties :*

Two varieties of *kāṃsya* namely *puṣpa kāṃsya* and *taila kāṃsya* are found mentioned in ancient texts. Of these the *puṣpa kāṃsya* is white and superior while the *taila kāṃsya* is blackish and inferior.

*Properties :*

*Superior variety*—The *kāṃsya* which produces sharp sound, is soft, smooth, clear, bright, shining, white and reddish on heating and could be drawn into wires or rolled into sheets is considered superior.

*Inferior variety*—The *kāṃsya* which is yellowish or blackish in colour, rough, produces feeble or dull sound, not malleable and cannot stand hammering is considered inferior.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | — | *Tikta, kaṣāya.* |
| *Guṇa* | — | *Uṣṇa, laghu, viśada, sara, rūkṣa.* |
| *Vīrya* | — | *Uṣṇa.* |
| *Karma* | — | *Dīpana, lekhana, vṛṣya, dṛkprasādana, dṛḍa dehadāyī, svarya, cakṣuṣya, laghīya, ārogya-kara, svāsthyakara.* |
| *Doṣa prabhāva* | — | *Kaphavātajit, vātahara, vātapittaghna, kaphapittaghna (Āy. Pra.).* |
| *Vyādhi prabhāva* | — | *Arśa, netra roga, prameha, kṛmi, kuṣṭha.* |

*Note*—Like *pittala kāṃsya* also possesses the properties of the metals of which it is made of. According to *Rasa Prakāśa Sudhākara mṛta kāṃsya* is claimed to be good as *vātaharaṇa* and *prameha nāśana.* It is also said about *kāṃsya* that all substances or materials, other than ghee, kept in or eaten from *kāṃsya* vessels prove to be *ārogyakara, sukhakara, hitatama* and *sātmyatama* for the body. *Rasa Prakāśa Sudhākara* adds *amla* and *śāka* also to ghee in this context.

*Processing :*

*Śodhana :*

*Śodhana drugs— Taila, takra, gomūtra, kāñjī, kulattha kaṣāya, aśvamūtra.*

*Śodhana process :* Heating and dipping in the prescribed liquids for a number of times.

*Bhāvanā drugs—Amla drava, nimbūrasa, arkakṣīra, vaṭakṣīra, kumārī rasa.*

*Māraṇa :*

*Māraṇa drugs— Gandhaka, tālaka, śilā, trikṣāras, pañcalavaṇas, hiṅgula.*

*Process :* A paste of *gandhaka* and *tālaka* prepared in lemon juice or a paste of *lavaṇas* and *kṣāras* prepared with *kāñjī* is applied over the *kāṃsya patras* and these are heated by *puṭa* system.

*Type and number of puṭas : Gajapuṭas* five to seven times.

*Colour of bhasma*—Black.

*Note*—Though a number of methods for *kāṃsya māraṇa* are mentioned in the texts the *gandhaka-tālaka* method is widely used for this purpose.

## VARTA LOHA (AN ALLOY MADE OF FIVE METALS)

*Varta loha* is also an alloy made by mixing five metals, *kāṃsya, tāmra, pittala, loha* and *nāga* in equal proportion. It is also known as *pañcaloha* or *viḍa loha.* Some scholars suggest that it is the same as German silver but that does not seem to be correct as in German silver sixty parts of copper are mixed with twenty parts of zinc and twenty parts of nickel. There are thus only three metals in German silver while *varta loha* is said to contain five metals.

It is said in *Rasa Ratna Samuccaya* about *vartaloha* that all food stuffs, except acidic materials, cooked in this vessel prove to be *dīpana, pācana* and *hitakara.*

*Properties :*

No physical properties of this alloy are found mentioned in ancient text.

*Pharmaco-therapeutic properties :*

| | | |
|---|---|---|
| *Rasa* | — | *Kaṭu, amla.* |
| *Guṇa* | — | *Hima, rūkṣa.* |
| *Vīrya* | — | *Śīta.* |
| *Karma* | — | *Rucya, tvacya, kṛmighna, dīpana, pācana, malaviśodhana.* |
| *Doṣa prabhāva* | — | *Kaphapitta nāśana.* |
| *Vyādhi prabhāva* | — | *Netraroga, galaroga, sarvaroga.* |

*Processing :*

*Śodhana :* It should be done like that of *pittala* or *kāṃsya.*

*Bhāvanā drugs— Arkakṣīra.*

*Māraṇa :*

*Māraṇa drugs— Gandhaka, tālaka.*

*Process :* A paste of *gandhaka* and *tālaka* with *arkakṣīra* is prepared and applied over *varta loha* sheets which is then heated by *puṭa* system.

*Type and number of puṭas :* Five *gajapuṭas.*

*Colour of bhasma*—Not mentioned.

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Supplement

# RASA RATNA SAMUCCAYA

(Continued)

Sixth Chapter

Sanskrit Text

English Translation

Notes

# अथ षष्ठोऽध्यायः

## शिष्योपनयनादिनिरूपणीयम्

शिष्योपनयननिरूपणम् –

रसशास्त्राणि सर्वाणि समालोच्य यथाक्रमम् ।
साधकानां हितार्थाय प्रकटीक्रियतेऽधुना ॥ 1 ॥
न क्रमेण विना शास्त्रं न शास्त्रेण विना क्रमः ।
शास्त्रं क्रमयुतं ज्ञात्वा यः करोति स सिद्धिभाक् ॥ 2 ॥

रसाचार्यलक्षणम् –

आचार्यो ज्ञानवान्दक्षो रसशास्त्रविशारदः ।
मन्त्रसिद्धो महावीरो निश्चलः शिववत्सलः ॥ 3 ॥
देवीभक्तः सदा धीरो देवतायागतत्परः ।
सर्वाम्नायविशेषज्ञः कुशलो रसकर्मणि ।
एवं लक्षणसंयुक्तो रसविद्यागुरुर्भवेत् ॥ 4 ॥

रसशास्त्रशिष्यलक्षणम् –

गुरुभक्ताः सदाचाराः सत्यवन्तो दृढ़व्रताः ।
निरालस्याः स्वधर्मज्ञाः सदाऽज्ञापरिपालकाः ॥ 5 ॥
दम्भमात्सर्यनिर्मुक्ताः कुलाऽचारेषु दीक्षिताः ।
अत्यन्तसाधकाः शान्ता मन्त्राऽराधनतत्पराः ॥
इत्येवं लक्षणैर्युक्ताः शिष्याः स्युः सूतसिद्धये ॥ 6 ॥

रससहायकलक्षणम् –

सहायाः सोपमास्तत्र यथा शिष्यास्ततोऽधिकाः ।
कुलीनाः स्वामिभक्ताश्च कर्तव्या रसकर्मणि ॥ 7 ॥

रसशास्त्रसिद्धौ अग्राह्याः –

नास्तिका ये दुराचाराश्चुम्बका गुरुतोऽपरात् ।
विद्यां ग्रहीतुमिच्छन्ति चौर्यच्छद्मखलोत्सवात् ॥ 8 ॥
न तेषां सिध्यते किंचिन्मणिमन्त्रौषधादिकम् ।

कुर्वन्ति यदि मोहेन नाशयन्ति स्वकं धनम् ॥
इह लोके सुखं नास्ति परलोके तथैव च ॥ 9 ॥

गुरोर्रसविद्याग्रहणविधिः –

तस्माद्भक्तिबलादेव सन्तुष्यति यदा गुरुः ।
तदा शिष्येण सा ग्राह्यारसविद्याऽत्मसिद्धये ॥
हस्तमस्तकयोगेन वरं लब्ध्वा सुसाधयेत् ॥ 10 ॥

रसराजसाधनस्थलनिर्देशः –

आतंकरहिते देशे धर्मराज्ये मनोरमे ।
उमामहेश्वरोपेते समृद्धे नगरे शुभे ॥ 11 ॥
कर्तव्यं साधनं तत्र रसराजस्य धीमता ।

रसशालास्वरूपम् –

अत्यन्तोपवने रम्ये चतुर्द्वारोपशोभिते ॥ 12 ॥
तत्र शाला प्रकर्तव्या सुविस्तीर्णा मनोरमा ।
सम्यग्वातायनोपेता दिव्यचित्रैर्विचित्रिता ॥ 13 ॥

रसमण्डपनिर्माणनिर्देशः –

तत्समीपे समे दीप्ते कर्तव्यं रसमण्डपम् ।
अतिगुप्तं सुविस्तीर्णं कपाटार्गलशोभितम् ॥ 14 ॥
ध्वजच्छत्रवितानाद्यं पुष्पमालाऽविलम्बितम् ।
भेरीकाहलघण्टादिशृंगीनादविनादितम् ॥ 15 ॥
भूः समा तत्र कर्तव्या सुदृढ़ा दर्पणोपमा ।
तन्मध्ये वेदिका रम्या कर्तव्या लक्षणान्विता ॥ 16 ॥

रसलिंगनिर्माणम् –

निष्कत्रयं हेमपत्रं रसेन्द्रं नवनिष्ककम् ।
अम्लेन मर्दयेद्यामं तेन लिंगन्तु कारयेत् ॥ 17 ॥
दोलायन्त्रे सारनाले जम्बीरस्थं दिनं पचेत् ।

रसलिंगपूजनंतत्फलंच –

तल्लिंगं पूजयेत्तत्र सुशुभैरुपचारकैः ॥ 18 ॥
लिंगकोटिसहस्रस्य यत्फलं सम्यगर्चनात् ।
तत्फलं कोटिगुणितं रसलिंगार्चनाद् भवेत् ॥ 19 ॥

ब्रह्महत्यासहस्रणिगोहत्याश्चायुतानि हि ।
तत्क्षणाद्विलयं यान्ति रसलिंगस्य दर्शनात् ॥ 20 ॥
स्पर्शनात्प्राप्यते मुक्तिरिति सत्यं शिवोदितम् ॥ 21 ॥
आग्नेय्यां श्रीमघोरेण मन्त्रराजेन चार्चयेत् ।

रसलिंगध्यानम् –

अष्टादशभुजं शुभ्रं पंचवक्त्रं त्रिलोचनम् ।
प्रेतारूढं नीलकण्ठं रसलिंगं विचिन्तयेत् ॥ 22 ॥

रसांकुशाध्यानम् –

तस्योत्सङ्गे महादेवीमेकवक्त्रां चतुर्भुजाम् ।
अक्षमालांकुशं दक्षे वामे पाशाभयं शुभम् ॥
दधतीं तप्तहेमाभां पीतवस्त्रां विभावयेत् ॥ 23 ॥

रसांकुशामन्त्रम् –

"वाङ्मयी श्रीः कामराजशक्तिबीजं रसांकुशा-
यैः नमः समा द्वादशांशैव ज्ञैया विद्या रसांकुशा" ॥ 24 ॥

रसांकुशापूजाविधिः –

अनया पूजयेद्देवीं गन्धपुष्पाक्षतादिभिः ॥ 25 ॥
नन्दीभृङ्गीमहाकालकुलीरान्पूर्वदिक्क्रमात् ।
पूजयेन्नाममन्त्रैश्च प्रणवादिनमोन्तकैः ॥ 26 ॥
एवं नित्यार्चनं तत्र कर्तव्यं रससिद्धये ॥ 27 ॥

रसविद्यादीक्षाविधिः –

रसविद्या शिवेनोक्ता दातव्या साधकाय वै ।
यथोक्तेन विधानेन गुरुणा मुदितात्मना ॥ 28 ॥
सुमुहूर्ते सुनक्षत्रे चन्द्रतारावलान्विते ।
कलशं तोयसम्पूर्णं हेमरत्नफलैर्युतम् ॥ 29 ॥
स्थापयेद्रसलिंगाग्रे दिव्यवस्त्रेण वेष्टितम् ।
गन्धपुष्पाक्षतैर्धूपैर्नैवेद्यैश्च सुपूजयेत् ॥ 30 ॥
पूजान्ते हवनं कुर्याद्योनिकुण्डे सुलक्षणे ।
तिलाज्यैः पायसैः पुष्पैः शतपुष्पादिकैः पृथक् ॥ 31 ॥
अघोरेण रसांकुश्या होमान्ते शिष्यमाह्वयेत् ।
कालिनीशक्तिसंयुक्तं रससिद्धिपरायणम् ॥ 32 ॥

कालिनीस्त्री लक्षणम् –

यस्यास्तु कुंचिताः केशाः श्यामा या पद्मलोचना ।
सुरूपा तरुणी भिन्ना विस्तीर्णजघना शुभा ॥ 33 ॥
संकीर्णहृदया पीनस्तनभारेण नम्रिता ।
चुम्बनालिंगनस्पर्शकोमला मृदुभाषिणी ॥ 34 ॥
अश्वत्थपत्रसदृशयोनिदेशसुशोभिता ।
कृष्णपक्षे पुष्पवती सा नारी कालिनी स्मृता ॥ 35 ॥
रसबन्धे प्रयोगे च उत्तमा सा रसायने ।

कालिनीकरणविधिः –

तदभावे सुरूपा तु या काचित्तरुणांगना ॥ 36 ॥
तस्या देयं त्रिसप्ताहं गन्धकं घृतसंयुतम् ।
कर्षैककं प्रभाते तु सा भवेत्कालिनीसमा ॥ 37 ॥

शिष्यदीक्षाविधिः –

एवं शक्तियुतो योऽसौ दीक्षयेत्तं गुरूत्तमः ॥ 38 ॥
सुस्नातमभिषिंचेत् मन्त्रेण कलशोदकैः ।
अघोरामंकुशीं विद्यां दद्याच्छिष्याय सद्गुरुः ॥ 39 ॥
यथाशक्त्या सुशिष्येण दातव्या गुरुदक्षिणा ॥ 40 ॥
अथाज्ञया गुरोर्मन्त्रं लक्षं लक्षं पृथग्जपेत् ।
अनया पूजयेद्देवीमिमां विद्यां रसांकुशीम् ॥ 41 ॥
दशांश जुहुयात्कुण्डे त्रिकोणे हस्तमात्रके ।
जातिपुष्पं त्रिमध्वक्तं पूर्णान्ते कन्यकार्चनम् ॥ 42 ॥
कृत्वाथ प्रविशेच्छालां शुद्धां लिप्तां सवेदिकाम् ॥ 43 ॥

