

# SOULLESS MATTER, SEATS OF ENERGY

Metals, Gems and Minerals  
in South Asian Traditions

Edited by Fabrizio M. Ferrari and Thomas Dähnhardt



*Soulless Matter,  
Seats of Energy*

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## Chapter 5

# Mercury Tonics (*Rasāyana*) in Sanskrit Medical Literature

DAGMAR WUJASTYK<sup>1</sup>

The use of mercury has a long history in Indian medicine with clear evidence of mercurial treatments found in Sanskrit medical treatises from about the seventh century. Mercury medicines were understood to be particularly potent remedies and as such were often used in the treatment of serious diseases that were difficult to cure. Mercury preparations were also used in rejuvenation therapy (*rasāyana*) – one of the eight classical areas of Indian medicine. *Rasāyana* sections in Sanskrit medical works describe the preparation and application of tonics for restoring health, stopping and even reversing the aging process, generally improving physical appearance and significantly increasing lifespan.

While rejuvenation therapies are already described in the oldest Sanskrit medical works known to us, the first mention of mercury as a *rasāyana* ingredient occurs in a seventh century treatise called *Aṣṭāṅgahṛdayasaṃhitā* ('Heart of medicine'). From about the eleventh century, mercury became a common ingredient in *rasāyana* therapy with works such as Cakrapāṇidatta's *Cakradatta* (eleventh century) and Vaṅgasena's

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*Cikitsāsārasaṅgraha* (eleventh/twelfth century) recording a number of recipes for mercurial tonics.

This chapter will provide a brief survey of the uses of mercury preparations in *rasāyana* therapy, discussing their position within rejuvenation therapy in regard to other *rasāyana* formulations and exploring their link with Indian alchemical traditions.

## THE PRACTICE OF RASĀYANA

In the context of classical Indian medicine or Āyurveda, the Sanskrit term ‘*rasāyana*’ is used to describe a sub-discipline of medicine; the therapies that together constitute this sub-discipline; and finally, the medical formulations used in these therapies. Broadly speaking, *rasāyana* therapies and medicines are meant to prolong life, restore youthfulness and promote physical health and mental acuity, and the formulations could therefore perhaps be generally termed ‘tonics.’ However, the various medical authors present a wide variety of approaches to the subject and in some works, *rasāyana* formulations are presented as medicines for specific diseases rather than for general health, rejuvenation or longevity. Somewhat confusingly, the term *rasāyana* is also used to refer to the Indian alchemical tradition, which postdates Āyurveda by several centuries at least in its written form. In alchemical literature, some substances and formulations are also called *rasāyanas*. Here again, *rasāyana* can denote quite different functions.

Both in medical and in alchemical works, a wide range of substances are used for *rasāyana* purposes: plant materials, animal products, minerals and metals. In this chapter, I shall focus on metals, and in particular, on mercury as constituents of *rasāyana* formulations. I will provide an overview of the uses of mercury in *rasāyana* therapy, discussing the substance’s position in regard to other *rasāyana* materials and exploring how or if the use of mercury in Āyurvedic *rasāyana* links with the *rasāyana* of the Indian alchemical tradition.

## MERCURY: THE BEST OF ALL SUBSTANCES

A typical alchemical work will often begin with the praise of mercury, extolling its virtues as an elixir of immortality and as a powerful medicine, and presenting it as an object and subject of worship. Consider, for



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example, this proverb from the *Rasaḥṛdayatantra* (tenth/eleventh centuries), one of the earliest alchemical works known to us at present:<sup>2</sup>

After it has been solidified, it cures disease, having been bound, it gives liberation;  
having been thoroughly killed, it gives immortality. What is more compassionate than mercury?<sup>3</sup>

A further passage emphasizes the unique potential of mercury to act as a rejuvenant as well as to make its user immortal:

Just as all beings are inevitably absorbed in the supreme spirit, the king of essences (i.e. mercury) alone bestows immortality and youth to the body.<sup>4</sup>

And the superiority of mercury to other substances is explained as follows:

No potion of roots or metals that is itself unstable, can be burnt, rotted or dried up is capable of producing its (i.e. the body's) stability. Woods and herbs are absorbed in lead, lead in tin, and tin in turn in copper, copper in silver, silver in gold and gold in mercury.<sup>5</sup>

Mercury's apparent ability to absorb other substances is interpreted as a sign of its being at the top of a power hierarchy, both because of being the last, itself unabsorbable substance, and because in alchemical procedures, it would have been given other substances and metals to absorb, and therefore is then considered to have assimilated the essence or power of these other substances.

2 See White (1996: 146) on the date of the *Rasaḥṛdayatantra*.

3 The passage in the RH 1.3 reads: *mūrchitvā harati rujaṃ bandhanam anubhūya muktido bhavati | amarīkaroti sumṛtaḥ ko 'nyaḥ karuṇākaraḥ sūtāt* || A parallel passage in RS (1.34) reads: *mūrchitvā harati rujaṃ bandhanam anubhūya muktido bhavati | amarīkaroti hi mṛtaḥ ko 'nyaḥ karuṇākaraḥ sūtāt* || See White's discussion of the passage in various alchemical works and parallels in the *Haṭhayogapradīpika* (1996: 274–75 and 495n55).

4 RH 1.13: *paramātmanīva niyatam layo yatra sarvasattvānām | eko'sau rasarājaḥ śarīram ajarāmaram kurute* || See also the parallel passage in RS 1.43, which substitutes 'satatam' for 'niyatam'.

5 *tatsthairyaṃ na samarthaṃ rasāyanaṃ kimapi mūlaloḥādī | svayamasthiraśvabhāvaṃ dāhyaṃ kledyaṃ ca śoṣyaṃ ca* ||11|| *kāṣṭhausadhyo nāge nāgaṃ vaṅge vaṅgamapi līyate śulve | śulvaṃ tāre tāraṃ kanake kanakaṃ ca līyate sūte* ||12|| See also RS 1.40–41 for a parallel passage.



However, in its natural, liquid state, mercury is unstable, can be burnt, or dried up, though not rotted. And to counter these or other unwelcome properties, alchemists developed a series of eighteen procedures that would make mercury stable. The terms ‘solidified,’ ‘bound’ and ‘killed’ we saw in the quotation from the *Rasahṛdayatantra* above are technical terms that refer to some of these stages in the processing of mercury.

The eighteen procedures or *saṃskāras* the alchemists devised were thought to remove any faults in mercury, in particular its instability or volatility, contamination with other matter, its heaviness and its reaction to fire, leaving an end product that was then considered suitable for use in transmutational alchemy.<sup>6</sup> The alchemists would thus use this product for what they called *dehavāda*, the ‘piercing of the body,’ which was meant to confer immortality, but also to let the user achieve spiritual liberation in a living body. For medical purposes, eight procedures were deemed sufficient by the alchemists, which should include alchemical *rasāyana* formulations against diseases.<sup>7</sup>

It is clear from the above quotations that Indian alchemists regarded mercury as a superior substance that was uniquely suitable for the purposes of rejuvenation and the prolongation of life. This sentiment is echoed in later medical literature, which often takes its cue from the alchemical works in regard to the use of mercury and other metals. For example, the *Bhāvaprakāśa*, an important medical compendium from the sixteenth century,<sup>8</sup> states the following in its entry on mercury in the glossary section:

Mercury has all the six flavours and is unctuous; it mitigates all three humours and is a *rasāyana*;  
it assimilates to itself and it is a powerful aphrodisiac; it always strengthens eyesight;  
it is declared the destroyer of all diseases and especially removes all skin diseases.

After it has been solidified, it cures disease, having been bound, it lets one move in the sky;  
having been killed, it gives youth. What is more compassionate than mercury?

6 For a detailed description and analysis of these procedures, see White (1996: 265–69).

7 It should be noted that medical works typically do not quite follow the alchemical lists of *saṃskāras* in their descriptions of the processing of mercury, neither in number nor in sequence. See Wujastyk (2013: 20) on the eight medical *saṃskāras*.

8 See Meulenbeld (1999–2002, IIA: 246) on the date of *Bhāvaprakāśa*.



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Be it an incurable disease or one for which there is no treatment, mercury removes the diseases of men, elephants and horses.<sup>9</sup>

The *Bhāvaprakāśa*'s entry on mercury combines both alchemical and medical elements. The middle part of this statement is familiar from the above quotation from the *Rasahṛdayatantra*. The difference is that Bhāvamiśra, the author of the *Bhāvaprakāśa*, promises the ability to walk in the sky, i.e. fly, rather than spiritual liberation, and youth, rather than immortality. This does not, however, necessarily mark a contrast between alchemical soteriological aims and more mundane medical ones: We also encounter the idea that mercury counters disease and affords the consumer the ability to fly in other versions of this proverb in alchemical literature. For example, the *Rasārṇava*, another early and very influential alchemical work (c. twelfth century),<sup>10</sup> compares mercury and breath, stating that both will drive away disease and afford the power of flight.<sup>11</sup>

The first part of Bhāvamiśra's entry on mercury is positioned squarely within a medical framework with its reference to the six flavors, the unctuousness of mercury and the humors. It is one of the central Āyurvedic concepts that the body contains three primal substances called *doṣa* (often translated as 'humor' in analogy to the humors of ancient Greek medicine). These substances are understood to fundamentally sustain the functioning of the body, but also represent potential sources for the arising of disease.<sup>12</sup> Āyurvedic authors write of three (sometimes four) humors: wind (*vāta*), bile (*pitta*) and phlegm (*kapha*), each of which is associated with particular properties.<sup>13</sup> These characteristics are related to the humors'

9 BhāPr. *Pūrvakhaṇḍa Nighaṇṭubhāga Dhātvaḍivarga* 91–92, 94–95. See also Wujastyk (2013: 16). The passage reads: *pāradah saḍrasah snigdhas tridoṣaghno rasāyanaḥ* ||91.2|| *yogavāhi mahāvṛsyah sadā dṛṣṭibalapradah* | *sarvāmayaharah prokto viśeṣāt sarvakuṣṭhanut* ||92|| *mūrchitvā harati rujaṃ bandhanam anubhūya khe gatiṃ kurute* | *ajarīkaroti hi mṛtaḥ ko 'nyaḥ karuṇākaraḥ sūtāt* ||94||

10 See Meulenbeld (1999–2002, II A: 684–85) on the presumed date of the *Rasārṇava*.

11 However, according to the *Rasārṇava*'s version, mercury and breath would give the practitioner neither immortality nor youth, but would revive only themselves after being killed. Ras 1.19: *mūrchito harati vyādhiṃ mṛto jīvyati svayam* | *baddhah khecaratām kuryāt raso vāyuṣ ca bhairavi* ||

12 See, for example, CaS.Vi (1.5) for a definition of the *doṣas* and their functions. See also Scharfe (1999) on the evolution of this concept.

13 SuS.Sū (XXI.28) counts blood as a fourth humor. The more or less standard translation of the terms *vāta*, *pitta* and *kapha* as wind, bile and phlegm, respectively, is again historically connected with the perceived correspondence of these Āyurvedic concepts with Greek ones. The terms 'wind,' 'bile' and 'phlegm'



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relative composition in regard to the five elements (wind, ether, earth, fire and water) which are understood to make up the fabric of the material world. The elements have particular properties: For example, water is liquid, unctuous, cold and soft; fire is hot, sharp, light and rough.<sup>14</sup> Disease may arise when there is an imbalance in the proportional quantity of the humors, i.e. a pathological predominance of one or two of the humors; if one or several of the humors spread outside their normal pathways; or if one or several of them are hindered from flowing through their normal pathways. Treatment aims at counteracting a humor's abnormal growth and thus avoiding its overflow from the area that is supposed to contain it. This is done by countering the affected humor(s) with substances that have opposite characteristics to them.