रससाधनाविधिः –

षट्कोणं मण्डलं तत्र सिन्दूरेण द्विहस्तकम् ।
वेदिकायां लिखेत्सम्यक् तद्बहिश्चाष्टपत्रकम् ॥ 44 ॥
कमलं चतुरस्त्रंच चतुर्द्वारैः सुशोभितम् ।
कर्णिकायां न्यसेत्खल्वं लोहजं स्वर्णलेखितम् ॥ 45 ॥
तन्मध्ये रसराजं तु पलानां शतमात्रकम् ।
पंचाशत्येचविंशद्वा पूजयेद्रसलिंगवत् ॥ 46 ॥
वज्रवैक्रान्तवज्राभ्रकान्तपाषाणटंकणम् ।
भूनागः शक्तयश्चैताः षट्कोणे पूजयेत्क्रमात् ॥ 47 ॥

गन्धतालककासीसशिलाकंकुष्ठाभूषणम् ।
राजावर्तो गैरिकंच ख्याता उपरसा अमी ॥ 48 ॥
पूज्या अष्टदलेष्वेते पूर्वादीशानुगंक्रमात् ॥ 49 ॥
रसकं विमला ताप्यं चपला तुत्थमंजनम् ।
हिंगुलं सस्यकंचैव ख्याता एते महारसाः ॥ 50 ॥
पूर्वादीशानपर्यन्तं पत्राग्रेषु प्रपूजयेत् ।
पूर्वद्वारे स्वर्णरौप्ये दक्षिणे ताम्रसीसके ॥ 51 ॥
पश्चिमे वंगकान्तौ च उत्तरे मुण्डतीक्ष्णके ।
सर्वमेतदघोरेण पूजयेदंकुशान्वितम् ॥ 52 ॥
बिडं कांजिकयन्त्राणि क्षारमृल्लवणानि च ।
कोष्ठी मूषा वंकनाली तुषांगारवनोपलाः ॥ 53 ॥
भस्त्रिका दण्डिकानैका शिलाखल्वान्युलूखलम् ।
स्वर्णकारोपकरणं समस्ततुलनानि च ॥ 54 ॥
मृत्काष्ठताम्रलोहोत्थपात्राणि विविधानि च ।
दिव्यौषधीनां वर्गाश्च रंजकस्नेहनानि च ॥ 55 ॥
एतानि द्वारबाह्ये तु मूलमन्त्रेण पूजयेत् ॥ 56 ॥

अथमूलमन्त्रः –

वांगमायां ह्रीं ततः क्षेंचक्षमश्च पंचाक्षरो मनुः ।
अनेन मूलमंत्रेण भैरवं तत्र पूजयेत् ॥ 57 ॥
सर्वेषां रससिद्धानां नाम संकीर्तयेत्तदा ॥ 58 ॥

रससिद्धनामानि–

व्यालाचार्यश्चन्द्रसेनः सुबुद्धिर्नरवाहनः ।
नागार्जुनो रत्नघोषः सुरानन्दो यशोधनः ॥ 59 ॥
इन्द्रधूमश्च माण्डव्यश्चर्मटी शूरसेनकः ।
आगमो नागबुद्धिश्च खण्डः कापालिको मतः ॥ 60 ॥
कामारिस्तान्त्रिकः शम्भुर्लंको लंपकशारदौ ।
वाणासुरो मुनिश्रेष्ठो गोविन्दः कपिलो बलिः ॥ 61 ॥
एते सर्वे तु सूतेन्द्रा रससिद्धा महाबलाः ।
चरन्ति सर्वलोकेषु नित्या भोगपरायणाः ॥ 62 ॥
सप्तविंशतिसंख्यका रससिद्धिप्रदायकाः ।
वन्द्याः पूज्याः प्रयत्नेन ततः कुर्याद्रसार्चनम् ॥ 63 ॥

रसार्चनविधिः –

हर्षयन्द्विजदेवानां तर्पयेदिष्टदेवताः ।
कुमारीयोगिनीयोगीश्वरान्मेलकसाधकान् ॥
तर्पयेत्पूजयेद्भक्त्या यथाशक्त्यनुसारतः ॥ 64 ॥
इत्येवं सर्वसम्भारयुक्तं कुर्याद्रसोत्सवम् ।
सर्वविघ्नप्रशान्तार्थं सर्वेप्सितफलप्रदम् ॥ 65 ॥

मन्त्रदीक्षाविनारसासिद्धिः –

अन्यथा यो विमूढात्मा मन्त्रदीक्षाक्रमाद्विना ।
कर्तुमिच्छति सूतस्य साधनं गुरुवर्जितः ॥ 66 ॥
नासौ सिद्धिमवाप्नोति यत्नकोटिशतैरपि ।
तस्मात्सर्वप्रयत्नेन शास्त्रोक्तां कारयेत्क्रियाम् ॥ 67 ॥
सम्यक्साधनसोद्यमा गुरुयुता राजाज्ञयाऽलंकृता
नानाकर्मपराङ्मुखा रसपराश्चाढ्या जनैश्चार्च्यिताः ।
मात्रायन्त्रसुपाककर्मकुशलाः सर्वौषधे कोविदाः ।
तेषां सिध्यति नान्यथा विधिबलाच्छ्रीपारदः ॥ 68 ॥

रसशास्त्रदानप्रयोजनम् –

रसशास्त्रं प्रदातव्यं विप्राणां धर्महेतवे ।
राज्ञे वैश्याय वृत्यर्थं दास्यार्थीमितरस्य च ॥ 69 ॥

रससिद्धौसर्वसिद्धिः –

गुरौ तुष्टे शिवस्तुष्येच्छिवे तुष्टे रसस्तथा ।
रसे तुष्टे क्रियाः सर्वाः सिध्यन्त्येव न संशयः ॥ 70 ॥

रसविद्यायाः गोप्यत्वम् –

रसविद्या दृढं गोप्या मातुर्गुह्यमिव ध्रुवम् ।
भवेद्वीर्यवती गुप्ता निर्वीर्या च प्रकाशनात् ॥ 71 ॥
रोगिणा बहुभिर्ज्ञातं भवेन्निर्वीर्यमौषधम् ।
न रोगिविदितं कार्यं बहुभिर्विदितं तथा ॥ 72 ॥

इति श्री वैद्यपतिसिंहगुप्तस्यसूनोर्वाग्भटाचार्यस्य कृतौ रसरत्नसमुच्चये शिष्योपनयनं नाम षष्ठोऽध्यायः ।

# RASA RATNA SAMUCCAYA

## SIXTH CHAPTER

## ENGLISH TRANSLATION

After critically studying all the *Rasa Śāstra* texts in their proper sequence the subject matter of *Rasa Śāstra* is being put forward for the benefit of those who are actively engaged in *Rasa Karmas*. (1).

There is no scripture without a sequence (tradition) and no sequence without the scripture. Thus, only those who know the scripture in its perfect sequence are able to achieve *siddhi* (success). (2)

*Qualities of a Teacher of Rasa-Śāstra :*

*Rasa Vidyā Guru* (a teacher of mercurial science) should possess the following qualities. He (the teacher) should possess all the knowledge, expertise in various processes and a thorough knowledge of all the literature on *Rasa ;* he shall have achieved success in many sacred texts/hymns, shall always be very courageous, shall have a highly distinguished personality and an unswerving mind ; shall be very affectionate of Lord Śiva and a thorough devotee of Goddess Pārvatī, and have firm belief in all the gods and oblations. He shall also have a specialised knowledge of all sacred traditions and texts and shall be very competent in performing mercurial operations. (3 and 4).

*Qualities of a Disciple :*

A disciple possessing the following qualities only is expected to achieve success in mercurial operations. He shall be highly devoted to the teachers, possess good moral conduct shall always be truthful, persevering, energetic, sincere/duty conscious, obedient, free from arrogance and malice, dedicated to the respective traditions, very efficient, peace loving and shall regularly practise the sacred texts or prayers. (6).

*Qualities of an Assistant :*

The assistants engaged in the performance of various *Rasa Karmas* shall be better than the disciples. They shall be laborious and perseverant, shall come from respectable families and be totally devoted to their masters. (7)

*Disqualifications of a Disciple :*

For persons who are disbeliever/infidel, who possess corrupt manner and conduct, are selfish/greedy, desirous of acquiring knowledge from persons other than *gurus* by trickery, deception, mischievious methods and insolence, even a little success in gems, hymns or medicines is impossible. And if through ignorance such persons indulge in the practice of *Rasa Karma* they are likely to waste their wealth and will not get happiness either in this world or in the other world. (8 and 9).

Hence, it is only when the teacher is pleased with the devotion of the disciple, the latter should start learning *Rasa Vidyā* (knowledge of mercurial science) for his own success, as the knowledge received with folded hands and lowered/bowed head can only prove successful and produce best results. (10)

*Description of Rasa Śālā :*

The intelligent man should perform mercurial operations in such a place which is auspicious, pleasant, free from fear, associated with temples of goddess Pārvatī and lord Śiva, and located by the side of a prosperous and well developed city. There, in the charming vicinity of a planted garden one should construct a spacious building which should have four gates and good ventilation. It should be decorated with various kinds of charming, attractive and beautiful paintings and pictures. (11-13)

Near that building a *Rasa Maṇḍapa* should be contructed on plain and open land. It should be well protected, very spacious and have strong doors with perfect bolting facilities. It should be decorated with flag, parasol, canopy, and garlands made of flowers. Its walls should reproduce the sounds of kettle drum, large drum,bells and horn-shaped musical instruments. Its floor should be plain, strong, shining and smooth like a mirror. In the centre of this *Maṇḍapa* a very beautiful *Vedi* (a quadrangular alter) should be built with all its specifications. (14-16).

*Formation of Rasa Liṅga :*

Nine *māṣakas* (appr. 9g) of gold leaves are mixed with twentyseven *māṣakas* of purified mercury and the mixture is ground well with any acidic liquid for one yama (to a paste). A *liṅga* (epithet of Lord Śiva) is prepared from this paste. It is closed in *jambīraphala* (citrous fruit) and subjected to *svedana* (heating) by boiling in *āranāla* (sour gruel) through *dolāyantra*. This *Rasaliṅga* should be worshipped in the *Maṇḍapa* using all the auspicious articles of adorations. (17 and 18).

*Benefits of Worship of Rasaliṅga :*

Whatever benefits are expected to be acquired by the worship of crores of *Śiva linga* can also be acquired, million times more, by the worship of one such *Rasaliṅga*. The sins caused by murder of thousands of *brahmanas* and millions of cows would disappear by the mere sight of this *Rasaliṅga*, and by a touch of this *liṅga* people get emancipation. This truth is said by Lord Siva himself. (19-21)

*Procedure for Worship :*

This *Rasaliṅga* may be placed on the south-eastern direction of the *Vedi* (alter) and worshipped by chanting the *Śrī Aghoramantra* (the superior sacred hymn).

*Contemplation of Rasaliṅga :*

*Rasaliṅga* may be imagined to be having white colour, eighteen arms, five faces, three eyes, blue neck and riding on a corpse. It may further be imagined that goddess Pārvatī with one face, four arms, holding garland of *Rudrākṣa* and an *Aṅkuśa* in her right hand and *Pāśa* and *Abhaya* in her left hand is sitting on his (liṅga's) lap. She looks bright as red hot gold and dressed in yellow clothes. (22 and 23).

*Hymn for Adoration of the Goddess :*

*Vaṅgmayī Śrīḥ Kāmarāja Śakti Bījam Rasāṅkuśāyai Namaḥ*—this hymn of twelve letters is known as *Rasāṅkuśā Vidyā*. Goddess Pārvatī should be worshipped with offering of adoration materials like *candana*, rice, flowers and chanting the above hymn. Nandī, Bhṛṅgī, Mahākāla and Kulīr, the followers of Lord Śiva, may be placed on east, west, north and south directions of the *Vedi*, respectively and may be worshipped by chanting their names and hymns starting from *Praṇava* and ending with *Namaḥ*. In this way adoration should be performed daily in the *Rasa Maṇḍapa* for achieving successs in *rasa karmas* (mercurial operations). (24-27).

*Induction Ceremony :*

The knowledge of mercurial science which was initially spoken by Lord Śiva should be imparted to an efficient and skilled person by a teacher with a joyous temperament, in accordance with the method described below.

A *kalaśa* (pot) full of water and containing gold, gems, and coconut fruit, shall be wrapped with a red silken cloth and placed in front of the *Rasaliṅga* at an auspicious moment when the moon, the stars and other heavenly gods are favourable. It (the *liṅga*) should then be worshipped by offereing sandalwood paste, flowers, seeds, rice-grains, and other eatable offerings. At the end of worship *hāvana* (an oblation with fire) should be performed with sesame mixed with ghee, *pāyas* (a kind of milk preparation), flowers, and *śatapuṣpa*, separately in a *Yonikuṇḍa* (a mysterious square pit) with all the speficications. At the end of the *homa* (oblation offering) the disciple in association with *Kālinī* and *Śakti* (women) and engaged in *Rasa Siddhi* (mercurial operations) may be inducted by *Aghoramantra* and *Rasāṅkuśamantra*. (28-32)

*Characteristics of Kalini Woman :*

A woman whose hairs are curly, who is having śyāma (handsome) complexion, whose eyes are like a lotus, who is very beautiful, young and par-excellence, whose buttocks are wide, thick and attractive, whose chest region is narrow, who is

slightly bent forward with the weight of her bosom, who is very sweet in kissing and embracing and smooth in touch, and soft spoken, whose genital region is like an *Asvattha patra* (leaf of *Ficus religiosa),* who menstruates in the dark half of the lunar month is known as *Kālinī* and is considered the best for assistance in *Rasa Bandhana, Rasa Prayoga* (mercurial ingestion/internal administration) and *Rasāyana Karma.* In the absence of such a woman any young and beautiful woman may be made similar to *Kālinī* woman by treating (feeding) her with one *karṣa* (12g) of sulphur mixed with ghee daily in the morning for three weeks. (33-37).

*Method of Induction of Disciple :*

One who is thus associated with such a *śakti* (woman) is suitable for initiation by the good teacher. In this process, he should first take bath and then be sprinkled with water from the *kalaśa* (pot) with the chanting of hymns. The disciple then shall be administered the *Aghorā* and *Aṅkuśa Vidyā (Mantra)* by the pious teacher. (38-39).