Āyurvedic works present a corresponding system of classifying medicinal substances according to certain categories, typically flavor (*rasa*), potency (*vīrya*), transformed tastes (*vipāka*) and special power (*prabhāva*).<sup>15</sup> Some sources add a further category to the other four, namely quality (*guṇa*). There are six flavors (sweet, salty, sour, bitter, astringent and pungent), three transformed tastes (sweet, sour and pungent), about twenty qualities (pairs of opposites such as light, heavy, unctuous, dry, sharp, smooth, etc.), two potencies (hot and cold), and one special power, all of which are thought to have specific effects on the humors in the body.<sup>16</sup> Just as with the humors, the specific qualities of any substance are related to its relative composition in regard to the five elements. The flavors of substances are formed by the elements they are made of and they therefore share the elements' properties. The *Carakasamhitā*, an encyclopedic compilation of medical knowledge that roughly dates to the early centuries of the Common Era,<sup>17</sup> explains that sweetness is produced by a predominance

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should here be understood as technical terms with very specific associations. For a modern reader, these terms may be misleading, 'bile' bringing to mind the secretion of the liver, and 'phlegm' a liquid secreted by the mucous membranes rather than the concepts of humoral theory. It is difficult to adequately translate such technical terms since no equivalent concept exists today.

14 See CaS.Sū xxvi.11.

15 See Wujastyk (2003:198) on these categories.

16 This is a simplified synopsis: The different Āyurvedic sources vary in their principles of substance categorization and there is also rather more detail to the classification of substances.

17 Caraka, the compiler of the *Carakasamhitā*, probably lived in the first century CE. He presented his work as a revised version of an ancient work on medicine (the *Agniveśatantra*, according to a later redactor). In turn, the version of the *Carakasamhitā* that has been transmitted to us is a further redacted version



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of the element water in a substance, saltiness by a predominance of water and fire, pungency by wind and fire, bitterness by wind and ether.<sup>18</sup> Once a substance's flavor is identified, it can be used to effect or counter the growth of a humor. For example, pungent, bitter and astringent substances combined together are thought to increase the humor wind, or conversely, a combination of sweet, sour and salty substances is thought to reduce wind.<sup>19</sup> The categorization of medicinal substances according to their flavors is fairly complicated, since one substance often combines in itself more than one flavor. Indeed, the *Carakasamhitā* counts sixty-three possible combinations of the six canonical flavors.<sup>20</sup> So, the flavors of drugs do not always tally with their actions upon symptoms that are understood to reflect problems with specific humors. The effects of the drugs are then explained in terms of their flavors having been transformed through digestion (an originally bitter plant having become pungent after digestion, for example) and/or with their potency, i.e. generating heat or cold. Heat, for example, is supposed to reduce the humor wind while cold would further increase it. Finally, the last category, 'special power,' is used to explain specific actions of substances that cannot be attributed to the other qualities. For example, if two plants have the same flavor, transformed taste, qualities and potency, but one acts as a purgative while the other doesn't, purging would be the first plant's special power.

Bhāvamiśra's brief characterization of mercury as having all the six flavors and being unctuous generally defines mercury as a beneficial substance: Having all six flavors points to a balanced distribution of all six elements which would mean that an intake of mercury should not create an imbalance of humors in the body. In a sense, this would make it a neutral substance. It is, however, difficult to see how an even distribution of elements would help counter an already extant imbalance of the humors. Nevertheless, according to Bhāvamiśra, mercury mitigates all three humors, and thus is a panacea, a 'destroyer of all diseases.'

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that was edited and added to by a scholar called Dṛḍhabala in about the fifth century. For a detailed discussion of the issues surrounding the dating of the *Carakasamhitā*, see Meulenbeld (1999–2002, 1A: 105–15). Also see the article by Maas (2010) on the complicated transmission history of the *Carakasamhitā* after Dṛḍhabala's redaction.

18 See CaS.Sū xxvi.40.

19 See CaS.Vi i.7.

20 See CaS.Sū xxvi.14–22. On the combinatorics of tastes and humors in Āyurveda, see Wujastyk (2000).



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## RASĀYANA IN ĀYURVEDIC LITERATURE

Given that mercury is specifically defined as a rejuvenating agent in the glossary section, it comes as a surprise, then, that none of the recipes in the *Bhāvaprakāśa*'s chapter on *rasāyana* contain mercury.<sup>21</sup> This is particularly strange, since the *Bhāvaprakāśa* contains many other kinds of recipes with mercury, as well as a large section on how to prepare mercury for medical use.<sup>22</sup> The very short *rasāyana* chapter (only fifteen verses) lists nine recipes, all of which contain plant materials and are meant to rejuvenate, prolong life or enhance intelligence. Only one recipe contains a metal, namely iron. This formulation, however, is attributed with bestowing immortality upon its consumer. The other recipes follow older ones from the early medical treatises to which we will now turn.

First descriptions of *rasāyana* recipes and treatment methods appear in Sanskrit medical literature about two thousand years ago. In the *Carakasamhitā*, *rasāyana* is defined as one of eight branches of medicine.<sup>23</sup> In its large chapter on *rasāyana*, the *Carakasamhitā* presents the subject as follows:

Through *rasāyana*, a man gains longevity, memory, mental vigor, health, youthful strength, a great radiance, complexion and voice, an extremely strong body and keen senses, mastery of speech, respect and beauty. *Rasāyana* is a means for attaining the best bodily elements, beginning with *rasa*.<sup>24</sup>

21 The *rasāyana* section is the second of two chapters of the last part of the *Bhāvaprakāśa*, the *uttarakhaṇḍa*.

22 See Wujastyk (2013: 22–31) on the use of mercury in the *Bhāvaprakāśa*.

23 The eight branches of medicine as listed in the *Carakasamhitā* are: (1) *kāyacikitsā* (general medicine), (2) *śālākya* (the [surgical] treatment of body parts above the shoulders), (3) *śalyāpahartṛka* (the removal of foreign bodies – surgery), (4) *viṣagaravairodhikaprāśamana* (toxicology), (5) *bhūtavidyā* (the treatment of possession by various supernatural beings), (6) *komārabhṛtyaka* (pediatrics), (7) *rasāyana* (restorative therapies) and (8) *vājīkaraṇa* (aphrodisiacs).

24 CaS.Ci 1.1.7–8: *dīrghamāyuh smṛtiṃ medhāmārogyaṃ taruṇaṃ vayaḥ| prabhāvarṇasvaraudāryaṃ dehendriyabalaṃ param ||7|| vāksiddhiṃ praṇatiṃ kāntiṃ labhate nā rasāyanāt| lābhopāyo hi śastānām rasādīnām rasāyanam ||8||* For a discussion of this passage, see Wujastyk (2015). In this instance, *rasa* refers to food that has undergone the first process of digestion.



Another early Sanskrit medical work, the *Suśrutasaṃhitā* (c. third century CE<sup>25</sup>) also contains a *rasāyana* section, describing treatments against afflictions, for improving intelligence and for longevity, and for preventing natural afflictions or vulnerabilities, i.e. thirst, hunger and tiredness.<sup>26</sup>

Despite a general consensus in aims and methods, a comparison of the *rasāyana* recipes in the *Carakasamhitā* and the *Suśrutasaṃhitā* shows them to differ greatly from each other with not a single recipe shared between them, though with some overlap in single ingredients. However, a notable shared element of these works' presentations of *rasāyana* is that the majority of their recipes are based on herbal ingredients that are mixed with animal products (milk, butter, ghee and honey). Some formulations also include metals: The *Suśrutasaṃhitā* describes several recipes with gold as an ingredient.<sup>27</sup> These recipes widen the above-mentioned range of *rasāyana* applications in that they are supposed to help the person using them to overcome misfortune, to avert the threat of death, to subdue the king or to confer power and charm.

The *Carakasamhitā* uses a wider range of metals for its *rasāyana* medicines: gold, copper, silver and iron.<sup>28</sup> These are typically added in powdered form, rendering the formulation more potent or more suitable for particular patients through their addition. Iron takes a prominent place among the metals in Caraka's *rasāyana* recipes and is added to several of them. It is also used as a main ingredient in the '*lauhādirasāyana*' ('iron, etc. elixir'). This is an important recipe, because it is the first description of a method of processing metals. It foreshadows what later becomes a prominent feature in Indian medicine, namely that metallic, mineral and poisonous herbal ingredients are processed before they are used in formulations. The idea is that the substances are made both safer and more potent through the various processing methods.

The relevant passage in CaS (Ci 1.3.15–23) describes how long and thin strips of iron are heated until red-hot and then dipped in a mixture of the three myrobalsans, cow's urine and alkali prepared from various plant materials. The resulting powder is mixed with honey and the juice of the

25 For a survey of the proposed dates of the *Suśrutasaṃhitā*, see Meulenbeld (1999–2002: 1A, 342–52).

26 The *Suśrutasaṃhitā*'s *rasāyana* section is found in chapters xxvii–xxx of the *Cikitsāsthāna* (the section on therapeutics).

27 See SuS.Ci xxviii.14–24.

28 Gold, silver, copper and iron are mentioned in Ci 1.1.58. Ci.3.46–47 mentions gold and 'all metals' (*sarvalauha*), which probably means copper, silver and iron, but may also include lead and tin.



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Indian gooseberry and stored for a year in a pitcher smeared with ghee. This formulation is described as a particularly potent mixture with a host of wonderful effects on the user's health, looks and mental powers.

Caraka notes that the same method of preparation can also be applied to other metals, and particularly mentions corresponding gold and silver *rasāyanas* as providing longevity and alleviating disease.

Another notable *rasāyana* substance that deserves mention as it is connected to metals and used in multiple *rasāyana* formulations in the *Carakasamhitā* (though not in the *Suśrutasamhitā*) is shilajit (Skt. *śilājatu*), or rock resin. The Āyurvedic authors differentiate between four kinds of shilajit, each understood to be an exudate of a different metal, namely gold, silver, copper and iron, respectively. Caraka considers the iron kind the best, especially for the purposes of *rasāyana*, and describes it as having a beneficial effect on all three humors.<sup>29</sup>

It should be noted that neither the *Carakasamhitā* nor the *Suśrutasamhitā* use mercury in their *rasāyana* recipes. This is not surprising, given that there is little evidence for the use of mercury in medicine before the seventh century. There are possible exceptions to this rule: A verse in the *Carakasamhitā* in a section on skin disease states that *rasa*, which cures all diseases, should be used by persons afflicted with skin disease. According to Dutt (1922: 27) the commentators interpret *rasa* as mercury.<sup>30</sup> However, as the term *rasa* signifies many other things besides mercury, such as the sap or juice of plants or fruits, et cetera, one cannot decide with any certainty that *rasa* indeed means mercury here, though it also cannot be entirely discounted, especially since sulfur and pyrites are mentioned in the same sentence. In the *Suśrutasamhitā*, we find a curious reference to mercury in a chapter on poisons, in which Suśruta claims that playing various musical instruments smeared with anti-poison will cure food poisoning in animals and humans. One of the ingredients of Suśruta's anti-poison paste is *sutāra*, which is a term for mercury found in later medical literature.<sup>31</sup> Finally, also in SuS (Ci xxv.38–42), there is a recipe for an ointment against freckles, wrinkles, eruptions in the face, skin diseases in general and cracked feet, which lists *pārada* as an ingredient.

29 See CaS.Ci 1.3.48–65 on *śilājatu*, especially 55–61 for a description of the four different kinds of *śilājatu* and their characteristics.

30 The passage in question is CaS.Ci vii.71.

31 See SuS.Ka iii.13–15 and Wujastyk (2003: 78–79) on this section in the *Suśrutasamhitā*.



## MERCURY IN RASĀYANA RECIPES: VĀGBHAṬA'S WORKS

It is certain that medical compounds containing mercury were used by the time the works ascribed to Vāgbhaṭa, the *Aṣṭāṅgahṛdayasaṃhitā* and the *Aṣṭāṅgasamgraha*, were written (c. early seventh century CE).<sup>32</sup> Both works prescribe a medicinal paste for the treatment of an eye disease that contains *rasendra*, an unequivocal term for mercury.<sup>33</sup> The *Aṣṭāṅgahṛdayasaṃhitā* also has a recipe for a topical cream against freckles, where the term for mercury is *pārada*.<sup>34</sup> Both works further prescribe *pārada* as a *rasāyana*.<sup>35</sup> Vāgbhaṭa's mention of mercury as a *rasāyana* reads as follows:

The depleted tissues of the body of one who eats shilajit, honey, false black pepper, ghee, iron, chebulic myrobalan, mercury (*pārada*), and pyrites are replenished within fifteen nights like the moon.<sup>36</sup>

This recipe (or perhaps rather list) occurs within a large group of short recipes most of which are purely herbal while a few contain iron, other metals or shilajit. This recipe stands out, not only for its mention of mercury, but also because it is not quite clear whether the named ingredients should be taken together in one formulation, or whether this is simply a list of restorative substances that might be taken on their own or as components of other formulations.<sup>37</sup>

32 The given date is a rough estimate. The authorship, or perhaps more accurately, compilership of these two works, and consequently also their relative chronology is a matter of some discussion, which has been summarized by Meulenbeld. See his analysis on the identity of Vāgbhaṭa (1999–2002, IA: 597–602), on the dating of the *Aṣṭāṅgasamgraha* (ibid.: 613–31) and on the dating of the *Aṣṭāṅgahṛdayasaṃhitā* (ibid.: 631–35).