*Duties of the Disciple :*

After induction, an ideal disciple must offer the sacrificial fee (remuneration) to his preceptor as according to his ability. Thereafter the disciple with the permission of his preceptor should utter each hymn one lakh times separately. The goddess *Rasāṅkuśī* should then be worshipped by *Rasāṅkuśī* hymn. The worship should be followed by the performance of one tenth *hāvana* (invocation/ offering an oblation with fire) in an elevated triangular pit, having depth and width of one cubit each, using *jātīpuṣpa* mixed with *trimadhu.* And at the end of this invocation he should worship a *kanyā* (virgin). After all these religious ceremonies the disciple shall enter the well cleaned and well painted *Rasa Śalā* containing a *vedikā.* (40-43).

On this *vedikā* (elevated platform), one *Maṇḍala* (circle) having the dimension of two *hasta* (cubit) and six *aṅgulas* (finger), may be drawn by vermilion. In the outer side of this circle shall be drawn a lotus with eight petals. It should have four gates and four corners, and a *khalva* (mortar) made of iron and painted with gold is placed in the centre of this lotus. Mercury may be taken inside the *khalva* in hundred, fifty, or twenty five *palas* quantity and worshipped like *Rasaliṅga.* (44-46).

*Vajra* (diamond), *vaikrānta* (tourmaline),*Vajrābhraka* (black mica),*kāntapāṣāṇa* (magnetic iron ore), *ṭaṅkaṇa* (borax) and *bhūnāga* (earth worms), considered as the *śaktis* (potentiating agents) for mercury, should be placed in all the six corners and adored. *Gandhaka, tālaka, kāsisa, manaḥśilā, kaṅkuṣṭha, sindūra, rājāvarta* and *gairika,* known as *uparasas,* should be placed one each on the eight petals of the lotus starting from East and moving to North Eastern directions, respectively and worshipped. *Rasaka, vimala, tāpya, capala, tuttha, añjana, hiṅgula and sasyaka* known as *mahārasas* should be placed on the tip of the petals of the lotus starting from East and moving to North Eastern direction respectively, and worshipped. Also should be placed *svarṇa* and *raupya* in the Eastern gate, *tāmra and sīsaka* in the Southern gate, *vaṅga and kānta* in the Western gate and *muṇḍa and tikṣṇa* in the

Northern gate. All these in association with *aṅkuśa* should be worshipped by *aghora mantra.* (47-52)

*Method for Worship of Appliances and Materials :*

Further, *viḍa(jarana dravyas),kāñjika* (acidic liquids), different apparatuses, alkalies, various types of soils, salts, furnaces, crucibles, *vaṅkanāla* (bent tubes), husk, burning charcoals, *vanopalas* (dung cakes of forest origin), *bhastrikās* (bellows), different kinds of rods, smooth stones, mortar, *ulūkhalas* (stone crushers), apparatuses of goldsmiths, all kinds of balances, various types of pots made of mud, wood, copper and iron, *divya* group of medicines, *rañjaka and snehana* group of drugs, all kept outside *vedikā* gate may be worshipped by *Mūla Mantra— Vāṅgmayām hrim Tataḥ kṣemca kṣmaśca pañcākṣaro manuḥ.* Lord Bhairava should also be worshipped by this *mūla mantra* and then the names of all the *Rasa Siddhas* should be recited. (53-58)

*Names of Rasa-Siddhas :*

Vyālācāya, Candrasena, Subuddhi, Naravāhana, Nāgārjuna, Ratnaghoṣa, Surānanda, Yaśodhana, Indradhūma, Māṇḍavya, Carmaṭī, Śūrasenaka, Āgama, Ṇāgabuddhi, Khaṇḍa, Kāpālika, Kāmāri, Tāntrika, Sambhu, Laṅka, Lampaka, Śārada, Bānāsura, Muniśreṣṭha, Govinda, Kapila and Bali—all these are very powerful and also expert in the mercurial operations and always move throughout the world enjoying all physical pleasures. They are twenty seven in number and capable of imparting *Rasa Siddhi* (succeess in mercurial operations). They are very respectable physicians and hence should be worshipped with care before the worship of mercury is undertaken. After pleasing the *brāhmaṇs* and the gods one should satisfy his own favourite god. Further, *kumārī, yoginī, yogīśvara, rasamelaka and rasasādhakas* should also be satisfied and worshipped with devotion according to one's capacity. In this way a festival of mercurial operations should be celebrated after collecting all the necessary requirements for the removal of all obstacles and for achieving all the desired results. Otherwise one who is unwise and wishes to perform mercurial operations without a preceptor, without following the proper procedure of induction, and without the scriptures is not likely to achieve success inspite of his hard and repeated best efforts. Hence one should perform the mercurial operations/processings strictly following the procedures mentioned in the scriptures and taking care of all necessary precautions. (59-67).

*Who can achieve Rasa Siddhi :*

It is claimed in the scripture that the success in mercurial operations is achieved only by those who have all the necessary appliances and materials at their command, who are laborious, are always in communication with their teachers, have obtained the permission of the king (government), are not engaged in other works but always doing *Rasakarmas,* possess sufficient wealth, are requested by others, possess expertise in weights, measures, doses, handling equipments, heating devices and can

identify all drugs. The scripture further mentions that it is (success) possible only with the blessings of *Vidhi* (creator/fate/destiny), and not otherwise. (68).

*Persons fit for acquiring the Rasavidyā :*

*Rasa Śāstra* (knowledge of mercurial science) should be imparted to *brāhmaṇas* for religious purposes, to the rulers and to the *vaiśyas* for earning money and to other persons just to serve people. (69).

It is also claimed that when a teacher is satisfied Lord Śiva is also satisfied and when Lord Śiva is satisfied mercury also becomes satisfied and when mercury is satisfied all the *karmas* relating to *Dehasiddhi* and *Lohasiddhi* become successful. There is no doubt obout this (70).

*Secrecy of Rasa Vidyā :*

*Rasa Vidyā* should definitely be kept concealed by all means just like the secret genital of the mother. It remains potent so long as it is kept secret and if made public becomes powerless/useless just like the medicine which proves useless or ineffective if known by the patients and by many others. Hence the physician should not do any such thing by which the patients and others could learn about the medicine. (71-72).

# RASA RATNA SAMUCCAYA

## NOTES ON SIXTH CHAPTER

The sixth chapter of *Rasa Ratna Samuccaya* is devoted to the description of the method of inducting the disciples *(śisyopanayana)*, without which success in mercurial operations/processings is not at all possible. Vāgbhaṭa, the author of this text, has mentioned in the beginning of this chapter that this subject is not found described in earlier texts in such a systematic manner, all at one place, and hence this is described by him after critically studying all the available literature on *Rasa Śāstra*. The author strongly feels that without knowing the literature in its proper sequence none is expected to achieve complete success or expertise in any branch of learning, specially when that is a practical science like *Rasa Śāstra*.

According to the view of the author three persons are considered most essential for achieving success in any operation. These are the teacher, the disciple and the attendant.

Thus, in the beginning of the chapter the author has given a very good account of the qualities and the characteristics of these personalities starting with *Ācārya* (holy preceptor/teacher) and going down to the disciple and the attendant.

*Qualities of Rasācārya (teacher of mercurial science) :*

According to this text the *Rasācārya* (teacher of *Rasa Śāstra)* should be a scholar of high repute (jñānavān), highly competent in practical working *(dakṣa)*, well versed in mercurial science *(Rasa Śāstra Viśārada)*,well proficient in sacred taxts *(Mantra Siddha)*, very courageous *(Mahā Vīra)* very firm *(Niścala)* affectionate of lord Śiva *(Śiva vatsala)*, devotee to Goddess *(Devī bhakta)*, never perplexing/always composed *(Sada dhīra)*, engaged in prayers of the gods and performing oblations *(Devatāyāga tatparaḥ)*, specialised in all sacred traditional usages *(Sarvāmnāya Viśeṣajña)* and very proficient in performing mercurial operations/processes *(Rasa karma Kuśala)*.

Of the earlier texts certain qualities of *Rasācārya* have been found described only in *Rasa Ratnākara.*

*Qualities of Śiṣya (disciple) :*

Just like those of *Ācārya*, the author has stated the qualities expected of a disciple. He should be devoted to the teacher *(Gurubhakta)*, possess good manners and conduct *(Sadācārī)*, truth speaking *(Satyavaktā)*, firm in action and activities

*(Dṛdha Vrata)*, free from idleness *(Nirālasya)*, aware of his duty *(svadharmajña)*, obedient *(Sadājñāparipālaka)*, free from arrogance/pride and malice *(Dambhamātsarya nirmukta)*, dedicated to family traditions *(Kulācāreṣu dīkṣita)* calm and quiet *(Śānta)*, engaged in the practice of chanting of sacred hymns *(Mantrārādhana Tatparaḥ)*.

Of the earlier texts the qualities of a disciple have been found described in *Rasārṇava and Rasa Ratnākara* both but the description in *Rasa Ratnākara* is similar to that in *Rasa Ratna Samuccaya ;* but in the description of *Rasārṇava* certain other qualities are also found added. The disciple, according to *Rasārṇava*, should be affectionate of teacher *(Guruvatsala)*, familiar with the customs of time and place *(Deśakālakriyābhijña)*, associated with kindness and charity *(Dayā dākṣiṇya saṁyuta)*, devoid of confusion and greed *(Lobha māyā vinirmukta)*, proficient in the practice of enchanting hymns *(Mantrānuṣṭhānatatpara)*, accomplished with the best bodily signs *(sāmudralakṣaṇopeta)*, serious *(Gambhīra)*, truthful *(Satyavādin)*, always engaged in the worship of gods and other heavenly personalities *(Sadā devāgniyoginīcakra pūjārata)*, humble *(Vinīta)*, firm in religious practices *(Dṛdhavrata)*, and learned in secret traditions *(Tantrajña)*.

A true disciple, therefore, is required to possess a number of qualities as mentioned above. The disqualities of a disciple are also found mentioned in *Rasa Ratna Samuccaya*. He shall not be unbeliever in gods or other religious rituals *(Nāstika)*, with bad habits manners and conducts *(Durācāra)*, selfish or greedy *(Cumbaka or lubdha)* desirous of obtaining the knowledge from persons other than the preceptor *(Gurutoparāt Vidyām Grahītumicchantaḥ)*, with disguise, mischievious and insolent*(Caurya-Chadmakhalotsavāta)*. The same kind of description is available in *Rasa Ratnākara* also. It is further mentioned in this context that success is far off for those who want to receive the knowledge by the above unfair method. And if these persons indulge in the practice of *rasa karma* (mercurial operations) they are likely to waste their time and money, and they neither get anything in this world nor in other world. Hence it is advised by the author that the disciple should first satisfy his spiritual teacher by devotion and then start learning *rasa vidyā* for his own success, as only the knowledge received with folded hands and bent head is claimed to yield the desired results.

*Qualities of Sahāyakas (Attendants) :*

The attendants *(sahāyakas)* should be laborious, persevering, obedient, faithful and dedicated to their masters. They should possess good family background and qualities even better than those of the disciples. Only such assistants are considered fit for appointment as attendants for performing mercurial operations.

*Site, Place, Building and Time for Mercurial Operations :*

After describing the qualities of the teacher, the disciple and the attendant *(i.e.* one who imparts the knowledge, the one who receives the knowledge and the one who assists them) and also how the knowledge should be received, the author has mentioned something about the site, place, building and time, that is, the area in

which the site should be selected for constructing the buildings, how the building should be constructed, what shall be its specifications and interior structures, and how the work relating to mercurial operations should be started. All these are being discussed in detail in the following lines.

*Site :*

The site for constructing the *Rasa Śāla* building should be free from all kinds of fears. It should be auspicious, charming, pleasant and associated with temples of lord Śiva and Goddess Pārvatī. It should be by the side of a prosperous and well developed city.

*Construction of the Building for Rasa Śālā :*

On such a site a beautiful, well ventilated and very spacious building should be constructed. It should have four gates, and a very lovely garden outside. In the interior it should be decorated with attractive, charming and informative paintings and charts.

*Construction of Rasa Maṇḍapa :*

Very near to this building another building known as *Rasa Maṇḍapa* should also be constructed in an open space which is exposed to sun-light from all sides. It should be well protected, very spacious and fitted with very strong doors with perfect bolting facilities. It should also be decorated with flag, parasole, canopy and garlands made of flowers. Its walls should reproduce the sounds of kettledrums, large drums, bells and horn shaped musical instruments. Its floor should be very strong, plain, shining, and smooth like a mirror. A very beautiful *vedi* (an elevated platform) with all its specifications should be constructed install the *Rasaliṅga* in its centre to for worship.

*Method of Rasaliṅga Formation :*

Nine *māṣakas* (about 9 g) of gold leaves is mixed with twenty seven *māṣakas* (27g) of purified mercury. The mix is ground with any acidic liquid for one yāma (3 hours)to prepare a paste. This paste is converted into a *liṅga* form (penis shaped idol of lord Śiva). This is closed in *Jambīra phala* (Citrus fruit) and subjected to *svedana* (heating) by boilding it in *Āranāla* (a fermented acidic liquid) through *dolāyantra* method. The product is then installed on the *vedikā* in South-Eastern direction of *Rasa Maṇḍapa* and worshipped with various auspicious articles of adoration, and enchanting the *Śrī Aghora Mantra.*

*Benefits of Worship of Rasa Liṅga :*

The author also mentioned about the benefits of the worship of *Rasaliṅga viz.*, whatever benefits are achieved by the worship of crores of *Śivaliṅga* can all be

achieved, million times multiplied by the worship of one such *Rasaliṅga*. It is further said in this context that the sins caused by the murder of thousands of brāhmins and millions of cows could be annuled by the mere sight of this *Rasaliṅga* and if one happens to touch it he definitely gets emancipated.

*Contemplation of Rasaliṅga :*

The *Rasaliṅga* may be visualised as Lord Śiva, who is having white colour, eighteen arms, five faces, three eyes, blue neck, riding on a corpse and having goddess Pārvatī in his lap. The goddess may be imagined as having one face, four arms, holding *rudrākṣa* garland and *aṅkuśa* in her right hands and *pāśa and abhaya* in her left hands, shining bright as red hot gold and dressed in yellow clothes. This goddess may be worshipped with *candana, akṣata* and flowers enchanting *Rasāṅkuśa Vidyā*.

After installation and worship of *Rasaliṅga*, Nandī, Bhṛṅgī, Mahākāla and Kulīra, the followers of lord Śiva may also be installed in East, West, North and South directions, respectively of this *Vedi* and be worshipped by chanting their names and hymns starting from *Praṇava* and ending with *Namaḥ*. In this way the worship should be performed daily in the *Rasa Maṇḍapa* for achieving success *in Rasa Karmas*.

*Method of Initiation of the Disciple :*

After worshipping the *Rasaliṅga* and followers of lord Śiva in the *Rasa Maṇḍapa* a disciple, who is willing to dedicate himself to the practice of mercurial operations, shall take his bath and shall be sprinkled with *kalaśa* water with chanting of hymns. He then, in association with *Kālinī or Śakti* women shall be initiated by the spiritual teacher, who is cheerful and holy, and who happens to have performed specific sacrificial ceremonies in *Yoni Kuṇḍa* (a mysterious square pit) by offering sesame seed mixed with invocation materials like ghee, *pāyas, śatapuṣpa*, flowers, etc. with *Aghora Mantra and Rasankusa Mantra*.

*Duty of the disciple :*

Having been initiated the disciple shall offer a suitable *dakṣinā* (sacrificial fee/remuneration) to his spiritual teacher as according to his ability and then obtain the permission from his teacher for uttering each hymn separately for one lac times to gain perfection. It should be followed with one-tenth part *hāvana* (invocation) with *Jātīpuśpa* mixed with *Trimadhu* in a triangular *vedi* and in the end a *Kanyā* (virgin) shall be worshipped.

*Prerequisits of Mercurial Operations :*

In this way when the disciple is initiated by the spiritual teacher and has completed all the aforesaid religious requisits he should enter the well cleaned and well prepared *Rasa Śālā* containing a *Vedikā*. A *maṇḍala* (circle) of specific

dimension should be drawn on this *Vedikā* by vermilion. Outside this circle a lotus containing eight petals should be drawn in such a way that it may give the impression that it has four gates and four corners. In the centre of this circle a mortar made of iron and painted with gold may be placed. Mercury to be treated should be taken in it in hundred, fifty, or twenty five *palas* quantity and should be worshipped like *Rasaliṅga* keeping various drugs of different groups in different places of this circle and the lotus. The *Śaktis* (Vajra, Vaikrānta, Vajrābhra, Kānta pāṣāṇa, Ṭaṅkaṇa and Bhūnāga) of mercury should be placed one each on the six corners and adored. The *Uparasas* (Gandha, Tālaka, Kāsīsa, Śilā, Kaṅkuṣṭha, Sindūra, Rājāvarta and Gairika) should also be placed one each on the eight petals of the lotus starting from East to North Eastern direction and worshipped. The *Mahārasas* (Rasaka, Vimala, Tāpya, Capala, Tuttha, Añjana, Hiṅgula and Saśyaka) should be placed one each on the tips of the petals of lotus starting from East to North Eastern direction and worshipped. The metals may be placed on the gates such as Suvarṇa and Rajata on the eastern gate, Tāmra and Śīsaka on the southern gate, Vaṅga and Kānta on the western gate and Muṇḍa and Tikṣṇa on northern gate and worshipped.

Outside the gate of the *Vedikā* the other drugs and equipments should be placed and worshipped with *Mūla Mantra*. Lord Bhairava should also be worshipped with *Mūla Mantra*. Then the name of all the *Rasa-siddhas* (holy scholars of mercurial science) who are twenty seven in number, very powerful, highly expert in this science, move throughout the world enjoying all physical pleasures and capable of attributing all *siddhis* (supernatural powers) may be recited and worshipped along with Brāhmiṇs, gods and other concerned spiritual personalities.

This religious festival is considered very essential for removal of all kinds of obstacles and for achieving all the desired objectives and success. Otherwise (without following these procedures) if any person wants to perform mercurial operations of any type he is not likely to achieve success inspite of very hard and repeated efforts.

*Necessary Requirement for Achieving Rasa Siddhi :*

Success in *Rasa Karmas* is possible for only those who are accomplished with all the necessary appliances, apparatuses and materials, possess high perseverance, are associated with teachers, authorised by the King (government), not engaged in other works but totally dedicated to *rasa karmas*, possess sufficient wealth, requested by others, experts in weight, measures, dose schedules, well versed in handling equipments and heating devices and proficient in identification of drugs. Only such persons are considered capable of achieving success in mercurial operations provided their luck favours, and not otherwise.

In the end it is again mentioned that lord Śiva becomes pleased when the teacher is satisfied with the behaviour and conduct of the disciple and when lord Siva is pleased mercury becomes indifferent to anything else. And mercury being indifferent to anything else, all the effects of mercury concerning *Dehasiddhi* and *Lohasiddhi* can be successfully achieved. This means that satisfaction of *Guru* (teacher), Maheśvara and its followers is essential for obtaining complete success in mercurial operations.

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Supplement

# RASA RATNA SAMUCCAYA

(Continued)

Seventh Chapter

Sanskrit Text

English Translation

Notes

# अथ सप्तमोऽध्यायः

## रसशालाप्रकरणनिरूपणीयम्

रसशाला प्रकरणम्

रसशाला योग्यस्थल निर्देशः

रसशालां प्रकुर्वीत सर्वबाधाविवर्जिते ।
सर्वौषधिमये देशे रम्ये कूपसमन्विते ॥ 1 ॥
यक्षत्र्यक्षसहस्राक्षदिग्विभागे सुशोभने ।

रसशालास्वरूपम्

नानोपकरणोपेतां प्राकारेण सुशोभिताम् ॥ 2 ॥

दिग्विभागानुसार शालाकर्मविभागः

शालायाः पूर्वदिग्भागे स्थापयेद्रसभैरवम् ।
वह्निकर्माणि चाग्नेये याम्ये पाषाणकर्म च ॥ 3 ॥
नैऋत्ये शस्त्रकर्माणि वारुणे क्षालनादिकम् ।
शोषणं वायुकोणे च वेधकर्मोत्तरे तथा ॥ 4 ॥
स्थापनं सिद्धवस्तूनां प्रकुर्यादीशकोणके ।

शालायां संग्राह्योपकरणानां निर्देशः

पदार्थसंग्रहः कार्यो रससाधनहेतुकः ॥ 5 ॥
सत्त्वपातनकोष्ठींच सुराकोष्ठीं सुशोभनाम् ।
भूमिकोष्ठीं चलत्कोष्ठीं जलद्रोण्योऽप्यनेकशः ॥ 6 ॥
भस्त्रिकायुगलं तद्वन्नलिके वंशलोहयोः ।
स्वर्णयोघोषशुल्वाश्मकुण्ड्यश्चर्मकृतास्तथा ॥ 7 ॥
करणानि विचित्राणि द्रव्याण्यपि समाहरेत् ॥ 8 ॥
कण्डणी पेषणी खल्वा द्रोणीरूपाश्च वर्तुलाः ।
आयसास्तप्तखल्वाश्च मर्दकाश्च तथाविधाः ॥ 9 ॥
सूक्ष्मच्छिद्रसहस्राढ्या द्रव्यगालनहेतवे ।
चालनी च कटत्राणि शलाका हि च कुण्डली ॥ 10 ॥

मूषामृत्तुषकार्पासवनोपलकपिष्टकम् ।
त्रिविधं भेषजं धातुजीवमूलमयं तथा ॥ 11 ॥
शिखित्रा गोवरंचैव शर्करा च सितोपला ।
काचायोमृद्वराटानां कूपिका चषकाणि च ॥ 12 ॥
शूर्पादिवेणुपात्राणि क्षुद्रक्षिप्राश्च शङ्खिकाः ।
क्षुरप्राश्च तथा पाक्यो यच्चान्यत्तत्र युज्यते ॥
पालिका कर्णिका चैव शाकच्छेदनशस्त्रिकाः ॥ 13 ॥

चालनीप्रकाराः स्वरूपं च

चालनी त्रिविधा प्रोक्ता तत्स्वरूपं च कथ्यते ।
वैणवीभिः शलाकाभिर्निर्मिता ग्रथिता गुणैः ॥
कीर्तिता सा सदास्थूलद्रव्याणां गालने हिता ॥ 14 ॥
चूर्णचालनहेतोश्च चालन्यन्यापि वंशजा ॥ 15 ॥
कर्णिकारस्य शाल्मल्या हरिजातस्य कम्बया ।
चतुरंगुलविस्तारयुक्तया निर्मिता शुभा ॥
कुण्डल्यरत्निविस्तारा छागचर्माभिवेष्टिता ॥ 16 ॥
वाजिबालाम्बरानद्धतला चालनिकाऽपरा ।
तया प्रचालनं कुर्याद्धतुं सूक्ष्मतरं रजः ॥ 17 ॥

अंगारपर्यायाः

शिखित्रा पावकोच्छिष्टा अंगारा कोकिला मताः ।
कोकिलाश्चेतिअंगारा निर्वाणाः पयसा विना ॥ 18 ॥

छगणपर्यायाः

पिष्टकं छगणं छाणमुपलंचोत्पलं तथा ।
गिरिण्डोपलसाठी च संशुष्कच्छगणाभिधाः ॥ 19 ॥

कूपिका नामानि

कूपिका कुपिका सिद्धा गोला चैव गिरिण्डिका ॥ 20 ॥

चषकनामानि

चषकं च कटोरी च वाटिका खारिका तथा ।
कंचोली ग्राहिका चेति नामान्येकार्थकानि हि ॥ 21 ॥

शालाकार्यसम्पादन विधिः

शालासम्मार्जनार्थीहि रसपाकान्तकर्म यत् ।
तत्रोपयोगि यच्चान्यत्तत्सर्वं परविद्यया ॥ 22 ॥

श्रीरसांकुशया सर्वं मन्त्रयित्वा समर्चयेत् ।
अन्यथा तद्गतं तेजः परिगृह्णन्ति भैरवाः ॥ 23 ॥

शालावैद्यगुणाः

रससञ्चिन्तका वैद्या निघण्टुज्ञाश्च वार्तिकाः ।
सर्वदेशजभाषाज्ञाः संग्रह्यास्तेऽपि साधकैः ॥ 24 ॥

रसपाकान्ते अघोरमन्त्रजापनिर्देशः

रसपाकावसानं हि सदाऽघोरंच जापयेत् ॥ 25 ॥

परिचारकगुणाः

सोद्यमाः शुचयः शूरा बलिष्ठाः परिचारकाः ॥ 26 ॥

रसवैद्यगुणाः

धर्मिष्ठः सत्यवाग्विद्वान् शिवकेशवपूजकः ।
सदयः पद्महस्तश्च संयोज्यो रसवैद्यके ॥ 27 ॥

अमृतहस्तलक्षणानि

पताकाकुम्भपाथोजमत्स्यचापांकपाणिकः ।
अनामाधःस्थरेखांकः स स्यादमृतहस्तवान् ॥ 28 ॥

दग्धहस्तलक्षणानि

अदेशिकः कृपामुक्तो लुब्धो गुरुविवर्जितः ।
कृष्णरेखाकरो वैद्यो दग्धहस्तः स उच्यते ॥ 29 ॥

निधिसाधकगुणाः

भूतनिग्रहमन्त्रज्ञास्ते योज्या निधिसाधने ॥ 30 ॥

बलिसाधकगुणाः

बलिष्ठाः सत्यवन्तश्च रक्ताक्षाः कृष्णविग्रहाः ।
भूतत्रासनविज्ञाश्च ते योज्या बलिसाधने ॥ 31 ॥

रसायनसाधकगुणाः

निर्लोभाः सत्यवक्तारो देवब्राह्मणपूजकाः ।
यमिनः पथ्यभोक्तारो योजनीया रसायने ॥ 32 ॥

धातुवादेनियोज्यपुरुषगुणाः

धनवन्तो वदान्याश्च सर्वोपस्करसंयुताः ।
गुरुवाक्यरता नित्यं धातुवादेषु ते शुभाः ॥ 33 ॥

भेषजाहरणे नियोज्यपुरुषगुणाः

तत्तदौषधनामज्ञाः शुचयो वंचनोज्झिताः ।
नानाविषयभाषाज्ञास्ते मता भेषजाहृतौ ॥ 34 ॥

केषां रसः सिद्धयति

शुचीनां सत्यवाक्यानामास्तिकानां मनस्विनाम् ।
सन्देहोज्झितचित्तानां रसः सिद्धयति सर्वदा ॥ 35 ॥

रसस्य महारसत्व निर्देशः

दशाष्टक्रियया सिद्धो रसोऽसौ साधकोत्तमः ।
महारसोऽयमित्युक्त्वा युंजात्सर्वत्र तं रसम् ॥ 36 ॥

रससिद्धगुणाः

रससिद्धो भवेन्मर्त्यो दाता भोक्ता न याचकः ।
जरामुक्तो जगत्पूज्यो दिव्यकान्तिः सदा सुखी ॥ 37 ॥

इति श्री वैद्यपति सिंहगुप्तस्य सूनोर्वाग्भटाचार्यस्य कृतौ रसरत्नसमुच्चये रसशालाप्रकरणं नाम सप्तमोऽध्यायः ।

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# RASA RATNA SAMUCCAYA

## SEVENTH CHAPTER

## ENGLISH TRANSLATION

### RASA ŚĀLĀ PRAKARAṆAM

*Location and building of Rasa Śālā :*

*Rasa Śālā* laboratory (pharmacy) should be built in a place which is free from all fears and disturbances ; is associated with all kinds of medicinal herbs ; is very charming ; is associated with a well ; and is located in the very auspicious Northern, North Eastern or Eastern direction or region of the earth. Its building should be well protected with high boundary walls and it should be well equipped with all necessary equipments (1-2).

*Working arrangement of Rasa Śālā according to direction :*

The working of *Rasa Śālā* is said to have been divided in the following eight divisions. In the eastern region *(purva digbhaga)* of the *Rasa Śala* should be installed a statue of Lord Bhairava *(Rasa Bhairava)*. In the south eastern quarter *(āgneya koṇa)* the pharmaceutical operations involving the use of fire should be performed. In the southern part *(yāmya bhāga)* the works involving the use of stone made implements should be done. In south western quarter *(nairṭya koṇa)* the operations involving the use of sharp instruments *(śastras)* such as cutting, slicing, *etc.* should be conducted. The western part *(vāruṇa bhāga)* should be utilised for washing, cleaning, *etc.* where the use of water is required. In the north western quarter *(vāyavya koṇa)* the drying of the drugs/preparations should be done. The works related to transformation of lower metals into higher metals *(Vedhakarmas)* should be done in the northern region *(uttara digbhāga)* of the *Śālā* and the prepared medicines or products should be stored in the north-eastern quarter *(Īśakoṇa)* of the pharmacy. (3-4½).

*Materials and equipments :*

It is further mentioned in this context that the *Rasa Śālā* should have a collection of all the materials required for performing mercurial operations. The following is the list.