33 AHS.Utt XIII.36 and ASaṃ.Utt IL.392.

34 AHS.Utt XXXII.31.

35 See AHS.Utt XXXIX.161. Eliade (1969: 279) unfortunately introduced the mistaken idea that mercury was mentioned as a *rasāyana* substance in the Bower Manuscript. This false assertion (which Eliade attributed to Hoernle himself) is then repeated later by other scholars (for example, by Leslie 2009: 45). In the passage in question, the word Eliade understood as mercury is 'rasa' and Hoernle (1893: 107n123) explicitly noted in his edition and translation of the text that this does not denote mercury. He translated it as 'juice of sugar-cane.'

36 See AHS.Utt XXXIX.161 and ASaṃ.Utt XLIX.392: *śilājatukṣaudraṇḍaṅgasarpīr-lohābhayāpāradataṅgyabhakṣaḥ | āpūryate durbaladehadhātus tripañcarātreṇa yathā śāśāñkaḥ ||* The same passage occurs in alchemical literature, in Ras XVIII.14 and RS XXVI.12.

37 The surrounding recipes give instructions on the formulation and processing of pills and pastes and the admixture of herbal, metal and mineral ingredients with carrier substances such as ghee or honey.

The reference to the waxing moon gives a time frame for their use, but also presents an image of their effects: The body is filled with the essential substances and the nutrition it needs, making it bigger and stronger, thickened and buffered from within. The suggestion that ‘depleted tissues will be replenished’ refers to the Āyurvedic concept of the transubstantiation of body tissues. The Sanskrit word for what I have called body tissues is *dhātu*, literally ‘constituent part’ or ‘element.’ These are defined as essential parts of the body that evolve in succession from each other. The body, which consists of the five great elements of wind, ether, fire, earth and water, is nourished and constantly built up through the intake of food and drink which, as we have seen, also consist of combinations of the five elements.

In the *Aṣṭāṅgaḥṛdayasaṃhitā*, the list of *dhātus* begins with chyle (i.e. food that has undergone the first process of digestion). Chyle forms blood, blood forms flesh, flesh forms fat, fat becomes bone, bone makes marrow and marrow develops into semen.<sup>38</sup> And semen is understood to be not only the end product of the succession, but also the most refined and important substance, something akin to life essence. This list of body tissues (or chain of events) is also what Caraka refers to in his definition of *rasāyana*, which concludes with ‘*rasāyana* is a means for attaining the best bodily elements, beginning with *rasa*.’

Thus we might infer that certain medicinal substances were thought of as providing similar or even superior nourishment to regular food. For a thorough *rasāyana* treatment, the therapy begins with cleansing procedures. The body is rid of waste products, opening the channels in the body for a better absorption of the medicines. Then treatment proper begins with the intake of the *rasāyana*, repeated daily in the morning. In one passage, Caraka notes that the *rasāyana* should be digested before partaking of a light meal of rice with milk and ghee.<sup>39</sup> The suggestion is that normal food intake is strongly reduced, the *rasāyana* functioning as a substitute. The *rasāyana* is now the starting point in a chain of transformation in which the tissues of the body begin to be replaced as one constituent transforms into the next. As it provides the basic building blocks from which the physical parts of the body are put together, one could say that the *rasāyana* becomes the body. The process is the same with regular food, but the difference is that a *rasāyana* provides more suitable materials and

38 See AHS.Sū xi. However, also see Maas (2008: 135–46) for an overview of *dhātu* lists in other medical and non-medical works, in which he shows that other lists have both different beginnings, additional elements and different sequences.

39 See, for example, CaS.Ci i.1.52–53 and 58.



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therefore improves the very fabric of the body. Better raw or processed materials that are appropriately mixed together and/or suitably processed should accordingly equal a better body.<sup>40</sup>

### MERCURY: JUST ANOTHER INGREDIENT?

It should be noted that Vāgbhaṭa does not promise any special effects for mercury and also does not present it as better, or more potent than any of the other substances in his recipe (or list). It seems that at the time he was compiling his works, mercury was not yet regarded as a particularly noteworthy substance in the Āyurvedic tradition. Mercury was only slowly accepted into Āyurvedic pharmacopoeia: It does not occur as an ingredient in either the *Mādhavanidāna* (c. eighth century), or the *Kāśyapasamhitā* (c. seventh century) and it only features in a single recipe in the *Siddhayoga* by Vṛnda (c. ninth or tenth century).<sup>41</sup> The recipe in question is an ointment against lice made of datura (*dhattūra*) and mercury (*rasendra*).<sup>42</sup>

Then, the eleventh century *Cakradatta* (also called *Cikitsāsamgraha*) by Cakrapāṇidatta gives about nine recipes for mercurial medicines, all for internal use.<sup>43</sup> Two of the recipes that contain mercury are *rasāyana* formulations. In both recipes, copper is the main ingredient. The first is called the ‘six-part copper compound’ (*ṣaḍaṅgatāmrayoga*), the six parts being copper, mercury, mica, long pepper (*pippalī*), false black pepper (*viḍaṅga*) and black pepper (*marica*). A closer look reveals the recipe to be more complicated, however, as the copper, mercury and mica all need to be processed first. In the case of copper, this means rubbing thin leaves of copper with sulfur or salts. It is then heated and immersed in sour gruel mixed with *nirguṇḍī* (*Vitex negundo* L.) paste. The sediment is collected and rubbed

40 The effects of *rasāyanas* on cognitive function and the senses are less easily explained according to this model. However, one should keep in mind that the elements present in foodstuffs or medicines also affect the humors of the body, and these are understood to have a direct influence on the mind and the sense organs and faculties, et cetera. On the categories of mind, sense organs, sense faculties, intellect and being and their relation to the five great elements, see CaS.Sū VIII. On the use of food to maintain positive health and to control the sense faculties, see in particular CaS.Sū VIII.20. Also see Roṣu (1978: 157–214).