Metal extraction furnace *(satvapātana koṣṭhī)*, alcoholic extraction furnace/ distillation furnace *(surākoṣṭhī)*, underground furnace *(bhūmikoṣṭhī)*, mobile furnace *(calat koṣṭhi)*, many water containers/tanks *(anekaśaḥ jaladronyaḥ)*, a pair of air blower *(bhastrikā yugala)*, bamboo tubes *(vaṃśa nalikā)*, iron/metal tubes *(loha nalikā)*, bowl shaped vessels made of gold, iron, bronze, copper, stone and leather *(svarṇa ayas, kāṃsya, śulva, pāṣāṇa, carmakṛta kuṇḍies)*, different types of equipments *(vicitra karaṇāni)*, and different types of drugs *(vicitra dravyāṇi)* are to be collected. Further, the crusher *(kaṇḍanī)*, grinder *(peṣaṇī)*, boat shaped mortars *(droṇīrūpa-khalvas)*, round mortars *(vartula khalvas)*, heatable iron mortar *(āyasa taptakhalva)*, pestles of same type *(tathāvidha mardakas)*, seives *(cālinies)* having thousands of holes, cloth pieces *(kaṭatrāṇī)*, rods/sticks *(śalākās)*, circular rings/frames *(kuṇḍalies)*, soil suitable for making crucibles *(mūṣāmṛt)*, husk *(tuṣa)*, cotton *(kārpāsa)*, forest dung cakes *(vanopalas)*, ordinary dung cakes *(piṣṭakas)*, three types of drugs *i.e.* drugs of mineral, animal and herbal origin *(dhātu-jīva-mūlamaya trividha auṣadhas)*, charcoal *(śikhitras)*, dried dung powder *(govara)*, sugar *(śarkarā)*, sugar candy *(sitopalā)*, bottles and cups made of glass, iron, earth and cowries *(kācāyomṛtvarāṭā kūpikās* and *caṣakas)*, vinnowing baskets and other bamboo made containers/equipments *(śurpādi veṇupātras)*, small marine shells *(kṣudra kṣiprā)*, small conch shells *(śaṅkhikā)*, small knives *(kṣuraprāś)*, cooking vessels *(pākyas)*, and other miscellaneous utensils required, and spetulas *(pālikās)*, brushes *(karṇikās)*, knives and scissors for cutting herbs and vegetables *(śākacchedana śastrikās)* are also to be collected. (6-13).

*Seives and their types :*

Three types of seives are described in this text. Their form/shape, purpose and source materials are mentioned below.

(A) Seives made of thin bamboo sticks are always advised for seiving coarse powders.

(B) Sieves for seiving fine powders are said to be made of bamboo and fibres of *karṇikāra, śālmalī* and *harijata* woods. Their frame should be circular and they may have the height of four *aṅgulas* and diameter of one *aratni* (about 16''). This frame should be covered with goat's leather.

(C) The third type of seive is for seiving very fine powders. Their base should be made of horse hairs or piece of fine cloth. (14-17).

*Charcoals (Kokilas) :*

*Śikhitrā, pāvakocchiṣṭa, aṅgāra* are the synonyms of *kokila.* The burning charcoals extinguished by itself without sprinkling water are known as *kokilas.* (18).

*Dung cakes (Upalas) :*

*Piṣṭaka, chagaṇa, chāṇa, upala, utpala, giriṇḍa, upalasāṭhī* are the synonyms of dried dung cakes. (19).

*Bottles (Kūpikā) :*

*Kūpikā, kupikā, siddhā, golā* and *giriṇḍikā* are the synonyms of *kūpikā*. (20).

*Cups (Caṣaka) :*

*Caṣaka, kaṭorī, vāṭikā, kañcolī, khārikā* and *grāhikā* are the synonyms of *caṣaka*. (21).

*Adoration of equipments :*

Right from the cleaning of *Rasa Śālā* till the completion of the process of heating the mercury, whatever materials and equipments are required should be adored by chanting the very auspicious and sacred *rasāṅkuśā mantra*. Otherwise their efficiency and/or potency *(teja)* is taken away by Lord Bhairava. (22-23).

*Qualities of the staff to be engaged in 'Rasa Śālā' :*

The performer of mercurial operations or the person accomplished with superior skill *(sādhaka)* should engage following persons in *Rasa Śālā*.

(A) Physicians totally dedicated to mercurial processes.

(B) Highly skilled scholars *(vārtikās)* knowing the drugs and their various aspects, *i.e.*, morphology and pharmacotherapeutics *(nighaṇṭus)*.

(C) Persons knowing the languages of many countries or the various parts of one's own country. (24).

It is further stressed in *Rasa Ratna Samuccaya* that till the completion of the processing of mercury *aghora mantra* should be chanted continuously. (25).

*Qualities of attendants :*

Attendants should be active, persevering, clean hearted, courageous and physically very strong. (26).

*Qualities of Rasa Vaidya :*

The person possessing the following qualities deserves to be appointed as *Rasa Vaidya*. He should be religious, truthful, very learned, worshipper of Lord Śiva and Keśava, kind hearted and possessing the characteristics of *padmahasta*. (27).

*Characteristics of padmahasta person :*

A person having the marks of flag *(patākā)*, pot *(kumbha)*, lotus *(pāthoja)*, fish *(matsya)* and bow *(cāpa)* in his palm and with the fate line extended upto the ring finger is considered to be an *amrtahasta* or *padmahasta* person. (28).

*Characteristics of dagdhahasta person :*

A person who comes from an unknown country, who is not compassionate, is greedy and deprived of a teacher and has black lines in his palm is known as a *dagdhahasta* person. (29).

*Qualities of Store/treasury officer (nidhi sādhaka) :*

A person knowing the technique of preventing the invasion of evil spirits *(bhūtas)* may be considered fit for appointment as officer of store/treasury *(nidisādhaka)*. (30).

*Qualities of performer of religious offerings (balisādhaka) :*

A person who is strong, truth speaking, red eyed, black coloured and knows the technique of inducing fear in bad elements *(bhūtas)* is considered fit for performing religious offerings *(balikarmas)*. (31).

*Qualities of Maker and User of Rasāyanas (Rasāyana Vaidya) :*

A person who is free from greed, truthful, worshiper of gods and *Brāhmins*, capable of restraining his passion or senses and consumes only prescribed diet *(pathya bhojana)* is considered fit for appointment as *Rasāyana Vaidya* for preparing and using *Rasāyanas*. (32).

*Qualities of alchemist (dhātuvādī) :*

A person who is rich, generous, well equipped and constantly follows the teachings and advices of his teacher is considered best for pursuing the alchemical practices *(dhātuvidyā)*. (33).

*Qualities of drug collector :*

A person who is familiar or well versed with the different names of the drugs, who is clean hearted, non-cheating and possesses the knowledge of different subjects and languages is considered fit to be deputed for collection of drugs. (34).

*Essential requisits to achieve success :*

The success in *Rasakarmas* can be achieved by those who are clean

hearted, truth speaking, optimistic, conscious of their duties and free from any doubt in their mind. (35).

*Best sādhaka :*

Mercury treated with eighteen *saṁskāras* attains the qualities of best *(sādhaka)* that is accomplished with supernatural powers (highly effective) and can be used for all purposes. It is said to be *mahārasa.* (36).

*Benefits of rasa siddhi :*

The person who has achieved success in mercury processes becomes a donor, enjoys all physical pleasures, never becomes a beggar, is free from the effects of old age (senility), possesses divine lusture (looks very handsome), always feels happy and is respected by all. (37).

# RASA RATNA SAMUCCAYA

## NOTES ON SEVENTH CHAPTER

The seventh chapter of *Rasa Ratna Samuccaya* is entitled *Rasa Śālā Prakaraṇam* which means various aspects of *Rasa Śālā* (pharmacy) are dealt with in detail in this chapter. Though the sixth chapter also contains some descriptions of *Rasa Śālā*, further details about it are found in this chapter. Here, besides mentioning about the location and the building, working divisions, equipments and other materials and their adoration, qualities of the staff (technical and non-technical), essential requisits for achieving success in *rasa karmas*, quality of mercury after its processing and the benefits of *rasa siddhi* are described.

This chapter begins with a brief description of the location and the building for *rasa śālā* followed by a detailed description of its working. The *Rasa Śālā* is divided into eight divisions corresponding to the eight directions. A critical consideration of these divisions makes one feel that these are based on sound reasoning. The recommendation about the installation of the statue of *Rasa Bhairava* in the eastern part of the *Rasa Śālā* is probably based on the auspiciousness of the eastern direction and on its being the starting point of this building. Hence as soon as the *sādhaka* enters the *śala* he finds the *Rasa-Bhairava* in front and is inspired to offer his prayer so that he may get the blessings which is most essential for achieving success in further workings.

The operations related to the use of fire are advised to be carried out in the *āgneya koṇa* (south eastern direction) because this direction is ruled by god *Agni* who, by virtue of his being the god of fire keeps control over fire and hence the pharmaceutical operations involving the use of fire are expected to be successful if performed in this direction.

The *yāmya bhāga* (southern part) is mentioned for *pāṣāṇa karmas* which means works such as grinding, pesting, *etc.* involving the use of stones or stone made equipments are carried out here. This is probably because of its being the place of god *Yama* who is considered the god of death also. Because of this he is expected to impart success in the operations (grinding, pesting, *etc.*) responsible for the destruction of the form of drugs/materials like death. Hence operations such as grinding, pesting, *etc.* involving the use of stones are advised to be done in the south.

The *naiṛtya koṇa* (south western quarter) is advised for performing

*śastrakarmas i.e.* cutting, slicing, *etc.* as this part of earth belongs to the demons *(rākṣasas)* who are cruel in nature and frequently use sharp weapons. Hence pharmaceutical operations requiring the use of sharp instruments prove to be very easy, perfect and safe if carried out in this direction.

Works such as washing, cleaning, *etc.* involving the use of water are advised to be done in *vāruṇa bhāga* (western part) because god *Varuṇa,* who is claimed to be the god of water/ocean, rules this quarter. Hence operations related to the use of water carried out in this quarter would never experience water shortage because of the presence of god *Varuna.*

The *vāyavya koṇa* (north western quarter) is indicated for drying purposes. This quarter of earth is ruled by god *Vāyu* who is supposed to control the blow of air, and air is one of the most essential factor for drying operations. Hence drying done in this direction never encounters a shortage of air and thus makes the drying very easy.

The *vedhakarmas* means the works related to the transformation of lower metals to higher (precious) ones like gold and silver. It is advised to be done in *uttara digbhāga* (northern quarter) of the building. This is probably because of this direction being ruled by *Kuvera,* the god of wealth. Hence the operations are likely to produce wealth by transformation, usually turn to be successful with the blessings of god *Kuvera* if done in this direction.

The *Īśakoṇa* (north eastern quarter) is advised to be used for storing of drugs, preparations, finished products, *etc.* Mythologically, this quarter belongs to Lord Śiva/Rudra who is the creator of the mercurial science. Hence if the finished products are stored in this direction their *vīrya* (effect/potency) could be preserved for a long time by Lord Śiva himself.

*Equipments and other materials to be collected :*

After describing the working divisions of *Rasa Śāla* the equipments and other materials required for working and hence to be collected are mentioned in the *Rasa Ratna Samuccaya.* These include different types of furnaces, air blowers, different types of containers made of different source materials for storing water and other substances, different kinds of tubes, rods, bottles and cups, different types of mortars with pestles, different types of seives for seiving coarse, fine and very fine powders, various types of grinders, crushers, cutting and slicing instruments, different kinds of fuel materials, different types of drugs and sweet substances, different types of cooking and storing vessels and different types of knives and scissors. All these are to be collected for carrying out various pharmaceutical operations relating to mercury and other drugs of mineral origin.

It is also mentioned in this text that the working of *Rasa Śālā* should start with its cleaning and then followed by various pharmaceutical operations

including application of heat to mercury and other drugs. And whatever equipments and materials are required for performing these operations should be adored with the sacred *Rasāṅkuśā mantra.* As it is believed that if this is not done the materials, instruments and equipments get deprived of their *teja* (efficiency or effects) by *Lord Bhairava* who is supposed to constantly supervise the overall working of *Rasa Śālā.*

Further, it is advisable to engage the following personnel for conducting the working of the *Rasa Śālā* smoothly and efficiently :

(A) *Vaidyas* who are totally dedicated to mercurial processing.

(B) *Vārtikas* (skilled technical persons) especially possessing the knowledge of *nighaṇṭus* (drugs), and

(C) Lastly some persons knowing the languages of many countries.

It may be added here that there must be some assistants also, who are capable of assisting in the actual work being carried out by the *sādhaka* (performer).

Further, while describing the qualities of *rasavaidya,* characteristics of *padmahasta (amṛtahasta)* and *dagdhahasta* persons are also described. The terms *padmahasta* and *amṛtahasta* are used as synonyms, and a *padmahasta* person should possess the marks of flag, pot, lotus, fish and bow on his palm and also a fate line or middle line extending upto the root of the ring finger. A *dagdhahasta* person is one whose country or native place is not known, who has no compassion, is greedy, and deprived of any teacher and contains black lines on his palm.

These are the characteristics for determining the *padmahasta* or *dagdhahasta* person and on their basis the former is recommended and the latter is discarded. In addition the qualities of the following technical staff *viz.,* 1. *rasa vaidya,* 2. *rasāyana vaidya,* 3. *nidhi sādhaka,* 4. *bali sādhaka,* 5. *dhātuvādī* and 6. drug collector have also been described.

(1) *Rasavaidya :* He should be religious, truthful, well learned, kind hearted, worshipper of Lord Śiva and Lord Keśava and possess all the charactes of a *padmahasta* person.

(2) *Rasāyana vaidya :* He should not be greedy, should be truthful, worshipper of gods and Brāhmiṇs, capable of restraining passion, and consumer of *pathya* (prescribed diet) only.

(3) *Nidhi sādhaka :* He should be expert in the technique of preventing the invasion of *bhūtas* (evil spirits/bacteria).

(4) *Bali sādhaka :* He should be physically very strong, truth speaking, red eyed, black coloured, and capable of inducing fear in *bhūtas* (evil spirits/bad elements).

(5) *Dhātuvādī :* He should be rich, generous, well equipped and a devoted follower of the teachings of his teacher.

(6) *Drug collector :* He should be familiar with the local names of different

drugs, clean hearted, honest and well versed in the allied subjects and in different languages.

Besides the qualities of specified technical experts some common qualities are also mentioned which should essentially be present in the *sādhaka* (performer) for achieving success in *Rasa Karmas*. A *sādhaka* should be clean hearted, truth speaking, optimistic, duty conscious, and free of all doubts. Only such persons are expected to achieve success. It is also mentioned in this context that mercury treated with eighteen *saṃskāra* is considered as the best *sādhaka*. (that is accomplished with supernatural powers, capable of making 'Deha Vedha' and 'Loha Vedha' both). Hence it is named as 'Mahārasa' also.

In the end it is mentioned that one who achieves 'Rasa Siddhi' becomes a donor, enjoys all physical pleasures, never becomes beggar, remains free from the effects of old age, accomplishes with divine lustre, feels always happy and earns respect in the society or even in the world.

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Supplement

# RASA RATNA SAMUCCAYA

(Continued)

Eighth Chapter

Sanskrit Text

English Translation

Notes

# अथ अष्टमोऽध्यायः

## परिभाषाकथनीयम्

परिभाषाकथनम् –

कथ्यते सोमदेवेन मुग्धवैद्यप्रबुद्धये ।
परिभाषा रसेन्द्रस्य शास्त्रैः सिद्धैश्च भाषिता ॥ 1 ॥

धन्वन्तरिभागः –

अर्धं सिद्धरसस्य तैलघृतयोर्लेहस्य भागोऽष्टमः ।
संसिद्धाखिललोहचूर्णवटकादीनां तथा सप्तमः ॥
यो दीयेत भिषग्वराय गदिभिर्निर्दिश्य धन्वन्तरिं ।
सर्वाऽरोग्यसुखाप्तये निगदितो भागः स धन्वन्तरेः ॥ 2 ॥

रुद्रभागः –

भैषज्यक्रीणितद्रव्यभागोऽप्येकादशो हि यः ।
वणिग्भ्यो गृह्यते वैद्ये रुद्रभागः स उच्यते ॥ 3 ॥

विश्वासघातकवैद्यः –

प्रगृह्याऽधिकरुद्रांशैः योऽसमीचीनमौषधम् ।
दापयेल्लुब्धधीर्वैद्यः स स्याद्विश्वासघातकः ॥ 4 ॥

कज्जली –

धातुभिर्गन्धकाद्यैश्च निर्द्रवैर्मर्दितो रसः ।
सुश्लक्ष्णः कज्जलाभोऽसौ कज्जलीत्यभिधीयते ॥ 5 ॥

रसपंकः –

सद्रवा मर्दिता सैव रसपंक इति स्मृतः ॥ 6 ॥

रसपिष्टीप्रथमा –

अर्कांशतुल्याद्रसतोऽथगन्धा –
न्निष्कार्थतुल्यात्कुटितोऽभिखल्ले ।
अर्कातपे तीव्रतरे विमर्द्या
पिष्टी भवेत्सा नवनीतरूपा ॥ 7 ॥

रसपिष्टी द्वितीया –

खल्ले विमर्द्य गन्धेन दुग्धेन सह पारदम् ।
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विडलक्षणम् –

क्षारैरम्लैश्च गन्धाद्यैर्मूत्रैश्च पटुभिस्तथा ।
रसग्रासस्य जीर्णार्थं तद्विडं परिकीर्तितम् ॥ 84 ॥

रंजनलक्षणम् –

सुसिद्धबीजधात्वादिजारणेन रसस्य हि ।
पीतादिरागजननं रंजनं परिकीर्तितम् ॥ 85 ॥

सारणालक्षणम् –

सूते सतैलयन्त्रस्थे स्वर्णादिक्षेपणं हि यत् ।
वेधाधिक्यकरं लोहे सारणा सा प्रकीर्तिता ॥ 86 ॥

वेधलक्षणम् –

व्यवायिभेषजोपेतो द्रव्ये क्षिप्तो रसः खलु ।
वेध इत्युच्यते तज्ञैः स चानेकविधः स्मृतः ॥ 87 ॥

वेधप्रकाराः –

लेपः क्षेपश्च कुन्तश्च धूमाख्यः शब्दसंज्ञकः ॥ 88 ॥

लेपवधः –

लेपेन कुरुते लोहं स्वर्णं वा रजतं तथा ।
लेपवेधः स विज्ञेयः पुटमत्र च सौकरम् ॥ 89 ॥

क्षेपवेधः –

प्रक्षेपणं द्रुते लोहे वेधः स्यात्क्षेपसंज्ञितः ॥ 90 ॥

कुन्तवेधः –

सन्दंशधृतसूतेन द्रुतद्रव्याह्वतिश्च या ।
सुवर्णत्वादिकरणी कुन्तवेधः स उच्यते ॥ 91 ॥

धूमवेधः –

वह्नौ धूमायमानेऽन्तः प्रक्षिप्तरसधूमतः ।
स्वर्णाद्यापादनं लोहे धूमवेधः स उच्यते ॥ 92 ॥

शब्दवेधः –

मुखस्थितरसेनाल्पलोहस्य ध्मनात्खलु ।
स्वर्णरुप्यत्वजननं शब्दवेधः स कीर्तितः ॥ 93 ॥

उद्धाटनम् –

सिद्धद्रव्यस्य सूतेन कालुष्यादिनिवारणम् ।
प्रकाशनंच वर्णस्य तदुद्धाटनमीरितम् ॥ 94 ॥

भूमिस्वेदनम् –

क्षाराम्लैरौषधैः सार्द्धं भाण्डं रुद्ध्वाऽतियत्नतः ।
भूमौ निखन्यते यत्नात्स्वेदनं सम्प्रकीर्तितम् ॥ 95 ॥

सन्यासः –

रसस्यौषधयुक्तस्य भाण्डरुद्धस्य यत्नतः ।
मन्दाग्नियुतचुल्ल्यन्तः क्षेपः सन्यास उच्यते ॥ 96 ॥

द्वयोः प्रभावनिरूपणम् –

द्वावेतौ स्वेदसंन्यासौ रसराजस्य निश्चितम् ।
गुणप्रभावजनकौ शीघ्रव्याप्तिकरौ तथा ॥ 97 ॥

परिभाषाज्ञानमाहात्म्यम् –

रसनिगममहाब्धेः सोमदेवः समन्तात्
स्फुटतरपरिभाषानामरत्नानि हृत्वा
व्यरचयदतियत्नातैरिमां कण्ठमालां
कलयतु भिषगग्र्यो मण्डनार्थं सभायाम् ॥ 98 ॥
भवेत्पठितवारोऽयमध्यायो रसवादिना ।
रसकर्माणि कुर्वाणो न स मुह्यति कुत्रचित् ॥ 99 ॥

इति श्री वैद्यपतिसिंहगुप्तस्यसूनोर्वागभटाचार्यस्य कृतौ रसरत्नसमुच्चये रसपरिभाषा कथनं नाम अष्टमोऽध्यायः ॥

# RASA RATNA SAMUCCAYA

## EIGHTH CHAPTER

## ENGLISH TRANSLATION

### AIMS AND OBJECTIVES OF PARIBHĀṢĀ (TECHNICAL TERMS)

The technical terms relating to the science of mercury mentioned in the texts and defined by the *Siddhas* (experts) are being described by Śrī Somadeva for a clear understanding of lesser scholarly and lesser experienced physicians. (1).

1. *Dhanvantari Bhāga :*

The portion of the medicines offered to the physicians by the patients in the name of Lord Dhanvantari to achieve total health and happiness is known as *Dhanvantari Bhāga.* This is as follows for different preparations:

- —half part of the prepared *rasa* preparations,
- —one eighth part of prepared *tailas* (oil) *ghṛtas* (ghees) and *lehyas* (confections),
- —one seventh part of all types of *lohas* (metallic preparations), *cūrṇas* (powders), *vaṭakas* (pills), *etc.* (2).

2. *Rudra Bhāga :*

The portion of the price of medicines being taken by the physicians from the traders as commission is known as *rudrabhāga.* It is one eleventh part of the cost of medicines. (3).

3. *Viśvasaghātaka Vaidya :*

The physician out of greed recommends substandard or spurious medicines to his patients and accepts more commission than the *rudrabhāga* is considered as a traitor or unfaithful physician. (4).

4. *Kajjalī* :

The mercury preparation obtained by grinding it with metals, sulphur and such other minerals, without adding any liquid is called *kajjalī*. It is very soft and smooth to touch and black in colour like the soot of a lamp. (5).

5. *Rasa Paṅka* :

*Kajjalī* ground with liquids is known as *rasapaṅka*. (6).

6. *Rasa Piṣṭi* :

When 12 parts of mercury and 1 part of sulphur are mixed together and ground in a mortar in intense sunshine, the resultant material is converted into a *piṣṭi* which has the consistency of butter. (7).

*Rasa Pisti (II)* :

Mercury mixed with sulphur and ground with milk in a mortar converts itself into a form of paste and this is also known as *piṣṭi* according to other scholars. (8).

7. *Pātana Piṣṭi* :

The *piṣṭi* prepared by mixing one quarter part gold with one part of mercury is known as *pātana piṣṭi*. It is claimed to give excellent success in mercurial processing. (9).

8. *Svarna-raupya Kṛṣṭi* :

Gold or silver converted to ashes along with mercury and sulphur and regained several times, are known as the *kṛṣṭi* of *hema* or *tāra* as the case may be. (10).

*Test for Kṛṣṭi*

The gold or silver obtained as *kṛṣṭi* does not look inferior in colour when compared with the natural gold or silver that is known as the best *kṛṣṭi* of gold or silver.

*Effect of Svarṇa Kṛṣṭi Bīja* :

The bīja made by such *svarṇa kṛṣṭi* is claimed to be *Rasa rañjana* (mercury dye). (11).

9. *Varaloha :*

*Tāmra* (copper) mixed with *tīkṣṇa loha* (steel) is melt and the melt poured in the *lakuca* juice associated with sulphur for a number of times, converts itself into an alloy and that is known as *varalohaka.* (12).

10. *Hemaraktī :*

Gold turned red by the addition of the *varaloha* is known as *hemaraktī.* (13).

*Effect of Hemaraktī :*

The *hemaraktī* mixed with molten gold improves its colour. It also imparts colour to silver and other *bījas.* (14).

11. *Tāraraktī :*

In a similar way a beautiful *tāraraktī* may also be prepared. It imparts colour to silver and also to other *bījas.* (15).

12. *Candra dala, Anala dala :*

Any metal on being treated with reduced mercury, solidified mercury, or with other metals attains whiteness or yellowness is known as *candra dala* or *anala dala,* respectively. (16).

*Other method :*

If the whiteness or yellowness of a metal is obtained by the addition of *ābhāsabaddha pārada* or by any other metal, it is known as *sitadala* or *pītadala,* respectively. (17).

13. *Śulba Nāga :*

*Tāmra* (copper) is converted into ashes with *mākṣika* (copper pyrite) and regained for ten times. Similarly, *nāga* (lead) is converted into ashes with *mākṣika* and regained for ten times. Two *palas* (100 g) of each (regained copper and lead), are mixed together and incinerated with *nīlāñjana* and regained. The process is repeated seven times. The material so obtained is known as *śulbanāga.* (18-19).

*Properties of Śulba Nāga :*

Mercury mixed with *śulba nāga* and kept in mouth destroys all types of *pramehas* (urinary disorders) within a month. It is also claimed to destroy wrinkles and grey hairs within a year, if prescribed diet schedule and prescribed behaviour schedule are observed. Further, it provides eagle like long sight, best nourishment to the body and total healthiness. (20-21).

14. *Piñjarī :*

If a metal thrown in another metal, heated strongly and cooled in a liquid attains a pale or yellow colour, then the metal is known as *piñjarī.* (22).

15. *Candrārka :*

Sixteen parts of silver is mixed with twelve parts of copper and melted together. The material thus obtained is called *candrārka.* (23).

16. *Nirvāpaṇa/nirvāhaṇa :*

If a metal is thrown into another metal to be prepared through the *vaṅkanāla* (bent tube) then that is described as *nirvāpaṇa* or *nirvāhaṇa* by expert physicians. (24).

*Quantity of Nirvāpaṇa Dravya :*

*Nirvāpaṇa dravya* should be put into *nirvāhya/āvāhya/vāpanīya dravya* in equal proportion. But if other proportion is specified then that should be followed as per instruction.

17. *Vāritara :*

If a killed metal (metal converted to an ash) floats on the surface of water, it is known as *vāritara.* (26).

18. *Uttama Vāritara*[1] *:*

When a heavy material or grain placed on the floating *mṛtaloha* also floats like *haṃsa* (goose) then the metal is known as *uttama vāritara.* (27).

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[1]. The verse no. 29 of the original text should come after verse no. 26 and should be numbered 27. As verse No. 26 and verse No. 29 are related to each other, hence the change in number is suggested.

19. *Rekhā Pūrṇa :*

If a killed metal (metal converted to ashes) enters into the thin lines of finger bed when rubbed in between the thumb and the index finger, then that is known as *rekhāpūrṇa.* (28).

20. *Apunarbhava :*

If a killed metal burnt in fire together with *guḍa* (jaggery), *guñjā* (seeds of *abrus precatorius), sukhasparśa (ṭankaṇa/* borax), *madhu* (honey) and *ājya* (ghee) does not return to its original metal form, then it is known as *apunarbhava.* (29).

21. *Niruttha :*

If a *mṛtaloha* (metal converted to ashes) blown in fire in association with silver does not adhere to silver, then it is known as *niruttha* or *apunarbhava* also. (30).

22. *Bīja :*

When a metal attains different colours, turns soft and becomes useful for various *saṃskāras* by the influence of different *nirvāpaṇa* procedures, then it is known as *bīja.*

23. *Uttaraṇa :*

The *bīja* is also described as *uttaraṇa* by the experts. (31).

24. *Tāḍaṇa :*

Destroying one metal from a complex of metals by blowing through the *vankanāla* (bent tube) is known as *tāḍana.* (32).

25. *Dhānyābhra :*

When powdered mica, mixed with *śali dhānya* and packed in a piece of cloth is put in *kāñjika,* allows fine particles of mica to go out of the cloth on vigorous rubbing, the same (fine particles) are known as *dhānyābhraka.* (33).

26. *Satva :*

When a mineral associated with *kṣāra, amla* and *drāvaka* group of drugs and blown in the *ākara koṣṭhaka* (specific furnace) releases its essence (metallic content) then that (metal content) is known as *satva.* (34).