41 On the dates of the *Mādhavanidāna*, the *Kāśyapasamhitā* and the *Siddhayoga*, see Meulenbeld (1999–2002, IIA: 70–72, 39–41 and 81–82).

42 See Meulenbeld (1999–2002, IIA: 80) on mercury in the *Siddhayoga*.

43 For the date of the *Cakradatta*, see Meulenbeld (1999–2002, IIA: 93).



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with half its weight in sulfur. This mixture is then roasted in the pit cooking method (*puṭapāka*). That is, a pit is filled with dried cow pats. A sealed vessel containing the mixture is placed on top and covered with an equal amount of cow pats which are then set on fire.

The processing of mica is slightly less complicated: Mica is mixed with the pulp of *hīlamocī* (*Enhydra fluctuans* Lour.) root, placed in a sealed earthen saucer and heated intensely. It is then macerated with sour gruel until it loses its luster. In turn, mercury is processed by rubbing it with processed copper. It is then made into a bolus and steam-heated with rain water mixed with *nirguṇḍī* paste.

Finally, the processed powders of copper, mercury and mica are mixed with the three kinds of pepper. The resulting preparation is a *rasāyana* that can be used for various abdominal disorders and wasting disease.<sup>44</sup>

The second copper *rasāyana* is called 'seven-part copper compound' (*saptāṅgatāmrayoga*), though it is difficult to discern which seven parts are meant exactly. In this recipe, leaves of Nepalese copper are covered on all sides with sulfur and placed in a sealed earthen vessel and then roasted in a sand bath, i.e. a vessel filled with sand and sealed with mud. The sublimated copper is collected.

In the next step, sulfur is melted in an iron pan. The processed copper is added and then mixed with a paste of processed mercury and sour gruel. Eight drops of ghee are added to the mix, which is then taken off the fire, poured into a stone mortar and macerated with *alambuṣā* (water mimosa?) juice. The mixture is then put back on the fire and stirred until it is dry. In a further step, the dry mixture is again mixed with *alambuṣā* juice and formed into a round mass. This is covered with a cloth smeared with a paste of black pepper, long pepper and dried ginger and then placed into a pouch. It is then heated in clarified butter until the contents have become hard. This is taken together with ground black pepper, long pepper and dried ginger and the powder of the three myrobalans. This medicine is a *rasāyana* that can be used for abdominal complaints.<sup>45</sup>

While mercury is certainly an integral part of these recipes, it is not the main ingredient and Cakrapāṇidatta offers no special comment on its characteristics. Indeed, if there is one substance that receives special attention in Cakrapāṇidatta's *rasāyana* chapter, it is iron. Eighty-four of 202 verses in the chapter are dedicated to the subject of how to process iron and how to use it in *rasāyana* formulations. The simple procedure described in the

44 This is described in CD LXVI.129–35.

45 This is described in CD LXVI.136–51.



*Carakasamhitā* for processing iron is now exchanged for a complicated multiple-stage process that produces an end product called *amṛtasāralauha*, ‘immortality-essence-iron.’ Iron is mixed with various herbal and mineral substances, and heated and roasted in different processes called *māraṇa* (‘killing’), *puṭana* (‘enveloping’) and *sthālīpāka* (‘roasted in a vessel’). These preparation methods are similar to the alchemical *saṃskāras* for mercury. While no reason is given in the *Carakasamhitā* for the necessity of processing iron before use, Cakrapāṇidatta explains that the herbs he lists for use within the various stages of processing will remove the defects (*doṣa*) of iron.

Another eleventh century work, Vaṅgasena’s *Cikitsāsārasaṃgraha* (also called the *Vaṅgasenasamhitā*) contains more mercurial *rasāyana* recipes in its long and somewhat miscellaneous *rasāyana* chapter.<sup>46</sup> While this work is in many ways similar to Cakrapāṇidatta’s treatise,<sup>47</sup> its *rasāyana* section differs substantially. There are some fifteen recipes that mention mercury as an ingredient. In most of these recipes, mercury is one of many ingredients and seems secondary to another main substance, such as copper (there are copper compound recipes very similar to Cakrapāṇidatta’s ones), iron and mica. A few recipes also contain tin and lead. While iron is the most prominent ingredient in the *Cakradatta*’s recipes, the material that receives the most attention in the *Cikitsāsārasaṃgraha* is mica, which is described as a very potent medical and rejuvenative substance. The indications for the different *rasāyanas* that contain mercury vary from combating abdominal complaints to increasing sexual stamina to rejuvenating and prolonging life span. Several recipes mention *kajjali*, that is, a mixture of mercury and sulfur. For example, in a very simple recipe called *parpaṭarasāyana* (thin-layered *rasāyana*) mercury, sulfur and copper powder are mixed and roasted in a closed vessel. The resulting compound is taken with honey and said to alleviate all diseases.<sup>48</sup> In several recipes, a number of herbal ingredients are macerated with mercury and other metals (probably in

46 See Meulenbeld (1999–2002, IIA: 227–28) on the date of the *Cikitsāsārasaṃgraha*. The *rasāyana* chapter also contains information on the *marmans*, the vital points in the body, types of diseases categorized as being caused by wind, bile or phlegm, and a therapy using a head pouch called *śirovasti*.

47 Both works are modelled to some extent on the structure of the *Mādhavanidāna* and also borrow from the *Siddhayoga*. See Meulenbeld (1999–2002, IIA: 228) on the relationship between Cakrapāṇidatta’s and Vaṅgasena’s works. Meulenbeld regards it as likely that Vaṅgasena borrowed from Cakrapāṇidatta.

48 CSS Rasāyanādhikāra 115.



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processed form, though this is not completely clear from the text) and the resulting mass is then rolled into pills.<sup>49</sup>

A work from the thirteenth or fourteenth century, the *Śārṅgadharasamhitā*, represents a watershed moment in the history of the use of mercury in Indian medicine, as it presents an elaborately formulated system of processing and using mercury only alluded to in the older medical works. Its long chapter on mercury contains one rather complicated recipe for the purification of mercury (*rasasodhana*), two recipes for extracting mercury from cinnabar (*daradasodhana*), four recipes for giving mercury a 'mouth' to 'devour' other metals, four recipes for the 'killing', i.e. turning into ash of mercury, and nearly fifty recipes for medicines prepared from the above products.<sup>50</sup>

The recipes for mercury medicines that follow are diverse in production methods, ways in which they are applied and diseases they are meant to treat. A common denominator of all recipes is the occurrence of sulfur as one of the ingredients. Mercury is ingested mixed with honey or ghee, as a beverage or in the form of pills. It is also applied as an eye ointment, smeared into the nose, rubbed into a small incision in the skin or used topically on areas of the skin affected by skin disease.<sup>51</sup> Diseases or conditions to be treated with the various medicines span from fevers (understood as a disease category, not as the symptom of heightened body temperature) to digestive complaints (diarrhea, constipation, indigestion, colics, etc.), wasting and skin diseases.

Two of the mercurial recipes describe the making of aphrodisiac (*vājīkaraṇa*) tonics. The first potion, called *madanakāmadeva*, 'the god of passion and love,' is meant to enhance the consumer's strength, improve his appearance and prolong his life, as well as functioning as an aphrodisiac. A further recipe is specifically called a *rasāyana* (*loharasāyana*) and is meant to bestow longevity and youthfulness, but also has aphrodisiac properties.

*Vājīkaraṇa* is another of the eight formal divisions of medicine first introduced by Caraka. It is often coupled with *rasāyana* as the two subjects cover some of the same ground. That is, aphrodisiacs are often also supposed to give youthful strength and improve the general appearance of the consumer, while recipes for *rasāyanas* may list enhanced sexual stamina as one of the expected results of treatment. In many of the medical works,

49 See, for example, CSS *Rasāyanādhikāra* 93–100, 194–97 and 233–37 for recipes detailing how pills are made in this fashion.

50 ŚS II.12.

51 See ŚS II.12.135, 136, 121–26 and 190–93, respectively.



the *rasāyana* chapter follows the *vājīkaraṇa* one or vice versa. In others, they are combined, or one subsumes the other. In the early medical works, there are very big differences between *rasāyana* and *vājīkaraṇa* formulations and they are easily distinguished, most *vājīkaraṇa* recipes being for foods and ointments for topical use. However, this distinction becomes somewhat blurred in the later medical works, especially as mercury and other metals and minerals become introduced in *vājīkaraṇa* recipes, as well as other *rasāyana* staples, such as the myrobalans, and shilajit.<sup>52</sup> Certainly, the recipes for *vājīkaraṇa* and *rāsāyana* potions in the *Śārīṅgadharasamhitā* do not seem very different in nature from each other.

The recipe for the rejuvenating aphrodisiac *madanakāmadeva* details that (the ashes of?) silver, diamonds, gold, copper, mercury, sulfur and iron are macerated in the juice of aloe vera. The mixture is filled into a glass bottle that is sealed with rock-salt. The bottle is covered with mud plaster and then placed in a receptacle filled with salt. This, in turn, is set on a fire and gently heated for a day. The mixture is then macerated several times with the juices and milky saps of a number of plants. Then, powdered plant materials are added as well as quite a lot of sugar (the weight of sugar is equal to the weight of the rest of the materials). The consumer of this presumably rather costly preparation is promised beauty, strength and vitality as well as the ability to enjoy sexual intercourse with many young women without loss of semen, i.e. without loss of vitality.<sup>53</sup>

For the *loharasāyana* recipe, processed (the technical term used is ‘*śud-dha*,’ ‘purified’) mercury is mixed with purified sulfur to make the mercury-sulfur compound called *kajjalī*. Filings of magnetic iron are added and the mixture is then macerated for three days with aloe vera juice. This is done in sunlight so that ‘smoke’ (*dhūma*) – presumably the evaporating mercury – rises from the mixture. The mass is then placed in a copper vessel and covered with paddy husk for three days, after which the mixture is again macerated with a host of herbal substances. This is dried in the

52 The *Cakradatta*’s *vājīkaraṇa* section contains a number of recipes with the Indian gooseberry (*āmalaka*) and marking nut (*bhallātaka*). Its mercurial recipe is not similar to *rasāyana* formulations: In this recipe (57.51) an Indian beech (*karañja*) seed is filled with mercury (*parāda*) and covered with gold. It is then kept in the mouth during intercourse and supposed to let the man retain his semen. The *Cikitsāsārasaṃgraha*’s *vājīkaraṇa* section (LXXVIII.66) gives a recipe for a mixture of pyrites, honey, mercury, iron, chebulic myrobalan, shilajit and false black pepper. A similar recipe is also found in the *Bhāvaprakāśa*’s *vājīkaraṇa* section in Uttarakhaṇḍa 1.20.

53 See ŚS II.12.259–66.



shade, then ground, and stored. The mixture is administered in small doses with honey and clarified butter and is said to be useful in a number of indications: poor appetite, dyspnea, cough, urinary disorders, gripes, piles and others. It is also supposed to give the consumer strength and good color, sexual vigor and longevity as well as curing any disease.<sup>54</sup>

As already mentioned, the *Bhāvaprakāśa's rasāyana* section contains no recipes with mercury. Similarly, in the *Yogarātnākara*, a later work from about the early eighteenth century,<sup>55</sup> we find no mercurial recipe in the *rasāyana* section, though the author does mention that *gandhakarāsāyana*, a preparation based on sulfur, can be taken together with the ash of mercury.<sup>56</sup> But the author lists several mercurials in the *vājīkaraṇa* section (chapter LXXIV) and a few of these are said to have rejuvenating properties.<sup>57</sup> Indeed, the *madanakāmadeva* recipe from the *Śārngadharaśaṃhitā* is found there.<sup>58</sup>

In a slightly younger work, the *Bhaiṣajyaratnāvalī* (eighteenth or nineteenth century<sup>59</sup>), we find that mercury plays a prominent role in the *rasāyana* section. Ten of its circa forty recipes contain mercury. Notably, although the author Govindadāsa uses a number of recipes from the *Cakradatta*,<sup>60</sup> he does not include the latter's signature recipe, the iron-based *aṃṛtasāralauha*. Nor does he include Cakrapānidatta's (and Vaṅgasena's) mercury-containing copper *rasāyanas*. In fact, most of the recipes that contain mercury and other metals seem to be derived from a particular alchemical work, the *Rasendrasārasaṃgraha*.<sup>61</sup> Meulenbeld (1999–2002, IIA: 727) describes this work by Gopālakṛṣṇa as a treatise on alchemy in the

54 See ŚS II.12.275–89.

55 See Meulenbeld (1999–2002, IIA: 352) on the date of the *Yogarātnākara*.

56 See YR LXXVI.28–31 for the recipe for *gandhakarāsāyana* and verse 33 for the statement regarding the addition of mercury ash and gold.