27. *Ekakolīsaka :*

When a furnace filled with charcoal upto its top in the form of *śikhara* (hillpeak shape) and reduces to the neck of the *musa* on blowing, then that is known as *ekakolisaka.* (35).

*Indications for the use of various types of charcoals :*

Charcoals obtained from mādhūka *(Madhūka indica)* and khādirā *(acacia catechu),* kāṣṭha (woods) are considered the best for *drāvaṇa* (melting) and *satvapātana* (extraction of metallic content). For *nirdrava* heating (dry heating) charcoals obtained from *vaṃśa* (bamboo) *kāstha* are of choice. For *svedana* (liquid heating/boiling) charcoals obtained from *bādara (Zizyphus jujuba* Linn.) *kāṣṭha* are considered the best. (36).

28. *Hiṅgulākṛṣta Rasa :*

When *hiṅgula* (cinnabar) triturated with *ārdraka drava* (expressed juice of zinger) and heated in *vidyādhara yantra* releases mercury as *satva* that mercury is known as *hiṅgulākṛṣta rasa.* (37).

29. *Ghoṣākṛṣta Tāmra :*

When *kāṃsya* (bell metal) mixed with a little *tālaka* (orpiment) and subjected to *tāḍana* (blowing) through *vaṅkanāla* (bent tube) liberates tin from it and leaves pure copper, then that copper is known as *ghoṣākṛṣta tāmra.* (38).

30. *Varanāga :*

When *tīkṣṇa loha* (steel) in association with *nīlāñjana* (galena) is blown strongly several times releases a soft, black and quick melting substance, that (the substance) is known as *varanāga.* (39).

31. *Utthāpana :*

Obtaining of metal from its ashes is known by the term *utthāpana ;* or the process by which metal converted to ashes is made to return to its original metal form is known as *utthāpana.*

32. *Dhālana :*

Pouring of molten substance into a liquid is known as *dhālana.* (40).

33. *Nāgasambhūta Capala :*

Thirty *palaṣ* of *nāga* is ground with the latex of *arka* and subjected to *puṭa* heating till it reduces to one *karṣa* (about 12 g) and could not be reduced further even by one thousand *puṭas* is described by the experts of *Rasa Śāstra* as *capala* produced from *nāga.* (41-42).

34. *Vaṅga Sambhūta Capala :*

Like-wise *capala* can be obtained from *vaṅga* also and that is known as *vaṅga sambhūta capala.*

*Its uses :*

Hand touched with this *capala* can fix/solidify mercury by mere touch. But such mercury is claimed useful for *dhātuvāda* only and not for *rasāyana karma.* This is mentioned by Kharvaṇa-Lokanātha. (43-44).

35. *Dhauta :*

A black coloured powder, collected as remnant of the washing of fecal matter of the earth worms is called *dhauta* by the experts of *Rasa Śāstra.* (45).

36. *Dvandvāna :*

Mixing of two substance together by grinding or blowing is described as *dvandvāna.* (46).

37. *Anuvarṇaka/Suvarṇaka :*

If addition of a substance in quantity excess of the prescribed ratio causes better or deficient colour in the alloy, the process is known as *suvarṇaka* or *anuvarṇaka.* as the case may be.

38. *Bhaṅjanī :*

Reducing the intensity of a fire with the help of liquid (water) or by any other means is known as *bhaṅjanī* by the experts of *Rasa Śāstra.* (48).

39. *Pataṅgī :*

Induction of golden colour to any metal or silver by the effect of herbal paste is known as *pataṅgī.* (49).

40. *Cullikā :*

If the golden colour of the metal produced by the effect of *patańgī kalka* disappears after a few days, that (the phenomena) is known as *cullikā.* (50).

41. *Patańgī Rāga :*

Removal of the colour from coloured metal by prolonged blowing or by prolonged storing is known as *patańgīrāga.* (51).

42. *Āvāpa :*

Addition of any foreign substance in molten metal is known as *āvāpa, pratīvāpa,* or *ācchādana.* (52).

43. *Abhiṣeka :*

Pouring of water from all sides into a molten metal after waiting for eight moments is known as *abhiṣeka.* (53).

44. *Nirvāpa :*

Dipping of heated metal or any substance into a liquid or water is known as *nirvāpa* or *snapana.* (54).

45. *Prativapa :* This should be done in clear molten metal. (Throwing of a substance in the clear molten metal is known as *prativapa).* (55).

46. *Śuddhāvarta :*

When the burning flame becomes white, it is known as *śuddhāvarta.* This is the time for the release of *satva* (essence/metallic content). (56).

47. *Bījāvarta :*

Appearance of the colour of the flame similar to the colour of the metal being blown is known as *bījāvarta.* This is indicative of the state that the metal is about to melt. (57).

48. *Svāńga Śīta :*

Cooling of the substance by itself within the furnace is known as *svāńga śīta.*

49. *Bahiḥ Śīta :*

Cooling of the material outside the furnace after its removal from the furnace is known as *bahiḥśīta.* (58).

50. *Svedana :*

Boiling of any drug together with *kṣāra, amla* or any other drug in liquid form through *dolā yantra* method is known as *svedana.* This is aimed at loosening the impurities. (59).

51. *Mardana :*

Grinding of *pārada* or any material with prescribed drugs, herbs or with any *amla drava* or *kāñjika* is known as *mardana.* It is aimed at destroying external impurities. (60).

52. *Mūrcchana :*

Conversion of mercury into *naṣṭa piṣṭa* state by grinding with the drugs mentioned for *mardana saṃskāra/ mūrcchana saṃskāra* is known as *mūrcchana.* It is meant for destroying *vaṅga, nāga* and *bhūmija* type *kañcuka* impurities. (61).

53. *Naṣṭa piṣṭa*[2] *:*

When mercury looses its form by getting divided into very fine globules through grinding with prescribed drugs, it is called *naṣṭa piṣṭa* by the experts. Mercury having attained this state is considered as conquered. (62).*

54. *Utthāpana :*

Regaining of mercury to its original form by boiling or heating in sun rays is known as *utthāpana.* It is meant to remove the *naṣṭa piṣṭatva* effect of *mūrcchana saṃskāra.* (63).

55. *Pātana :*

When mercury, ground with prescribed herbs/drugs and closed in *pātana yantra* (an apparatus) is allowed to move upward, downward and/or oblique directions by heating, (the process) is called *pātana.* It is meant for destroying the *kañcuka* type impurities of *pārada* caused by *vaṅga* and *nāga.* (64).

* The verse no. 63 of the original text should come after the verse no. 61 and should bear no. 62 and verse no. 62 of the original text should bear no. 63.

56. *Rodhana :*

Keeping of mercury in a pot/bottle with water and *saindhava lavaṇa* for three days is known as *rodhana/bodhana.* It is meant for the *āpyāyana* (potentiation) of mercury or for the removal of *saṇḍhatva doṣa* of mercury. (65).

57. *Niyamana :*

Boiling of mercury with prescribed drugs and liquids to remove its excessive mobility *(capalatva) doṣa* gained through *rodhana saṃskāra* is called *niyamana.* (66).

58. *Dīpana :*

Boiling of mercury with metals *(dhātu),* ores/minerals *(pāṣāṇa),* vegetable drugs *(mūla) etc.* in a pot for three days is called *dīpana* by the experts. This is done to make mercury desirous of consuming more metals and minerals *(grāsārthī).* (67).

59. *Grāsamāna :*

A certain quantity of mercury can consume a certain amount of metal *(grāsa* material) is called *iyatī* and that is also known as *grāsamāna.* (68).

*Stages of Jāraṇā :*

Consumption of *grāsa,* its melting inside the mercury, and its assimilation into the mercury are the three stages of *jāraṇā* mentioned by the experts of *Rasa Śāstra.* (69).

*Grāsa, piṇḍa* and *parīṇāma* are the three other stages of *jāraṇā.* (70).

*Types of Jāraṇā :*

Further, *jāraṇā* has been divided into two types, *i.e. samukha* and *nirmukha jāraṇā.* (71).

60. *Nirmukha Jāraṇā :*

Addition of *bīja* according to the prescribed proportion is called *nirmukha jāraṇā.* (72).

61. *Bīja :*

Pure gold and silver are described as *bījas.* (73).

62. *Samukha-jāraṇā :*

Putting of 1/64th part of *bīja* into mercury is said as *mukha.* Mercury so treated turns greedy that is ready to consume *grāsa* and becomes *mukhavān.*[3] Such mercury becomes capable of consuming even hard metals. This is described as *samukha jāraṇā* by expert *mṛgacārin.* (74-76).

63. *Rākṣasa Vaktra Pārada :*

When mercury combined with divine herbs *(divya auṣadhies)* is heated in an open furnace, it can consume all the metals. Such mercury is known as *rākṣasa vaktra.* (77).

64. *Cāraṇa :*

Putting of *grāsa* inside the mercury *(jaṭhara)* is known as *cāraṇa.* (78).

65. *Garbhadruti :*

Liquefaction of consumed substance within the mercury is known as *garbha druti.* (79).

66. *Bāhya druti :*

Liquefaction (melting) of *satvas* of mica and such minerals done outside the mercury for getting the metal assimilated into mercury is known as *bāhyadruti.* (80).

67. *Druti :*

Liquefaction of metals and minerals, done by addition of herbs or blowing, is known as *druti.* it remains in the same (liquefied) state for ever. (81).

*Characteristics of Druti :*

*Nirlepatva* (non-adhesive), *drutatva* (liquidity), *tejastva* (lustre), *laghutva* (lightness) and *asaṃyoga* with *sūta* (dis-similarity with mercury) are the five characteristics of *druti.* (82).

68. *Jāraṇa :*

Total assimilation of liquefied *grāsa* (consumed substance) either with

[3] Mukhavān—having acquired the power of consuming grāsa.

the help of *vida* or by treating it in specified *yantra* is called as *jarana*. Its types are innumerable. (83).

69. *Vida :*

The material/mixture made of drugs like *kṣaras, amlas, gandhaka, mutras* and *lavaṇas*, individually or in combination for the *jāraṇa* (assimilation) of *grāsa* inside the mercury is described as *viḍa*. (84).

70. *Rañjaṇa :*

Induction of yellow or such other colours in mercury by making the *jāraṇa* of well prpared *bījas, dhātus, etc.* is described as *rañjaṇa*. (85).

71. *Sāraṇa :*

Putting of materials like gold into the mercury already kept in an apparatus containing a specially prepared oil to accelerate the process of *vedhana* is known as *sāraṇa*. (86).

72. *Vedha :*

Addition of mercury associated with *vyavāyī* drugs into the substances to be subjected to *vedhana* is known as *vedha* process by the experts. It is of many types. (87).

*Types of Vedha :*

*Lepa, kṣepa, kunta, dhūma* and *śabda* are the types of *vedha*. (88).

73. *Lepa Vedha :*

Making of gold or silver from lower metals by anointing paste is known as *lepa vedha ; varāhaputa* heat is applicable in this context. (89).

74. *Kṣepa vedha :*

The process in which *vedha* is achieved by putting treated mercury into the molten metal is known as *kṣepa vedha*. (90).

75. *Kunta vedha :*

The process in which mercury held with a forcep is brought in contact with the molten metal for making noble metals like gold, silver, is known as *kunta vedha*. (91).

76. *Dhūma vedha :*

The process in which treated mercury, put in fire with smoke, transmutates lower metal into higher metals like gold through its fumes is known as *dhūma vedha.* (92).

77. *Śabda vedha :*

When lower metal is converted into gold or silver by blowing air containing treated mercury through the mouth, the *vedha* (thus achieved) is known as *śabda vedha.* (93).

78. *Udghātana :*

Removing of blackness/discolouration from a prepared substance as well as improving the brightness of the colour of the substance by the treatment of mercury is known as *udghāṭana.* (94).

79. *Svedana :*

Keeping of a sealed pot containing mercury along with *kṣāra, amla* and vegetables extracts under the ground is known as *svedana.* (95).

80. *Sanyāsa :*

Putting of sealed pot containing mercury and other medicines on the furnace for providing mild heat is known as *sanyāsa.* (96).

*Effects :*

Both *svedana* and *sanyāsa* treatments improve the property, potency and quick spreading power of mercury. (97).

*Conclusion :*

Somadeva has collected all the technical terms and their lucid definitions from all the texts of *Rasa Śāstra* like the jewels from the ocean, and has prepared a garland (a necklace) of these technical terms to be borne (remembered) by all the physicians/experts for attaining fame and inclusion of their names in the gallaxy of scholars. (98).

If the workers/experts of *Rasa Śāstra* are used to a study of this chapter regularly and repeatedly then they never face failures while performing mercurial operations. (99).

# RASA RATNA SAMUCCAYA

## NOTES ON EIGHTH CHAPTER

The eighth chapter of *Rasa Ratna Samuccaya* deals with the definitions of the technical terms related to the science of mercury *(Rasa Śāstra)*. The author has claimed in the beginning of the chapter that he has collected the *paribhāṣās* from the different texts of *Rasa Śāstra* and from the *Siddhas (Rasa Siddhas)*, scholars of *Rasa Śāstra* for a clear understanding of this technical knowledge by the ordinary scholars or by less experienced physicians. Though, technical terms numbering eighty (80) have been explained or defined in this chapter, there are still many more technical terms found described in other texts which are also considered necessary for the clear understanding of this knowledge. Hence these are being described in the following paragraphs.

1. *Amṛtīkaraṇa :*

*Amṛtīkaraṇa* is an important procedure found described in the context of *māraṇa (bhasma)* process. It is done to remove the remaining bad effects *(doṣas)* of *bhasmas* which are likely to remain in the *bhasmas* even after the *māraṇa* process. It is not essentially required for all the *bhasmas* but a few *bhasmas* like *abhraka* and *tāmra bhasma* need this to make these suitable for therapeutic uses.

2. *Anupāna :*

*Anupāna* is that (vehicle) which is administered internally either with the drug or following it. In other words *anupāna* is that which is taken after the drug either to potentiate it or to help in the assimilation and/or quick spreading of the administered drug.

3. *Sahapāna :*

*Sahapāna* is also a vehicle which is taken along with the drug/medicine. It may help in the dispersion of the drug and/or in their quick absorption in the body.

4. *Śodhana :*

*Śodhana* is an important process necessary for almost all kinds of drugs to remove their *doṣas* (impurities/toxic contents) by processes of grinding, heating, washing, *etc.* Śodhana is also done to disintigrate or to divide the drugs into fine particles.