57 For example, the *kāśmīrāvāleha* formulation in verses 50–57 is meant to provide longevity, health strength and radiance, while the *kāmāgnisandīpana* recipe in verses 78–94 is meant to confer strength and eradicate wrinkles and grey hair.

58 See YR LXXIV.112–18.

59 The part of the *Bhaiṣajyaratnāvalī* ascribed to Govindadāsa dates to the eighteenth century, but other parts (chapters II, IV and LXXVI–CVI) were added in the nineteenth century by Brahmaśaṃkara Miśra. The *rasāyana* section (chapter LXXIII) is thought to belong to the older stratum of text. See Meulenbeld (1999–2002, IIA: 336) on the date and the authorship of the *Bhaiṣajyaratnāvalī*.

60 For example, Cakrapānidatta's recipe for *śivaguḍīkā*, pills containing shilajit (CD LXVI.172–93 and BR LXXIII.151–75).

61 This is a rough count, and includes advice about sniffing water in the morning, et cetera as a recipe.



service of medicine and notes that it contains a large number of mercurial compounds against diseases. The date of this work is uncertain, with suggestions ranging from the fifteenth century to the eighteenth.<sup>62</sup>

## CONCLUDING REFLECTIONS

This overview is incomplete as it has not taken into account the many Āyurvedic works written between the sixteenth and the eighteenth centuries, and has also not surveyed the *rasāyana* recipes of alchemical literature. A more thorough examination of the entangled histories of Āyurvedic and alchemical (and *haṭhayoga*) *rasāyana* practices will be the focus of a new research project that will hopefully shed further light on the topic.<sup>63</sup>

However, from the examined works it should have become clear that mercury, while used in a number of Āyurvedic *rasāyana* formulations from the seventh century onwards, did not play a particularly prominent role for this part of medicine. The exception to this rule is the *Bhaiṣajyaratnāvalī*, which dedicates a fairly big part of its *rasāyana* section to mercurials, many of which are derived from alchemical literature. However, even in this work, there is no particular sense that mercury is given pride of place as an anti-aging, life-prolonging substance in the *rasāyana* section itself.<sup>64</sup> Rather, just as in the other Āyurvedic works, the sense is that mercury, while an integral part of the recipes, is just one of many suitable *rasāyana* ingredients within them. A useful and powerful, but not prominent medical substance.

This stands in strong contrast to the attitudes of the alchemists as reflected in the quotation from the *Rasaḥṛdayatantra* given at the beginning

62 See Meulenbeld (1999–2002, IIa: 730).

63 This is the ERC starting grant project ‘Medicine, immortality, moksha. Entangled histories of medicine, alchemy and yoga in South Asia.’ See [ayuryog.org](http://ayuryog.org).

64 In BR II.6, one finds the statement: ‘When its faults have been removed, mercury repels death and fevers; purified, it is truly a nectar of immortality, mercury with its faults is poison.’ – *doṣahīno yadā sūtas tadā mṛtyujvarāpahaḥ | śuddho ‘yam amṛtaḥ sāksād doṣayukto raso viṣam ||* As the preceding verses (3–5) explain, the faults or blemishes of mercury include its contamination with lead, tin and dirt, being flammable, unstable, poisonous and being unable to withstand heat. See also Wujastyk (2013: 24 and 31–32) on the faults of mercury in the *Bhāvaprakāśa* and the *Bhaiṣajyaratnāvalī*, respectively. It should again be noted, however, that chapter two probably belongs to the newer part of the *Bhaiṣajyaratnāvalī*, so that the definition of mercury as a nectar of immortality may not have reflected the original author’s views.



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of this essay. However, an examination of the actual *rasāyana* chapters of the alchemical works, and the recipes associated with them, may in fact reveal a similar attitude to that of the medical authors. This remains to be discovered.

## ABBREVIATIONS AND REFERENCES

Skt. = Sanskrit

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- ASaṃ Vāgbhaṭa: *Aṣṭāṅgasamgraha*. Srikantha Murthy, K.R. (tr.) (1995–1997). *Aṣṭāṅga Samgraha of Vāgbhaṭa. Text, English Translation, Notes, Indices etc.* 3 vols. Varanasi: Chaukhamba Orientalia.
- BhaPr Bhāvamiśra: *Bhāvaprakāśa*. Srikantha Murthy, K.R. (tr.) (1998–2000). *Bhāvaprakāśa of Bhāvamiśra, Text, English Translation, Notes, Appendices [sic] and Index*. 2 vols. Varanasi: Krishnadas Academy.
- BR Govinda Dasji: *Bhaiṣajyaratnāvalī*. Mishra, B. (ed.). (2006). *Bhaiṣajyaratnāvalī of Shri Govinda Dasji*. Enlarged edition. Commented upon by A. Shāstrī; English translation by K. Lochan; translation technically reviewed by A.K. Choudhary. 3 vols. Varanasi: Chaukhambha Sanskrit Bhawan.
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- CSS Vaṅgasena: *Cikitsāsārasamgraha*. Saxena, N. (ed.). (2004). *Vaṅgasena Samhitā or Cikitsāsāra Samgraha of Vaṅgasena. Text with English Translation, Notes, Historical Introduction, Comments, Index and Appendices*. 2 vols. Varanasi: Chowkhamba Sanskrit Series Office.
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- Sū *Sūtrasthāna*
- SuS *Suśrutasamhitā*. Sharma, P.V. (ed., tr.) (1999–2001). *Suśruta-samhitā with English Translation of Text and Dalhaṇa's Commentary along with Critical Notes*. 3 vols. Varanasi: Chaukhambha Visvabharati.
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