5. *Sāmānya Śodhana :*

*Sāmānya Śodhana* is the operation which is commonly applicable for a group of drugs and may help in removing their impurities to some extent.

6. *Viśeṣa Śodhana :*

*Viśeṣa Śodhana* is that which is specific for particular drug. It helps in removing the impurities and in making the drugs therapeutically more effective by treating them with specific drugs.

7. *Māraṇa :*

*Māraṇa* is another important process which is carried out after the *śodhana process* is over. Through this metals or minerals are killed (converted to ashes) by subjecting these to grinding with vegetable extractives and heating at a specified temperature for a specified period. This renders the metals and minerals to readily absorbable form (*i.e. Rasa* form).

8. *Satvapātana :*

*Satvapātana* is also an important process which helps to extract the metallic contents of the minerals. In this process minerals are subjected to strong heating after being ground with *kṣāras, amlas* and a few other organic materials.

9. *Koṣṭhī :*

*Koṣṭhī* is a kind of furnace which is specifically used for *satvapātana* purpose. It is also used for the purification of these *satvas.* Many kinds of *koṣṭhīs* are mentioned in *Rasa Śāstra* for applying different grades of heating.

10. *Puṭa :*

*Puṭa* is a system of heating that gives an understanding of how much *pāka* (heating) is required by a particular metal or mineral for its conversion into ashes.

As only measured heating is always recommended for achieving desired medicinal products, neither more nor less heating is desirable.

11. *Bhāvanā :*

*Bhāvanā* is a procedure in which powdered drugs (specially of mineral origin) are ground or pasted with liquids to dryness. Here the heat produced during grinding and the atmospheric heat helps in drying the materials quickly. By applying *bhāvanā* the drugs are rendered fine and potentiated.

12. *Nirvāpa :*

*Nirvāpa* is that procedure in which red hot drugs are dipped into liquids or plain water. It is also known as *snapana.*

13. *Krāmaṇa :*

*Krāmaṇa* is one of the *saṃskāras* special process of mercury through which it acquires the power of entering or penetrating inside the *lohas* (metals) for their transformations. It is said in the texts that without undergoing *krāmaṇa* mercury does not acquire the power of penetrating into *lohas*, it only covers them from outside.

It is said in *Rasa Hṛdaya Tantra* that medicines or food materials used along with *anupāna* enter into the tissues of the body and mercury processed with *krāmaṇa saṃskāra* penetrates inside the metals during the course of transformation. For this, mercury should be treated with *nāgabhasma* prepared with *śilā* (realgar), and *vaṅga bhasma* prepared with *tālaka* (orpiment) for *pīṭakarma* and *śukla karma.* respectively.

14. *Parpaṭī :*

*Parpaṭī* is a preparation of mercury and sulphur. For this *Kajjalī* is melted on slow fire and poured on a banana leaf and made into thin flakes by pressing with another banana leaf and cow-dung mass. On cooling it is known as *parpaṭī* because of its shape which is like a *parpata (pāpaḍa).*

15. *Candrārka :*

*Candrārka* is an alloy made by mixing sixteen parts of silver with twelve parts of copper in molten state.

16. *Bandha/Bandhana :*

*Bandha* is a process in which the *cāñcalya* (excessive mobility) and

*durgrahatva* (difficulty to catch) properties of mercury are minimised or reduced completely by treatment of vegetable or mineral products.

17. *Āroṭa* :

Well purified mercury is called *Āroṭa*. It is good for *kṣetrīkaraṇa* and may destroy diseases also on internal use.

18. *Kṣetrīkarana* :

*Kṣetrīkaraṇa* is that measure through which body is made suitable for the internal use of mercury or *rasāyana therapy* by employing *pañcakarmas* (purifying measures) or by using minerals like sulphur *etc.*

19. *Sandhibandhana* :

*Sandhibandhana* is that in which the joints of *mūṣā* and *pidhānaka* or any other apparatus are sealed with cloth and clay or with any other sealing materials.

20. *Mūṣā* :

*Mūṣā* is a special type of apparatus recommended for use to remove the removable impurifies from the substances, or which may be used to heat the substances strongly for extracting their *satvas* (metallic contents), or mildly for converting them into ashes. Different *mūṣās* are said to have variable heat resistance capacity.

21. *Yantra* :

*Yantras* are apparatuses in which mercury or other substances are restrained/closed/kept for being treated with various *svedanādi* procedures, taking due care.

22. *Bahni Mṛtsnā* :

*Bahni mṛtsnā* is a heat resistant mixture made of *khaṭikā, lavaṇa* and *maṇḍūra* powder taken in equal parts and pasted with buffalo milk. It can stand high heating and is recommended for sealing the joints of *mūṣās*.

23. *Toya Mṛttikā* :

*Toya mṛttikā* is a water proof mixture made of mixing old *maṇḍūra, guḍa* and lime together and making their paste with *babbūla kvātha* to *leha* (semisolid)

like consistancy. It is also known as *jalamṛt* and could resist penetration of water, *i.e.*, could not be penetrated by water.

24. *Vaṅka Nāla :*

*Vaṅka nāla* is a bent tube made of earth or brass. Its length is one *aratni* (16") or one *hasta* (18"). Another bent tube of 5 *aṅgula* length is also attached to its lower end. It is used for blowing air through the mouth for increasing the intensity of fire.

25. *Siktha Taila :*

*Siktha taila* is a mixture of *siktha* (wax) and *tila taila* (gingily oil) in an appropriate proportion and mixed by heating both together and converting the mix into a butter like consistency.

26. *Mṛta Loha :*

The *loha* (metal or mineral) converted to ash by triturating and heating through *puṭa* system is known as *mṛta loha.* It should be *vāritara* and *rekhāpūrṇa* in properties.

27. *Drāvaka Varga :*

*Drāvaka varga* is a group of such drugs which, if mixed, makes the metals to melt easily. *Madhu, ghee, guḍa, guñjā, guggulu* and *ṭaṅkaṇa* are included in this group.

28. *Mitra Pañcaka :*

*Mitra pañcaka* consists of five drugs *i.e. ghee, madhu, guggulu, guñjā* and *ṭaṅkaṇa.* These help to lower the melting points to a considerable level when mixed with metallic or mineral products.

29. *Mṛdukara Varga :*

The drugs of this group help in removing or lessening the hardness of *lohas* (metals). Uterus and testes of buffalo, uterus and testes of sheep, kaliṅga (indrayava), dhava bīja, and bones of rabbits are included in this group.

30. *Pañcāmṛta :*

The five drugs of this group are considered as *amṛta* (nectar) in properties.

These are considered highly useful in *rasakarmas*. The following five materials, *viz.*, cow's milk, curd, ghee, honey and sugar are included in this group. It is specially indicated for *amṛtīkaraṇa* of *tāmra bhasma* (copper ash).

31. *Pañcagavya :*

Five materials obtained from cow are known as *pañcagavyas*. Cow's milk, curd, ghee, *mūtra* (urine) and *mala* (faeces) together constitute this group.

32. *Māhiṣa Pañcaka :*

The above mentioned five materials obtained from *māhiṣa* (buffalo) constitute *māhiṣa pañcaka.*

33. *Chāgala Pañcaka :*

These five materials obtained from goat are known as *chāgala pañcaka.*

34. *Pañcāmla/Amla Pañcaka :*

Five drugs having *amla* (sour) taste are known as *pañcāmla.* These are *kola, dāḍima, vṛkṣāmla, cullikā* and *cukrikā.*

35. *Pañca Mṛttikā :*

Following five materials, *viz.*, *iṣṭikā, gairika, loṇa, bhasma* and *balmīka mṛttikā*, together is known as *pañca mṛttikā.*

36. *Lavaṇa Pañcaka :*

Following five *lavaṇas* (salts) *viz.*, *samudra, saindhava, viḍa, sauvarcala* and *romaka*, form *lavaṇa pañcaka* group.

37. *Lavaṇa Ṣaṭka :*

If *culhikā lavaṇa* is added to the *lavaṇa pañcaka* then the resultant is known as *lavaṇa ṣaṭka.*

38. *Kṣāra Pañcaka :*

The following five *kṣāras* (alkaline substances) form *kṣāra pañcaka* group. These are *svarji kṣāra, taṅkaṇa kṣāra, palāśa kṣāra, tilanāla kṣāra* and *muṣkaka kṣāra.*

39. *Kṣāra Varga :*

Following groups of *kṣāras* may form *kṣāra varga* viz., *kṣāra dvaya, kṣāra traya, kṣāra pañcaka, kṣāra ṣaṭka, kṣārāṣṭaka, kṣārā daśaka* and *vṛkṣakṣāras:*

*Kṣāra dvaya* — *Svarji kṣāra, yava kṣāra :*

*kṣāra traya* — *Svarji kṣāra, yava kṣāra, tańkaṇa kṣāra :*

*Kṣara ṣaṭka* — *Lāṅgalī, tilanāla, mokṣaka, śigru, mayūraja* and *yavajakṣāras :*

*Kṣārāṣṭaka* — *Tilanāla, palāśa, mokṣaka, śigru, mayūrajakṣāra* and *kṣāra traya :*

*Vṛkṣa kṣāra* — The *kṣāras* obtained from vegetable drugs, viz., *tila, apāmārga, kadalī, palāśa, śigru, mokṣaka, mūlaka, ārdraka* and *ciñcākṣāras* are included.

*Ksara daśaka* — In this group also vegetable kṣāras *viz., cukrikā, pīlu, palāśa, mūlaka, śigru, citraka, nimba, mocaka, śikharī* and *ikṣukṣāra,* are included.

40. *Pañca Tikta :*

Following five bitter drugs *viz., guḍūcī, nimbamūla, bhiṣak-matā, nidagdhikā,* and *paṭala patra* are included in this group.

41. *Kṣīra Traya :*

Following three *kṣīras* (latexes) *viz., arka kṣīra, snuhi kṣīra* and *vaṭa kṣīra* obtained from vegetable sources are known as *kṣīra trayas.*

42. *Śveta Varga :*

It is a group of white coloured vegetable drugs. In this group *tagara, kuṭaja, kanda, guñjā, jīvantikā* and *śveta kamala kanda* are included.

43. *Kṛṣṇa Varga :*

This group includes those drugs which turn black on cutting or impart black colour. They are *kadalī, kāravellī, triphalā, nīlikā, nala, pańka* (mud), *kāsīsa* and *bālāmra* (green mango fruit).

44. *Pīta Varga :*

This group includes the drugs which either have yellow flowers or yellow wood, *viz., kiṃśuka, karṇikāra, haridrā, dāruharidrā.*

45. *Rakta Varga :*

This group includes the drugs which are either red in colour or imparts red colour to others. These are *kuśumbha, khadira, lākṣā, mañjiṣṭhā, rakta candana, akṣīva,bandhujīva, karpūra-gandhinī* and *mākṣika.*

46. *Viṭ Varga :*

This group includes the excreta of the following animals, *viz., pārāvata, cāṣa, kapota, kalāpī, gṛdhra* and *kukkuṭa.* These are used for the purification of *lohas.*

47. *Mūtra Varga :*

In this group the urine of the following animals and humans is included. These are *hastī, karabha, mahiṣī, khara, aśva, go, avi, ajā, nara* and *nārī.*

Further, the menstrual discharge of women and semen of men are also mentioned useful in *rasa karmas* in addition to their urine.

48. *Dugdha Varga :*

In this group the milk or the latex of the following animals and humans and also of herbs are found included. They are milk of *hastī, aśva, vanitā, dhenu, gardabhī, chāgī* and *āvika,* and the latex of *udumbar, aśvattha, arka, nyagrodha, tilvaka* and of *snuggaṇa* (various varieties of *snuhī).*

49. *Vasā Varga :*

In this group the fat of the following animals *viz., jambūka, maṇḍūka, kachhapa, karkoṭī, śiśumārī, go, śūkara, nara, ajā, uṣtra, khara, meṣa* and *mahiṣa* are included.

50. *Viṣa Varga :*

In this group following poisonous drugs are included. They are *śṛṅgika, kālakūṭa, vatsanābha, saktuka* and *pīta.* These are all virulent poisons.

51. *Upavisa Varga :*

In this group the drugs having less virulent poisonous effects are inlcuded. These are *laṅgalī, visamuṣṭi, karavīra, jayā (bhaṅgā), nīlaka (bhallātaka), kanaka,* and *arka.*

52. *Amla Varga :*

In this sgroup the drugs having sour taste *viz., amlavetas, jambīra, nimbuka, bījapūra, cāṅgerī, canakāmla.amlikā, kola, dāḍima, ambaṣṭhā, tintiḍīka, nāraṅga, rasa-patrikā* and *karavanda* are included. Of these *caṇakāmla* and *amlavetasa* are considered the best.

53. *Taila Varga :*

In this group following drugs containing oil are included. They are *kaṅguṇī, tumbinī, ghoṣā, karīraphala, śrīphala, kaṭuvārtāka, siddhārtha, somarājī, bibhītakabīja, atasī bīja, mahākālī, nimba bīja, tila bīja, apāmārga, devadālī, dantī, tumburu, aṅkola bīja, dhastūra bīja, bhallātaka phala,* and *palāśa bīja.*

54. *Madhura Traya :*

Following three sweet substances are included in this group. These are *ghee, guḍa* and *mākṣika* (honey).

55. *Śodhanīya gaṇa :*

Following three drugs *viz., kāca, taṅkaṇa* and *kṣiprā (muktā śukti)* are included in this group. These drugs are used to remove the impurities of the *satvas,* solidified mercury, and the lohas (metals).

56. *Kakārādi Gaṇa :*

In this group the drugs having *ka* as the first letter are included. According to Devīśāstra following drugs are included in this group. They are *kaṇṭārīphala, kāñjika, kamatha, kaṭu taila, rājikā, nimbūka, kataka, kaliṅga phala, kuṣmāṇḍaphala, karkārī, ketkī, kukkuṭa, kāravellaka phala, karkoṭī phala, vṛntāka* and *kapitthaka.*

And according to Śrikaṇṭhadeo *kaṅgu, kanduka, kola, kukkuṭa, kroḍa phala, kulattha, kaṇṭakārī, kaṭutaila, kṛṣṇagalaka, kūrma, kalāya, karkāru, kaṭhillaka, kataka, karkoṭaka, karkaṭī, kālī, kāñjika* also belong to this group.

In this way, a few remaining technical terms found in other texts are collected and described for the benefit of scholars of *Rasa Śāstra.*